

# UC Santa Cruz

## Institutional History of UCSC

### Title

Growth and Stewardship: Frank Zwart's Four Decades at UC Santa Cruz

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## Introduction

[Francis] Frank M. Zwart III arrived at the University of California, Santa Cruz as a student at Cowell College in 1967, when the campus was a mere two years old and the students were “walking across planks where pipe trenches were still open.” Born in 1950 in Pasadena, California, Zwart is the oldest of five children and the son of an accountant.

Zwart graduated in mathematics from UCSC, but had no desire to become a mathematician. Instead, he drew inspiration from his mentor, the British art historian and UCSC professor Jasper Rose, who suggested he might want to pursue architecture as a career. He boarded a train east to study architecture at Princeton University. A westerner at heart, he missed California dreadfully and recalled, “In the distance, rising out of the New Jersey deciduous forest, were these Gothic towers. And I just said to myself, what have I done? . . . I wanted to be eating a burrito, driving in a convertible with the top down, down the Santa Monica Freeway.”

Despite his longings for the pleasures of the Golden State, Zwart persevered and earned his master’s degree in architecture from Princeton in 1976. He then entered a period of broad exposure to the profession, working with architectural firms in Princeton, Los Angeles, Santa Monica, Aptos, California (just south of Santa Cruz), Philadelphia, and Carmel before returning to UC Santa Cruz in 1985 as a staff architect and project manager. Thus he commenced a long and distinguished career at UCSC that spanned the tenures of seven UCSC chancellors.



Zwart became Campus Architect in 1988 and directed UCSC's Office of Physical Planning & Construction (PP&C) until his retirement in April 2010. (From 1999 until 2010 he also held the title of Associate Vice Chancellor for Physical Planning & Construction.) Due to Zwart's long tenure, this oral history, conducted as part of the Regional History Project's University History Series, documents over four decades of growth at UC Santa Cruz. It encompasses Zwart's years as an undergraduate during the late 1960s, when the campus gained national attention as a prestigious and visionary experiment in public higher education; his career as Campus Architect during UCSC's exponential expansion into a major research university; and more recent challenges such as the state budget crisis that is reshaping the landscape of public higher education in California even as this oral history reaches completion.

UC Santa Cruz opened in 1965 with 650 students who lived in temporary trailers. The original plan was for the campus to grow to 27,500 students through construction of a series of clustered colleges that each would have a distinct thematic and architectural identity. These colleges, of which there are now ten, surround a campus core of science and library buildings. For a variety of reasons, some of them environmental, campus enrollment has remained much smaller than the original projections. UC Santa Cruz now enrolls about 15,000 undergraduate students and 1500 graduate students.

The campus was built on the former site of the Cowell Ranch, a lime and cement company owned by Henry Cowell, a Massachusetts entrepreneur who moved west to earn a fortune in lime and real estate in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. Zwart remarked in his oral history, "Everybody thinks, well, redwood

is the indigenous building material of the campus. Well, it is *an* indigenous building material. But given that the Cowell Ranch and the Henry Cowell Lime and Cement Company made lime that went into cement, so is concrete. . . The first Long Range Development Plan called it out as the favored building material for the campus.” Indeed, most of the campus’s buildings are built of concrete.

UC Santa Cruz bears the imprint of many luminaries in American architecture, among them John Carl Warnecke, who in 1962 was selected by the Regents as Master Plan Architect for the new campus on the Monterey Bay. According to the *New York Times*, Warnecke, who died in April 2010, the same month in which Frank Zwart retired, “established a flourishing architectural practice in San Francisco noted for its commitment to contextualism—a respect for local surroundings when designing a building.”<sup>1</sup> In 1962, Warnecke was hired by the Kennedy administration to redesign and preserve historic Lafayette Square across from the White House. He later designed environmentally sensitive buildings at Stanford University, UC Berkeley, and the McHenry Library at UC Santa Cruz.

Warnecke chose Ernest J. Kump and Theodore C. Bernardi, as well as Robert Anshen of the firm Anshen and Allen as consulting architects. Kump was an international expert in school planning who, a few years earlier, had designed Foothill College in Los Altos and Cabrillo College which opened in Aptos, California. At UCSC, Kump would design the Central Services Building (now

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<sup>1</sup> William Grimes, “John Carl Warnecke, Architect to Kennedy, Dies at 91” *New York Times* April 22, 2010. <http://www.nytimes.com/2010/04/23/arts/design/23warnecke.html>

known as Hahn Student Services), and Crown College. Bernardi worked for the modernist firm Wurster, Bernardi, & Emmons (WBE), which won the American Institute of Architects architectural firm award in 1965. He designed UCSC's Cowell College. Anshen and Allen designed Natural Sciences Units 1 (Thimann Labs) and 2.

The Regents appointed the illustrious landscape architect Thomas Dolliver Church, father of the modern movement in architecture known as "California style," as the consultant for the 1963 Long Range Development Plan which would provide the vision for how the academic plan for the campus would be translated into physical reality. Thomas Church's words have inspired and guided future generations of UCSC campus planners, including Frank Zwart. Church wrote, in the 1963 LRDP

With the exception of areas especially preserved in their natural state the general effect in the main campus areas must be one of sensitive collaboration between the designer and this specular environment with the intent that neither shall impose unduly upon the other. To a greater extent than any of us have faced heretofore, the buildings are less important in the visual composition than the trees. Instead of remaking the land, the land must remake our standard conceptions of building and plaza and parking lot.

Throughout the years, UC Santa Cruz has faced planning and architectural challenges that arise from its spectacular and unparalleled setting in 2000 acres of redwood groves, deep ravines, and rolling grasslands overlooking the city of Santa Cruz and the Monterey Bay. It was one matter to follow Church's principles of environmentally sensitive design during the 1960s when UCSC was in its infancy, or during the ten-year period (approximately 1975-1985) during which (for a variety of complex social and economic reasons) enrollment leveled off and the campus experienced what architectural critic

Reyner Banham called “a building famine.” But Zwart’s perhaps daunting challenge was to maintain these guiding environmental principles of the 1963 LRDP and subsequent LRDP’s during the period of rapid campus growth that began shortly after he became head of Physical Planning & Construction in 1988 and continues today. During his tenure, the campus nearly doubled in size, adding 2.4 million square feet of new building space.

This growth intensified the town-gown divisions one might expect in a seaside town in California, a legacy of tensions that intensified during formulation of both the 1988 and 2005 Long Range Development Plans. In addition to town-gown tensions, other planning challenges UCSC confronts include the campus’s location on top of a rather rare (at least in the western United States) geologic setting known as karst, characterized by sinkholes, caves, streams that disappear underground, and abundant springs. Karst is formed in areas underlain by rocks such as limestone and marble that are soluble in water. In his oral history, Zwart describes several fascinating cases where the campus wrestled with this geology as they sited, designed, and built buildings and a swimming pool.

In March 2010, Zwart was named to the prestigious College of Fellows of the American Institute of Architects (AIA), an honor awarded to AIA members who have made contributions of national significance. Of a membership of 84,000, fewer than 2,600 AIA members are accorded the honor. The nomination commended Zwart for serving as an articulate and committed advocate for the campus’s founding values: site stewardship, thoughtful growth, and design excellence. “Frank’s expertise in identifying and collaborating with architects

who have the sensitivity to realize our campus vision has resulted in one of the most beautiful campuses in the world,” said Chancellor George Blumenthal. “That UCSC’s rich natural environment has been more important than individual buildings in creating a campus identity is a lasting testament to Frank’s talents and efforts,” noted the AIA nomination.

It is at least partly because of Zwart and his team of planners, architects, and other professionals in UCSC’s Office of Physical Planning & Construction that in 2010, even after decades of building expansion, UCSC was cited by *Forbes* magazine as one of the ten “most beautiful” campuses in the world.<sup>2</sup> And the authors of the revised edition of *The Natural History of the UC Santa Cruz Campus* were able to write in 2008, “UC Santa Cruz often feels more like a nature reserve than a campus—majestic groves of redwoods tower overhead, flower-filled meadows roll gently toward Monterey Bay, and mountain lions stalk dry ravines in search of deer.”<sup>3</sup>

Some of Zwart’s other achievements covered here include his role as convener of the Chancellor’s Design Advisory Board, an outside panel of two architects and a landscape architect that has served as the planning and design “conscience” for the campus. Two projects he covers in depth (as case studies in campus physical planning) are the Science Library (now known as the Science & Engineering Library) and Colleges Nine and Ten. In the section entitled “A

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<sup>2</sup> <http://news.ucsc.edu/2010/03/3613.html>

<sup>3</sup> Tonya M. Haff and Anne Hayes, “Human History,” in Tonya M. Haff, Martha T. Brown, and W. Breck Tyler, *The Natural History of the UC Santa Cruz Campus* (Environmental Studies Department, UC Santa Cruz: 2008), Printed by the Bay Tree Bookstore, University of California, Santa Cruz.

Chronological Oral History Tour of UCSC Campus Buildings,” Zwart guides the reader through the university grounds, building by building, providing a glimpse of the campus through the eyes of its most longstanding Campus Architect. In another section, Zwart describes the history of long range development plans at UCSC. He particularly focuses on his direct experience with the very complex 2005 Long Range Development Plan, but places that document in a broad and accessible discussion of UCSC planning over the past forty-five years. Zwart’s masterful “storytelling” makes this oral history quite engaging.

In preparation for this oral history, I spoke with several of Zwart’s colleagues and attended a lovely and emotional celebration for his retirement that took place at the UCSC Chancellor’s House in May 2010, where Zwart’s stellar qualities as a human being were praised as much as his accomplishments as Campus Architect. Catherine Faris, Associate Vice Chancellor Donor Relations and Development Programs at UC Santa Cruz said in her remarks,

After almost two decades of service, I can say that Frank is one of those truly extraordinary, and truly rare colleagues: thoughtful, funny, kind, utterly committed to getting “it” right and possessed of an almost encyclopedic knowledge of really just about anything and everything... Everyone here realizes that it is fundamental for an architect to have a finely-tuned aesthetic vision and a commitment to seeing it materialize. But this alone doesn’t determine success. It has been Frank’s collaborative style, his graciousness, and respect for others that has overcome differences of opinion, bureaucratic wrangling and the inevitable trade-offs along the way. It takes a special kind of interpersonal skill to move project after project through to such stunning realization.

In a phone consultation, Chuck Davis, partner in the prestigious architecture firm Esherick, Homsey, Dodge, and Davis (EHDD) described Zwart as “a pleasure to work with, articulate, direct in a charming way” and for

“having very high standards for the profession of architecture.” Zwart discusses EHDD throughout this narrative, especially in the sections on the UCSC Science Library, Colleges Nine and Ten, and the Seymour Marine Discovery Center. EHDD also designed Stevenson College in the early years of UCSC. In *NorCalMod: Icons of Northern California Modernism*, Pierluigi Serraino calls Joseph Esherick one of the creators of “Bay Region Style,” a label he believes was invented on the East Coast. This architectural style, characteristic of the Bay Area and certainly of much of UC Santa Cruz, is “a vernacular and unpretentious regionalism . . . sensitive to its climatic context, respectful of the native forms of its agricultural heritage, and intolerant of an aesthetic based on notions of mass production.” Serraino also names Theodore Bernardi and Charles Moore (one of the architects of UCSC’s Kresge College) as luminaries in this tradition who belong in a lineage traceable to California architects Bernard Maybeck and Julia Morgan.

Oral history is a co-creation of the narrator and interviewer. Zwart immediately grasped the collaborative nature of this endeavor and was one of the most engaged narrators whom I have interviewed in my more than two decades at the Regional History Project. He provided me with his curriculum vitae, background articles on his career and on UCSC history, and other useful presentations, documents and references, and initiated a pre-interview meeting over lunch at the University Center at which we discussed the draft interview outline I had prepared.

We began interviews on May 17, 2010 and continued until September 2, 2010, in a series of nine, approximately 90-minute sessions, for a total of about

fifteen hours of recording. All of the sessions took place at the UCSC Science & Engineering Library and were recorded digitally. Occasionally Zwart pulled out his iPhone to fact check some aspect of the interview, a new experience for me as an interviewer!

The interviews were transcribed verbatim and edited lightly for flow. Zwart carefully reviewed the transcript for accuracy and returned it with corrections and a few written comments which are incorporated in the volume. He also approved making the original audio recordings of the interviews available on the UCSC Library's website. This oral history is valuable primary source documentation of the history of campus planning and university architecture in the United States, and I thank Frank Zwart for the generosity he brought to this endeavor. Thank you also to library staff member Laura McClanathan for her meticulous assistance with proofreading.

Copies of this volume are on deposit in Special Collections and in the circulating stacks at the UCSC Library, as well as on the library's website. The Regional History Project is supported administratively by Christine Bunting, Head of Special Collections and Archives, and University Librarian, Virginia Steel.

—Irene Reti  
Director, Regional History Project, University Library  
University of California, Santa Cruz, June 2011



## Early Life

**Reti:** Today is Monday, May 17, 2010 and this is Irene Reti. I'm doing an oral history with Frank Zwart, and this is the first of several sessions. We're at UCSC's Science & Engineering Library. So Frank, let's start with where and when you were born. And tell me about your early family life, your parents, what they did for a living.

**Zwart:** I am a native Californian, a child of the baby boom. I was born in 1950 in Pasadena. My mother was also born in Pasadena, in 1923. She was born shortly after her parents had arrived from Italy. Her father and his brothers had worked their way across Canada on the Canadian railroad, down the West Coast, and then found a place in Pasadena. He bought some land in Pasadena, went back to Italy, had been courting my grandmother by correspondence, married her, and then came to this country and started a family. So I do have long roots in Pasadena.

My father's family moved to Southern California in the early thirties. There was an earthquake in Long Beach in either 1933 or 1934, and I believe they moved just before or just after that. He had been born in San Francisco. Both of his parents were born in Holland. So it occurred to me a few years ago that I don't have any roots anywhere else in the United States other than in California. All four of my grandparents were born in Europe.

I was the oldest of five children, and my mother was the oldest of five children. So we had lots of cousins around. My dad had two sisters in his family, and most

of the kids were in the Southern California area, so we saw cousins a lot growing up. I had a fairly standard and uneventful upbringing, in that I went eight years to the same grammar school, four years to the same high school, and then came to UC Santa Cruz in 1967. I spent four years here.

What I didn't realize, growing up in Pasadena, is what a lot of architectural treasures it has. I mean, it's something that people just aren't aware of. The church that we went to, St. Andrew's Catholic Church, was built in the late twenties or early thirties, and it was modeled after Saint Sabina in Rome, this magnificent Romanesque Basilica form church. They brought craftspeople over from Italy to decorate it. And that was just something I took for granted, being in there almost every day, since that's where I went to grammar school. And then of course there was the work of Greene and Greene; Frank Lloyd Wright had designed a house in Pasadena. It was really an extraordinary setting. One of my architecture school classmates came to visit—this would have been sometime in the late seventies—he's Chinese; he had some roots in Southern California. They came up to visit and they just laughed as we drove around town. Dan said, "Gee, I never realized anything like this existed in Southern California. I thought it was all like Orange County."

It didn't occur to me to go into architecture. We didn't know any architects when I was growing up. But I can't help but think that having been surrounded by all of that— And the downtown of Pasadena was very much inspired by the grandiose city planning visions of Daniel Burnham and the Great Exposition of 1893 in Chicago. The city hall of Pasadena was designed by Bakewell and Brown, the same architects who designed the San Francisco City Hall. So it was designed

in a very classical tradition, very classically laid out on a grid. So I think that influenced my upbringing considerably.

**Reti:** So when you were a kid, who did you think you would be when you grew up, professionally?

**Zwart:** You know, it was the 1950s. I don't remember exactly what year it was that Sputnik went up, but that had everybody all up in the air. I was a bright kid, and bright kids in those days were all going to be scientists. So I was going to be a scientist. That was it. But I got to UC Santa Cruz and headed in a different direction.

**Reti:** Tell me about your high school.

**Zwart:** It was a Christian Brothers high school, about five hundred kids, La Salle High School. I had some phenomenal teachers. Very clearly college prep, set out to be college prep. It had opened in 1956, so it was part of the big boom in building schools, particularly Catholic schools, in Southern California during the 1950s and 1960s, to respond to the baby boom.

I remember a very influential math teacher I had for two years, whom I'm still in touch with. I remember him talking about the way to discipline kids. This was in preparation for me going back to that school and teaching high school math, which is what I did the year after I graduated from UC Santa Cruz. He said the best way to discipline the kids in that school was just by public embarrassment and humiliation. (laughs) So that was the Christian Brothers school. It was fairly strict, but I had some terrific, terrific teachers. Brother Raphael, the teacher I was

just talking about, I believe we were the first class he ever taught. He was just fresh into the classroom. He was the one who told our class in 1963 that John Kennedy had been assassinated. This locates me in time. I'll never forget that.

After we graduated, he went off and got first a master's in math, and then a PhD at the University of Toronto. He's a geometer. He studied with one of the world's greatest geometers. And I was good at math. He was very quick-witted. And I don't have any doubt that it was under his influence that I headed into majoring in math at Santa Cruz, because I'd been good at it, and thought I knew something about it. But, well, that will come out in the Santa Cruz part of the story when we get there.

**Reti:** Let's just backtrack a little bit. So what does your father do?

**Zwart:** Oh, my dad was an accountant. He followed his father's footsteps and for many years they both worked for the same company. The first job I remember my father having was with Pacific Guano Company. It was a chemical fertilizer company. He worked most of the time in Southern California. There was a period of about two or three years before I started grammar school, so this would have been in the early 1950s, that we lived in Berkeley and El Cerrito because they [Pacific Guano] had a big office there. My father told me all that I needed to know about accounting was you put your debits by the window and your credits by the door, and you're fine until they move the furniture around. (laughs)

**Reti:** (laughs)

**Zwart:** To him it was just a livelihood. He was very much family-focused and that was a way to provide for the family.

**Reti:** What about your mom?

**Zwart:** She was a stay-at-home, classic 1950s mom.

**Reti:** There were five kids.

**Zwart:** There were five kids, yes. She was there all the time. They were both a real presence in the household.

### **Coming to UC Santa Cruz as a Student in 1967**

**Reti:** So what made you want to go to UC Santa Cruz?

**Zwart:** Well, I tell the story—I was probably a sophomore or junior in high school, but I think it was a sophomore, and I came to breakfast one morning and my dad said, “Oh, there’s an article in this morning’s *LA Times* about a new campus that the University of California is opening in Santa Cruz.<sup>4</sup> It’s going to be a liberal arts school; it’s going to be pass-fail; you might be interested in it.” I actually went back a few months ago and used the *Los Angeles Times* database and printed out a series of five or six articles from about that time. And I don’t remember exactly which one it is, but I’m sure it was one of them. It was

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<sup>4</sup> For coverage on the planning and early years of the UC Santa Cruz campus see: “State Builds University on 21<sup>st</sup> Century Lines,” December 11, 1964, *Los Angeles Times* pg C6; “Out of the Turmoil at Berkeley: Cozy Campus Created at Santa Cruz, January 25, 1965, *Los Angeles Times*, p. A1; “UC at Santa Cruz Offers New Hope on Scholastic Dilemmas,” April 25, 1965 *Los Angeles Times*, p. A1; “UC Santa Cruz Emerges as the ‘Place to Go’, January 16, 1966, *Los Angeles Times*, p. B1. All of these references were originally provided by Frank Zwart in planning for this oral history interview.

absolutely fascinating to read what was going on. It was clear that Santa Cruz was being seen as an antidote to Berkeley. It was going to be the anti-Berkeley. It was really born in an incredible spirit of optimism.

We'd always had an orientation to Northern California. I often say to Northern Californians, and it's true, actually, that my father was born in San Francisco and we were brought up in Pasadena to believe that we were Northern Californians in exile. So the possibility of returning to Northern California was quite attractive. We would often come up to Northern California during summer vacations since my father still had relatives in the Bay Area and my mother had some relatives in San Jose. We didn't spend a lot of time here, but I was at least familiar with the territory. We hadn't been to Santa Cruz. And on one of those trips (that must have been in the summer of 1965) I remember driving through the campus just being overwhelmed by redwood trees. At that time, the design and construction office, Physical Planning & Construction, was in the Carriage House. And they actually had out in front of the Carriage House, one of the trailers that the students we wound up calling the pioneer students were going to live in that first year. So they were getting ready for their first onslaught of students. That must have been in the summer of 1965.

But I have to say, applying to college, being admitted to college, in those days, while it was certainly tension-filled, is nothing like what it seems to be today—watching nieces and nephews and kids go through the college-selection application process. I mean, we didn't go off on organized trips to a dozen colleges to do that kind of campus shopping.

So that was really the only campus visit that I paid. In those days you submitted one application to the University of California, and you listed three choices in order, and you could not list all three of the new campuses. Santa Cruz, Irvine, and San Diego were all being opened about the same time. I know that Santa Cruz was my first choice. I suspect that San Diego was my second choice, and maybe Davis was the third choice. Having come from a small high school, I didn't think I wanted to go to a big place like Berkeley or UCLA. But I was admitted to Santa Cruz. It was really the only place I applied. I did start the application process to Stanford, but never got around to completing it. I did apply, and also got a Regents scholarship during my first year. So that was pretty good.

I probably should mention that the scientist stuff was mostly grammar school visions. The high school we went to was well balanced, but it was not particularly strong in science. In fact, one classmate of mine, a classmate and good friend, wound up going to Cal Tech, getting his PhD at Yale, and has been on the faculty at the University of Southern California [where he has been] since he got his PhD in the 1970s. And he really was serious about math. His dad was an engineer. But it took a particular effort on his part to pursue that. I just didn't have the passion to go into science. We did not have a particularly strong science program in high school. We had a much stronger general, liberal arts, well-balanced program. I found that more attractive by the time I got to high school. It wasn't as though I leapt from 1959 visions of being a scientist into architecture.

**Reti:** (laughs) Yes.

**Zwart:** That was affected by the high school education that I had.

**Reti:** So it was 1967 when you came to UCSC. Tell me about your first impressions of the campus.

**Zwart:** Well, it was pretty spectacular. It was so different than Southern California, and so different than Pasadena. You either love or get driven crazy by the landscape here. There are people, some of whom I'm still in touch with, some friends, who after a year or two here found that it was just too remote. There was just not enough going on. So they would transfer to Berkeley or UCLA and were much happier there. But I was always perfectly happy at Santa Cruz. The scale of things was very, very pleasant. You knew lots of people in your class. In those days, by comparison, I was really pretty much the straight arrow in Cowell College. I was not heavy into drug use. You'd walk down a corridor and you were more likely to smell marijuana smoke than you were to see empty beer cans in a wastebasket. It was really just a sign of the times.

It was also the time, of course, of student protest. I was just reading in the *New York Times* this morning that in 1970 Boston University canceled its graduation because of student protests and what had happened at Kent State. Forty years later they held a graduation ceremony for kids, now grown-ups of my age, who wanted to come back. Even though [UC Santa Cruz was] relatively remote geographically we were very much in the center of all that kind of activity. We were very much a product of our times. In the early days they used to publish a directory of all of the students college-by-college, and there was a photograph, a thumbnail photograph or postage-stamp sized photograph, and the campus



address and home address. And it's interesting to go back and look at those in 1965 and 1966, and look at the 1965 and 1966 yearbooks that were published, and see the short hair, the surfer shirts and so on, and then see the transformation that occurred over the four years that students were here. Part of it was practical, I mean, the kind of the kind of dresses and stuff— (laughs) It was muddy! My freshman year Crown College was being built. In fact, I was telling this to the students who were doing a video of me doing an architectural tour of parts of the campus. My first quarter French class was at Crown College, which was just being completed. And I have memories of walking across planks where pipe trenches were still open. I mean, it was pretty rough and ready here. I don't know whether Gore-Tex had been invented in 1967, but—

**Reti:** I doubt it. Coated nylon. (laughs)

**Zwart:** But whatever raingear was, and hoods and heavy shoes, with the climate in Santa Cruz and the fact that we were out in the woods—I think that had a lot to do with the change in fashion at least. And then of course there were the social aspects of it, with long hair and the look that came to mark the campus in Northern California in particular in the late sixties and early seventies.

**Reti:** So tell me about some of the professors that you had.

**Zwart:** Well, one thing I didn't realize at the time, and only understood many years later, was that because Santa Cruz was new, the traditional faculty-to-student ratio in the University of California didn't apply. You needed a certain number of faculty members just to get something started. So we really benefited, in that the number of students per faculty member was much lower than it is

today, or even than it would have been five or ten years later, because we were relatively small. I remember signing up for my first quarter calculus class. It was to be taught by an instructor named [Jim] Chrislock. All of the professors were Mr. this and Mr. that. There were very few Miss or Mrs., (although there were a handful of women faculty members), and they all went by Mr. rather than Doctor. And Jim Chrislock was the math instructor who I had, and there were class signups. You had to go to his office. So there were several people waiting in the corridor outside Stevenson College, which was brand-new at the time. And in comes this young guy with a big white dog, a husky, and opens the door and goes in. I thought to myself, oh, he must be the TA, he's so young. By the time I got in to sign the list he was sitting at the desk and the dog was under his feet. And he wound up being the professor. But as I understand it, Chrislock didn't last. It was a pretty wild and wooly time among the faculty in those days. I don't know the details of it. I just heard about it. Some of it is probably recounted in oral histories somewhere. The last I heard Chrislock went off and built houses in Northern California, became a contractor. But he was good at math and I took three courses from him.

Ed Landesman was another math professor who went on to—I don't know if he was actually provost or senior preceptor at Crown? He was a terrific teacher and a wonderful guy, a very interesting guy, on the math side of things. My junior year I took Complex Analysis from Landesman. By the time I got to my senior year I was pretty sure that I wasn't going to go into math.

And one of the more influential faculty members was an art historian named Jasper Rose, and I'm sure I'll get back to Jasper in a few minutes. But I went to

talk to him, and I asked him about going on to graduate school, and he said (I won't pretend to do his Cambridge accent), "Well, do you think about mathematics all the time?" I said, "No!" And his response was, "Then, dear boy, you'll never be a mathematician."

By the time I got to be a senior I had actually completed all the course requirements for a math major except for two. So I took Real Analysis from a professor named Gerhard Ringel. Ringel just died within the last year or two, a very gracious, stately man. I mean, if you had called up central casting and said, "Send me a math professor," you might have gotten somebody who looked and behaved very much like Gerhard Ringel. He was a man of many, many interests. He was a topologist and geometer, and was very active in working on the four color theorem, which was a big part of combinatorial theory. But somebody found out that he surfed. So in class one day somebody said, "So Professor Ringel, when are you going to take us surfing?" His eyes lit up, and he got this big grin on his face. He said, "You want to go surfing?" [German accent] "Okay, we will go surfing." And he arranged to have the PE department send wetsuits and surfboards down to Cowell Beach one morning (not during class time) and we went surfing. And he took us all surfing. I tell that story because that was the nature of potential interactions between students and faculty in those days, because of the scale of things. Many years later I wound up working with a young woman architect who is now the chair of the architecture department at Cal Poly Pomona. Her boyfriend was a PhD student here at UCSC in math, and I found out from him that Ringel also collected tropical butterflies. He had a

phenomenal tropical butterfly collection that he would show to graduate students when they came over. So it was a special bunch of people.

**Reti:** So when you were surfing, did you talk about the mathematics of the waves, or was it just for pure enjoyment?

**Zwart:** Not at all. It was just pure enjoyment. In fact, there was a math professor named Al Kelley who decided he wasn't going to wait for the wetsuits. This was a foggy spring morning down on Cowell Beach, and he was out there just in a bathing suit, and none of us could figure that out. It looked pretty frosty.

But my connections with students and faculty tended to be more in the college, in Cowell College, which was my undergraduate college, rather than in the math department, although the courses in those days—I doubt that I had a class of more than thirty-five or forty students, and they were all taught by faculty members.

The other activity, though, was what happened within the colleges and the faculty members that I got to know there. In those days at Cowell there was a core course requirement that lasted for two years, for six quarters. The first year was World Civilization. It was a combination of three lecture classes a week and two seminar classes. The Monday and Friday lecture classes were given by Bill Hitchcock, William Hitchcock, who was a Medieval historian. This was a course that he had perfected at UCLA before he came up as a founding faculty member. Class periods were an hour and fifteen minutes. He would take his watch off and put it on the lectern in front of him and he would speak without notes for an hour and fifteen minutes. And the only time he read anything was if he would

bring in a book and he wanted to read a quotation. He had the whole course organized that way.

In contrast, the Wednesday lecture was by an art historian named Mary Holmes, also came up from UCLA, a very close friend of Page Smith, the founding provost of Cowell College.<sup>5</sup> She was a phenomenal lecturer, very engaging and very involved. And so between the two of them—and then of course we had a reading list that we worked our way through with seminar instructors. The two seminar instructors which I had the first two quarters were a Medieval historian named Richard Mather (who just died within the last two or three months, at close to ninety), and then the third quarter, Jasper Rose, who was an art historian from Cambridge, who wound up being very influential in my time at Santa Cruz. He was very Anglo-centric and very eccentric. I mean, when he lectured he would lecture in his academic gowns, although he spared us academic gowns in the seminar. He was just in a sport jacket. He taught me the meaning of English eccentricity. But he was very devoted to teaching, very devoted to education. He went on to become the provost of Cowell College. Even though I'd been a math major, I was so impressed with him that he wound up becoming my academic advisor during my junior and senior years.

My other advisors—one of them I still see sometimes, in fact I just saw him a couple of weeks ago—Stanley Williamson was a chemist. I was an undeclared major for the first two years, so I'm sure I'm that they assigned the advisors

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<sup>5</sup> See Randall Jarrell, ed. *Page Smith: Founding Cowell College and UCSC, 1964-1973* (Regional History Project, University Library, 1996) <http://library.ucsc.edu/reg-hist/smith>.

alphabetically, because he was a W and I was a Z. (laughs) I probably hadn't thought about that until the second year, when he was on leave and my advisor was a music professor, a violinist named Julia Zaustinsky. So when I saw W and Z as my advisors, I was convinced that they assigned the advisors alphabetically.

**Reti:** (laughs)

**Zwart:** But it was actually Jasper Rose, as I said before, who suggested that I think about going into architecture. He's the one who said, "Do you think about mathematics all the time?" I said, no. And he thought that I might be interested in architecture. My first reaction was, I don't really want anything to do with the kinds of buildings they are building these days.

**Reti:** These days. What were you thinking of?

**Zwart:** The fifties and sixties—

**Reti:** Modernism.

**Zwart:** Exactly. I liked old stuff. I mean, just the immediate emotional appeal. I was starting to learn, through the art history portions of World Civ, a little bit about the different general styles of architecture—Classical and before that Gothic, Renaissance, Baroque, that sort of thing. I was starting to get a handle on that. But I knew next to nothing about the modern movement. And so, since in my senior year I had only two math classes to complete to take my major requirement, I took some independent studies in the history of architecture with Jasper Rose, because there weren't any in the art history curriculum yet. We just hadn't gotten to that size. I would go to his office once or twice a week and

follow a reading list that he prescribed. But his focus was also on older styles of architecture, classical, William Morris, the pre-industrial revolution. I don't think we got much past William Morris and the Art Nouveau and the Arts and Crafts Movement. But somehow he had gotten a spare copy of a big, really very handsome book on English Baroque architecture. He had an extra copy. He said, "Oh, I'll give you this one." And he inscribed it to me.

Several years later, when I was in architecture school at Princeton, we had a faculty member there named Tony Vidler, who had studied at Cambridge, which was Jasper Rose's academic training ground as well. I brought this book in, because we'd been talking about something related. Princeton's architectural education tended to be very focused on historical precedent. When I opened up the book and Tony Vidler saw the inscription he said, "Is that the same Jasper Rose I knew at Cambridge?" I said, "Probably." What I didn't realize at the time, and I don't know whether it's still true or not, but it was certainly true in the seventies, that art history and architecture were a single department at Cambridge. So it wasn't entirely a surprise that Vidler and Rose knew each other.

I wasn't quite sure what I wanted to do as I got to the end of my time at Santa Cruz. I had been trying to see what pursuing an architectural education would mean, see what schools there were and were available. I happened to see a poster for architecture school at Princeton. At that time (this would have been 1970 or 1971), it noted that all of its graduate students got financial aid. So I kept that in mind a few years later when I got around to applying to architecture school, and that's where I wound up.

I don't know what else to say about the early days at Santa Cruz. I mean, those of us who were here—I don't know if we realized at the time what a special opportunity we had, and how privileged we were to be here. I do know when I did go off to architecture school at Princeton, it was a very small school and a very small class, I felt as well prepared as anybody in my class. And I owe that not just to the contact that I had with the various faculty members and their dedication to teaching and their general approach to things, but also to the kinds of students that I was in school with [at UC Santa Cruz]. I felt very well prepared and ready for Princeton.

If you go back and look at the statistics, I think in those days the ratio of applicants to accepted students at Santa Cruz was as high as anywhere in the [UC] system, and maybe even higher. It was a very desirable place to be. We had lots of students whose parents were faculty members, both at the UC and elsewhere. My freshman year roommate, whom I'm still in touch with, was the son of a professor of plant pathology at Berkeley. This was really seen as a special place to come and send your students.

**Reti:** Was there any problem with having narrative evaluations, as far as you getting into Princeton?

**Zwart:** I don't know. I sent in my application and I got in. My typical response to that, is that in an entering class of fifteen students at Princeton, two of us had been undergraduates here at Santa Cruz. So that's my answer. In fact, when it came time to apply to architecture school, I figured I'd wind up in California. So I applied to Berkeley, UCLA, and Princeton. I got into UCLA and Princeton. I



didn't get into Berkeley. I learned later that Berkeley in those days tended to look for people who had been out of school for several years and had some work experience before they admitted them. I don't know whether that's still the case or not. So I didn't experience any problem. I still have, sitting in a file somewhere at home, a copy of my undergraduate transcript. Instead of just a single sheet of paper with four years of classes, it's fourteen or fifteen pages long. So I can only think, not having sat on an admissions committee, if you had to read through that for everybody who is applying at a popular school, I can imagine that that would be a little time consuming. But I also have to think that fifteen pages worth of narrative evaluation give a much better picture of a student than just a bunch of A, B, Cs and Fs. I'm biased that way.

**Reti:** Yes, me too. I'll confess. (laughs)

**Zwart:** (laughs)

### **Architecture School at Princeton University**

**Reti:** Okay, so now you've gone off to Princeton. Suddenly you're in New Jersey, and you're on the East Coast. What was that like?

**Zwart:** Well, it was interesting. I had never been further east than Montana, when I applied and was admitted to Princeton. I did send in an application [for financial assistance]. And by the time I was admitted, Princeton, for whatever reason, wasn't quite as flush as it had been two or three years before. So they weren't able to offer me any financial aid other than a student loan. I was bowled over by the fact that I was admitted. I think I was walking on air for a couple of

days. But I was worried about, could I afford three years there? So I actually telephoned (I never set foot on the campus until I actually went back), and I talked to the director of graduate students. I said, "I'm certainly willing to come." I had saved up. I had worked for a couple of years. I taught high school for a year and I worked in an insurance company for a year, and I'd lived at home with my parents. So I'd been able to put some money away.

**Reti:** So you didn't go directly to graduate school.

**Zwart:** I didn't go directly. No, I spent two years in Pasadena saving up money for graduate school. I had enough saved that I figured I could pay for myself for a year with the loan that I was getting. I wanted to know what the chances were of financial aid in subsequent years. He said, "We try to make financial aid available to students as long as they're doing well." It's a three-year program. The programs I was applying for were becoming increasingly common, and I think they may have become even more common since then. It used to be, and I think there are still a few schools that offer five-year professional degrees in architecture, called a bachelor's of architecture. More commonly now (this was true at Princeton and it's true at Berkeley), you could get a four-year bachelor's degree in architecture. It's a bachelor of arts, so it's not a professional degree. And then, to get a master's degree with a bachelor of arts in architecture is a two-year program. There are programs, like the one I went to (and Berkeley and UCLA also had one), where if you have a bachelor's degree in a discipline other than architecture, you can get a master's in either three or three and a half years, depending on the program.

So I went into a three-year master's of architecture program. My class included, oh, all kinds. There were some people who had had some design background, quasi-architectural. There was David Hingston, who was the other Santa Cruz alumnus, who had a degree in history. I had a very close friend who had a degree in philosophy from Georgetown. Another had a degree in economics from Columbia. Another had all but the thesis for a master's degree in art history from NYU. There was somebody with undergraduate training in electrical engineering. So we really came from all over the place.

And because I had never been back East, and because I needed to bring stuff with me, I decided to take the train across the country rather than fly. So I got onto what was then the Santa Fe Super Chief in Pasadena, and headed East to Chicago. That was an adventure. I bought a big Sears, Roebuck shipping trunk that I think is still in the garage of the house I grew up in in Pasadena, at least it was the last time I looked. It's not full of my stuff anymore. There's other stuff in there. But I headed out to Chicago, changed trains in Chicago. We had enough time between trains in Chicago for me to step outside and look up and see the Sears Tower going up into the sky. And then from Chicago the train went, and I got off the train in Trenton and got a taxi ride to the campus. The oldest school I had ever gone to opened in 1949. That was my grammar school. I was in my grammar school from 1955 to 1963; my high school opened in 1956 and I was there from 1963 to 1967; and of course Santa Cruz opened in 1965. So in the distance, rising out of the New Jersey deciduous forest, were these Gothic towers. And I just said to myself, what have I done?

**Reti:** (laughs)

**Zwart:** (laughs) I mean, where am I? I had gotten lodging in the graduate college, which was actually about half a mile away from the main campus. I learned many years later that the siting of it there rather than at the main campus is one of the reasons that Woodrow Wilson left the presidency of Princeton. He lost that battle. He thought the graduate school should be with everything else. It was located remotely, so that the sons of shoe clerks wouldn't contaminate the children of privilege, at least this is how I heard the story. So he lost that battle. Then the Democratic machine was looking for somebody to run as governor of New Jersey and that was the beginning of his elective political career.

But wandering around that very first night, I met another Californian, somebody from UC Riverside. He was a music major and he wound up being my housemate during my third year in architecture school. He was there probably longer than the three years that I was there. And the last I heard, he was the chair of the music department at UC Davis. So there was a fairly good representation of Californians at Princeton.

But I have to say, it was a very different time. I would tell people that there were times I would be enormously homesick. I wanted to be eating a burrito, driving in a convertible with the top down, down the Santa Monica Freeway. It was just a very different place. But I'm glad I did it. We had a terrific class. I mentioned a little earlier the great variety of backgrounds that we had. But we'd all come into it with different backgrounds. We didn't have to show that we were the best architects in the world. We didn't have to stake out turf for ourselves as experts in our particular discipline. We were all there to learn about architecture. We had very good teachers. In fact, I'm still in touch with a couple of them. One of them,

Harrison Fraker, went on to become the dean of the College of Environmental Design at Berkeley, and I think he's still on the Berkeley faculty. And one of my classmates (I was just reading some email this morning) has been putting together a couple of reunions this summer. So we'll be getting together in Princeton at the end of June, and out here on the West Coast at the end of July. I'll have a chance to see a lot of those people again, and am looking forward to it.

**Reti:** As your education unfolded, did you have a sense of what direction you wanted to go once you became an architect?

**Zwart:** Princeton was a very small school. It's the smallest school of national reputation that I'm aware of, the smallest architectural program. I think it was about half the size of Berkeley. Maybe two-thirds, maybe even half the size of UCLA's program. It was very much unlike medical school or law school, where you pick a specialty and pursue it. It was a great believer in generalism and universal education. That was one of the things that attracted me about it. I didn't have to pick out that I was going to go into health care [architecture], or that I was going to go into a particular aspect of architecture. I think that if you had wanted to do that you could have crafted that for yourself. But that didn't seem the right thing for me.

I didn't know a whole lot about what it meant to practice architecture, so I didn't set out to become a campus architect, or to work on campus projects. At bigger schools I think it's fairly common that as you go into a semester or a quarter, or whatever their academic structure is, you may have a choice of one or two or three design studios to pursue. Princeton was of a size that there was just one.

All of us who were first-year students had the same studio instructors first semester, second semester, and right on through.

And the variety of projects that were assigned was also enormously wide. I remember our very first project was a design for *The Princeton Packet*. *The Princeton Packet* was the local, weekly newspaper. So essentially it was a printing plant. Our second project was a high-rise complex to be sited at the site of the Long Island Ferry Terminal at the south end of Manhattan. So we worked at all kinds of different scales. There was a lot of attention to context. This was in a period when what wound up being called post-modernism was being crafted, and the notion of a stand-alone building that was a pure object in and of itself (whether that ever actually existed in the minds of the best architects I doubt), but that's how modernism came to be seen. But the notion of actually fitting into the context, and understanding the context was something that architects were discovering and rediscovering. Thinking about the context was a major part of our education. So we had a series of design projects, as I said before, of widely varying scale.

Now, the other thing that was critical—one of things that also affects one's career path as an architect is the degree to which work in architectural firms is tied to the economy. It's extremely cyclical. We graduated from Princeton in 1976. One of my classmates, who was from Milwaukee and whose wife was from a farming community within an hour or so of Chicago, knew he wanted to go back to Chicago. He contacted something like fifty or sixty firms before he actually found a job that paid not much more than minimum wage. This was with a master's degree in architecture.

**Reti:** Oh, my God.

**Zwart:** I knew I wanted to come back to California, so I wrote a number of letters, and got more promising responses from San Francisco and Los Angeles than many of my classmates were [getting during their job searches]. Most of my classmates were looking in the Northeast. Another of our classmates visited firms in New York, Philadelphia, Boston, before he found something. The country was in a real economic slump.

My master's thesis was the original design for College Eight, which was on a site north of Kresge College, about where the trailer park is today.<sup>6</sup> The original design for that was done by an architect named Edward Larrabee Barnes, who had offices in New York. In my last year, I had come back to California and to UCSC during Christmas break, which was [Princeton's] mid-semester break. I had visited the campus and gotten background material on the project. I had gotten a site plan, and I had gotten the project program. And I wanted to go in and talk to the architect who had actually worked on the project. The project manager in Barnes' office was a woman named Hildegard Bergeim. I was in New York one day and went to see her. Unfortunately, she was out sick that day so I never met her. I think I must have talked to her on the phone once or twice. But walking into Barnes' office was like a ghost town. It had been a very large firm. There was a little reception area and there was a receptionist there. And there were desks, two or three desks for typists and clerical support staff there

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<sup>6</sup> Frank Zwart's master's thesis is archived in UCSC Library's Special Collections—Editor.

that were empty. You just had the feeling of not much going on. That was true throughout New York and throughout the country. So where you wound up very often depended on where economic opportunities were. And so, when I was hearing those kinds of stories from the Northeast, I was very glad that I'd spent my three years at Princeton. But I was happy to get back to California, because I've always thought of myself as a Californian first and foremost.

### **Master's Thesis on UCSC's College Eight**

**Reti:** Can I ask you to talk more about the master's thesis while we are still at Princeton?

**Zwart:** Sure. Well, I could have brought it. I have it in a binder, actually. I had it sitting in my office for a while.

Originally, the residential colleges [at UCSC] were thought of as including student accommodations, faculty offices, classrooms, and a library or reading room. I know the first five colleges, which would have been Cowell, Stevenson, Crown, Merrill, and Porter, were all designed with only residence hall or dormitory accommodations. When I was an undergraduate, planning was getting started for Colleges Six and Seven, the colleges that became Kresge and Oakes. People tended to chafe at the restrictions of dormitory life. They were eager to get off campus. So those [sixth and seventh] colleges were built with student apartments rather than with residence halls, so it was mostly a four-student cluster with a kitchen. What I don't remember (and I'd have to go back and look and see if there are any clues about it in my plans), is whether the



residential accommodations in College Eight were intended to be dormitories or apartments. But it was on the order of four hundred students.

My thesis advisor was an architect named Carles Enric Vallhonrat, who was Argentinian by birth and initial architectural training, but came to graduate school in architecture at the University of Pennsylvania, which is where Louis Kahn, the great American Philadelphia architect taught for many years. And he was in Kahn's studio and then worked closely with Kahn on a number of his projects. I think he worked on the Salk Institute in San Diego and several of his projects in India and Pakistan. So the training came very much out of the Louis Kahn school.

I had no input, to speak of, from anybody from California, other than David Hingston, my old Santa Cruz buddy. And it was interesting, when I presented my design. Back in those days, Le Corbusier was all the rage among the faculty at Princeton. Many of them had come out of graduate school at Cornell, and studying Le Corbusier was the thing. And I had the sense that their approach would have been—rather than to knit something around the trees, which is the approach that is pretty commonly taken at Santa Cruz and that's been very successful—their preference would have been to do the sort of thing that Le Corbusier would do, which was to create a platform, and then compose objects, buildings as objects, and create a composition around and among them. I had the distinct impression that they weren't quite sure how to comment on my design because the context was so unfamiliar to them, so foreign to them. I have to say I spent three years at Princeton trying to figure out what easterners thought of Californians. At one point I was driving up to Boston for Thanksgiving with

some graduate student friends and one of them said, “Does everybody surf in California?”

**Reti:** (laughs)

**Zwart:** (laughs) And one of our faculty members, Tony Vidler, he had never been to California, and I had the impression that there was terror at the prospect of getting to California.

**Reti:** (laughs)

**Zwart:** He wound up being on the faculty of UCLA School of Architecture for a short while, so I know he has made it out to California since then. I haven’t seen Tony Vidler in many, many years. But I think some of those barriers to cross-continent travel still were in place as late as the 1970s. Most of them have been erased by now. It’s very different than it was then.

Without a copy of my thesis, it’s hard to describe what the design would have been. But it wound up in my portfolio and my portfolio was successful in getting me work once I got back to California.

I tried very much to keep it in the spirit of UC Santa Cruz, to fit it into the landscape. One of the very interesting things (and I don’t know that we could do this today), when I paid the visit to the campus to pick up site plans and to pick up the program statement for College Eight, I also went to the site. I took photographs of it, although those disappeared long ago. I haven’t seen those for a long, long time. It was a huge clearing. After I became campus architect, probably about ten or twelve years ago, I went back to the same site and it was

completely full of shrubbery. It was pretty clear that in anticipation of design they'd cleared the site so that the architects could see what was going on there. It's all grown back with manzanita and shrub and chaparral. For lots of reasons we couldn't clear the site today, so the site really isn't perceivable the way that I saw it in 1975.

**Reti:** I remember being an environmental studies major in the late 1970s and early 1980s, and Jim Pepper, who was one of my professors—

**Zwart:** Yes.

**Reti:** He was running this class that involved students planning potential designs for College Eight. There were little models around Kerr Hall. That was going on for years.

**Zwart:** What was the site?

**Reti:** It was down the hill, I think where it ended up.

**Zwart:** That's right, because there were some efforts to do some— Again, there were some campus, systemwide, and statewide politics involved in this. I don't know exactly the history of it, so what I'm going to say is fragmentary and may not be completely accurate. But there were stories that I heard that the capital planning office in the Office of the President for many years was very upset at UC Santa Cruz because some faculty members did an end run around the Office of the President and went to Sacramento to relocate the site of College Eight from the originally conceived one, the one north of Kresge where there was a design, to somewhere else. And I think it may have been that site where the Student

Center, or what we now called the Academic Resource Center actually wound up. That was when there were starting to be some budget cuts, so the funding for College Eight's construction, got cut out of the budget in Sacramento. I heard it was done by Jerry Brown; I don't know that for a fact. And then we didn't get it for twenty years. College Eight actually wound up starting in Kerr Hall. It was a commuter college for many, many years. You were there. There were some politics involved around that, but I don't know the details of that. What I've told you is what I've heard. I remember Jim Pepper's name being mentioned in that context, and also Paul Niebanck, who was hired—I don't know if he was actually originally intended to be the provost of College Eight, but he was a faculty member in environmental studies. By training he was a city planner. So I don't know what actually happened, but I did hear that the budget vice president in the Office of the President for many, many years, Larry Hirschman, who had a long memory, was always very upset because for many years he attributed the fact that it was cut out to the fact that some faculty members went around and—I'm not quite sure where the appeal was, whether it was to their legislators—I'm not quite sure what happened, but there are some rumors about that.

That was really the beginning of the very slow period of growth. If you look at the history of campus development from about 1975 or 1976 to about 1985, almost nothing was built. It was just very, very slow. I don't think that was unique to Santa Cruz. I think it was true throughout the University of California system.

**Reti:** We'll get to that in a few minutes. But first, let's go back to your developing career. So you graduated from Princeton and then you went into private practice in Pasadena?

**Zwart:** Well, no. When I came back, I thought I wanted to be in the Bay Area. I'd had some favorable responses. In fact, the letters I was getting back from firms, when I did get letters back, were much more encouraging than the word I was getting from classmates who had been looking in the Midwest or in the Northeast. So I decided to come back to California. I came up to San Francisco and stayed with a friend, who graduated a year or two ahead of me but wound up going to architecture school after me. I think his wife and he had spent a couple of years in the Peace Corps in Nicaragua. They were in Berkeley, and I would often stay with them. I took BART across the bay and I did some job hunting. And again, things were promising but nobody offered me a job.

### **Working as an Architect**

So I started the same sort of expedition in Southern California. There was a very, very well-known Southern California architect, I don't know whether he was ever dean at USC, but he was on the faculty there for many years. He was a mainline modernist named A. Quincy Jones. I sent a resume to him, or stopped by his office sort of on a cold call. He and his wife worked very closely together. She ran the office for him. She explained to me that there weren't any jobs in his office but he liked very much to meet all of the new, young architects coming to town. So I spent a very pleasant half hour, or whatever it was, with him. And he said, "Well, I don't have anything now, but I know somebody who is looking.

Let me make a phone call.” So he called an architect named Chuck Kanner, Charles Kanner.

Kanner, for many years, had had his own practice, and I think in the economic turndown had taken a job as director of design in a firm called Charles Luckman Associates. Now Charles Luckman Associates was a very prominent Southern California firm. His business acumen was much better than his architectural talent. Luckman had been a partner of William Pereira. And Pereira—I don’t know how they came together and I don’t know how they separated, but by that time, in the mid-seventies, there were two offices: William Pereira and Associates, and Charles Luckman and Associates. Pereira actually did the original Master Plan for UC Irvine and was very close to the Irvine campus. Northern California readers or listeners will recognize Pereira because his firm designed the Transamerica Pyramid. So they did national projects. Luckman, I think, designed the renovation of [New York City’s] Penn Station, which wiped out the old Classical, the old Penn Station that was modeled on the Baths of Caracalla—with a pretty pedestrian Madison Square Garden complex. He’d come out of a sales background. I think he’d worked for Lever Brothers [the soap company] before he set up his architectural practice.

Anyway, Chuck Kanner had been hired to set up a design group there. I went over and showed him my resume and they [Luckman Associates] had a couple of possible projects. So I was actually hired by Chuck. In the course of our interview Chuck mentioned to me that he had a daughter who was a student at UC Santa Cruz. I said, “Oh, that’s interesting.” (There’s more to that story in a minute.) So I worked with Chuck, and I worked with an architect named

Miloyko Lazovich who was from Yugoslavia, as his name might suggest. And he, for many years had worked with César Pelli, who had been the director of design at Victor Gruen's office, and had done a lot of malls. Pelli has gone on to be quite prominent nationally and internationally. I think he now practices on the East Coast, and he's done a lot of work all over the world. And Miloyko came from that, again a modernist tradition.

We didn't have a whole lot of work going on. There were just some prospects that they were trying to build up, and I only was there for four or five months when they decided they just didn't have the work to support me. So that didn't last very long.

But after I'd been there a couple of months, we were working late one evening, and Chuck Kanner wanted to know if in my time at Santa Cruz I had known a faculty member named Jasper Rose. I said, "Well, yes. In fact, he was my advisor and he was the person who suggested I think about a career in architecture." And Chuck laughed and said, "Well, my daughter, Cathy, is living in his house while he's on leave in England this year." So it's funny how these very small worlds— Chuck didn't last much longer than I did at Luckman's office. He probably left after I did and then went out and set up his own firm. His son was an architecture student at Berkeley and picked up the practice. I think it still carries on in Southern California.<sup>7</sup>

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<sup>7</sup> Zwart learned, subsequent to this interview, that Chuck's son, Stephen, died in July 2010.— Editor.

I had met another architect in Luckman's office, a man named Sam Tolkin. He had a small residential office in Santa Monica, so after I left Luckman's office I worked for him for several months.

And about that time I had a phone call. Let me back up to my days at Santa Cruz. Among the faculty members that I had met here was an American historian named John Dizikes. John was a founding faculty member, and he was a senior preceptor when I was a residential assistant at Cowell College. And although I never had a course from John, he is probably the faculty member that I've stayed closest to in all of my time, which is indicative of the faculty-student relationships and contacts in those days. Through John and [his wife] Ann I met a local architect named Richard Peterson. Richard had been on the staff here at UC Santa Cruz, I think probably from about 1968 to about 1971 or 1972. He was the principal author of the campus's second Long Range Development Plan that was published in 1971. Richard had a very interesting background. His architectural training was at the University of Michigan. And I don't remember the exact sequence—he spent some time in the Navy. He went to graduate school in planning at IIT, Illinois Institute of Technology, where Mies Van der Rohe and Ludwig C. Hilberseimer were influential, but he only stayed a semester there because he said, "Once you've been there for one semester you've heard everything they have to say." So he wound up getting a master's degree in planning at MIT with a very influential urban theorist named Kevin Lynch. And Richard had been on the faculties of UC Berkeley and at the University of Minnesota before coming to be the campus planner at UC Santa Cruz.



This would have been in late 1977, I had a call from Richard. He'd set up a small practice in Aptos, and he had just been hired to do a master plan of the Santa Cruz Wharf. Was I interested in coming back to work for him? Well, a chance to go back to Santa Cruz sounded pretty attractive. So I did that. I came back and I worked with Richard on the master plan for the wharf and a lot of other things. Again, it was a generalist practice, mostly small stuff, some residential work, a little bit of fifteen, twenty-unit housing, a lot of minor projects on the campus, which is how I got to know Chuck Kahrs and the campus design and construction staff. Back in those days they did what we continued through my whole time at the campus, which was to work closely with local architects on small projects, or projects of appropriate size.

So working with Richard, I learned a lot about the early history of the campus from his perspective, from an architectural, campus planning perspective, and also had the chance to work on some minor projects around campus. I worked with Richard from 1977 to about 1982 or 1983, with a year [1980] out after I had a call from my thesis advisor from Princeton, who had a small practice in Pennsylvania, in Philadelphia, and he was working on some projects. They were doing a laboratory renovation at the University of Pennsylvania and did I want to go and work for him? So I spent almost a year in Philadelphia working on some projects there, renovating Leidy Lab and so on. But I never really took to it. Philadelphia struck me as being a very hard town to break into. There was working class South Philly and then there was the Main Line, and unless you were there—I didn't have kids in school and all of that sort of stuff. I always felt like an outsider.

So that was more or less the calendar year of 1980. Late in 1980, I heard from Richard that he was busy again. He asked if I would be interested in coming back to California. By that time I'd seen enough of the East Coast urban experience on very little money. So I came back to California and worked for him until work again got slow. I don't remember exactly when that was, but about 1983, I would guess.

Then I went to work for an architect in Carmel named Olof Dahlstrand. I'm trying to remember how I was put in touch with Olof. It might have been through Chuck Kahrs, who was the campus's principal architect, because we did a fair amount of work here and I'd gotten to know him. He'd known Richard for many years, and I had probably gotten to know him in the course of some of the projects we'd worked on in Richard's office. Olof had been hired to design the provost's residence for Porter College, so he needed some help. I think it may have been Chuck who made the connection with Olof. So I worked for him down in Carmel for about two years. Olof was a terrific guy. He's still alive. I still get a Christmas card from him every year. He's a very skillful renderer and watercolor artist. The original Master Plan for the campus was prepared by John Carl Warnecke & Associates, a very prominent San Francisco firm. Warnecke himself just died a month or two ago.

**Reti:** I saw that in the paper. The *Santa Cruz Sentinel* didn't even mention that Warnecke had written the Master Plan for UCSC. I was horrified at that. It was an AP article.<sup>8</sup>

**Zwart:** I was surprised. I was putting together some remarks for my retirement dinner and I was thinking about some of the architects I'd worked with, or knew, or knew of but didn't know. And I couldn't find a date of death for John Carl Warnecke, so I assumed he was still alive. And then a week later I saw his obituary. But Olof had done renderings for [the UCSC Master Plan]. In fact, Olof used to boast that he was the only living artist who had been hung in the National Gallery. Because when Warnecke designed John Kennedy's gravesite in Arlington [National Cemetery], he hired Olof to do the renderings. They actually were on display in the rotunda of the National Gallery for a while, so he was very proud of that. He was a very nice man.

So I worked on a couple of projects at Porter. I did the working drawings for the Porter College provost's house. And we did an expansion of a private day school in Carmel Valley, and a few other odds and ends.

### **Working as a Consultant for UC Santa Cruz**

But 'round about late 1983 or early 1984, Olof said to me that he was planning to close down his office. He was going to retire. He wanted to give me plenty of notice. I assumed I would be heading up to the big city [San Francisco]. So I

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<sup>8</sup> John Carl Warnecke died on April 22, 2010, at age 91. See <http://www.nytimes.com/2010/04/23/arts/design/23warnecke.html>

called Chuck Kahrs to say, "Have you heard about anything up there? Is there anybody I can talk to?" Because by this time I was starting to develop a little bit of an architectural grapevine, which is very helpful. And a day or two later Chuck called back and said, "Well, I actually have a little bit of work that could keep you busy for a while, just until you can figure out what you want to do. I could put you to work on a consulting basis. Then you can figure out where you are going." That was fine with me. That would mean I would give up an hour commute each way down to Carmel every day, because I was living in Santa Cruz the whole time.

**Reti:** I was wondering about that.

**Zwart:** Yes, I commuted. It was a pleasant drive, much less crowded than it seems to be today. So then I came back and did, again, the kind of small projects that the campus relies on local small consultants to work on. We did an improvement and expansion of the control booth in the Theater Arts Complex, in what we now call the Main Stage Theater. We were doing some bathroom renovations in the Cowell residence halls, and I remember going to do a survey of all of those so we could get the documents together. I walked into one of the dorms and somebody had written (it must have been a preceptor for that particular residence hall) a sign saying, "Frank Zwart, a former Cowell RA who is now an architect, will be surveying the bathrooms this afternoon." (laughs)

**Reti:** (laughs)

**Zwart:** I actually took one of those and took it home and put it on the wall next to my Princeton diploma to keep a sense of perspective about things (laughs).

Unfortunately, the ink on that faded over the years so it became completely illegible. So the projects I worked on were really those nuts-and-bolts sorts of things.

That must have been late 1983 or early 1984. There were just the little cats and dogs. I got to know the campus better and heard more stories about things.

In 1985, one of the architects I had been working with was preparing to retire, and things were starting to get busy again. The campus either had secured, or was pretty confident that it would secure, funding for what became Sinsheimer Laboratories. So things were starting to pick up again.

**Reti:** We had an enrollment boost exactly then.<sup>9</sup>

### **Becoming an Associate Architect at UC Santa Cruz**

**Zwart:** That's right. That was all going on. So they actually did a recruitment. All of this time I had been working as a consultant. I was not an employee of the university. So in early 1985 they actually did a recruitment for a position that was then called associate architect. I happened to be in Chuck's office when his boss, a man named Lou Fackler, came in and said that the recruitments had been approved. I went through the interview process.

So in May of 1985, the campus added three new junior architects, associate architects, to the staff: me, and two colleagues, Dave Tanza and Tom Contos.

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<sup>9</sup> "See <http://planning.ucsc.edu/irps/enrollreports.asp> for a table of historical enrollment data at UC Santa Cruz which shows that between fall 1985 and fall 1986 average undergraduate enrollment (over three academic quarters) rose from 6874 students to 7700 students.—Editor.

Dave is still in town working for a construction company, I think it's called Strategic Enterprises. They are affiliated with Bogard Construction. Tom left the campus in the early 1990s and became the campus architect, first at Bloomsburg State College in Pennsylvania, and then probably for well over ten years, close to fifteen years now, he's been the campus architect at Washington and Lee University in Virginia. I see him almost every year at a conference of university architects, so we're still in touch.

That was a period when things were getting busy again. At about that time College Eight was coming to life; Sinsheimer Labs was starting design. I think Baskin Arts was completed right about then. Things were starting to pick up and enrollment was starting to take off. And while there have been a couple of slowdowns since then, we've been pretty much on an upward path ever since then, twenty or twenty-five years.

**Reti:** I came across a booklet by Reyner Banham and Virginia Jansen on the first twenty years of campus architecture at UCSC. And there was an interesting quote in which Reyner Banham described UCSC at that point, I think it was about 1985—<sup>10</sup>

**Zwart:** That sounds about right.

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<sup>10</sup> Reyner Banham and Taina Rikala. *The First 20 Years: Two Decades of Building at UCSC*. Santa Cruz: UC Santa Cruz [1987]. Publication a result of an undergraduate art history seminar, "The History and Implementation of the Santa Cruz Campus Plan," in the winter quarter of 1986 under the direction of Professors Virginia Jansen and Reyner Banham.

**Reti:** The campus was coming out of what he described as a “ten year building famine.” He wrote, “In that long pause, the images of Santa Cruz, social and architectural, became established, and most unavoidably conditioned the attitudes of any sensitive architect who was now commissioned to design a building on campus. The imagery may be resisted or accepted by architects, but no one should ever attempt to sanctify it as ‘the intentions of the founders of UCSC.’ What our present builders have inherited is neither the founding vision, nor some sacred image of a city on a hill that must be preserved at all cost. Rather we are now in a position to resume a process of continual change and development that has been too long interrupted. And the challenge is to resume it with such creative sensitivity as we can muster.” Please respond to that.

**Zwart:** I hadn’t seen that quote. That discussion is worth a lot of thought. I think generally he’s right. I think there was a tendency towards ossification of a vision of the campus. But I’m not sure that it was based on anything that was specifically written in the original Long Range Development Plan. I think it had more to do with the first batch of buildings that came out. I’ve spent a lot of time, particularly in the last few years, going through the 1963 Long Range Development Plan, because we just completed—the last thing I worked on as campus architect was something called the *Physical Design Framework*.

Starting about eight or ten years ago, the [Regents’] Grounds and Buildings Committee started saying to the Office of the President that on the one hand they approve long range development plans for the campus, and on the other hand they approve individual projects, but the Long Range Development Plan is really more like a zoning map than anything else. It’s very abstract. It doesn’t really

give you a sense of the physical conditions of the campus. Although it's based on them, it doesn't convey the physical vision of the campus. Individual projects are just individual projects. The Regents asked, the [Regents'] Grounds and Buildings Committee asked, for an understanding of what bridged the gap between the very general Long Range Development Plan and the very specific individual building designs. Starting in about 2001, the campuses were asked to put together what the Office of the President called a "vision presentation," to fill that gap. We did ours in 2003. At that point it was just a PowerPoint presentation to the Regents. And as it happened, that was just at the same time, it was October of 2003, we were getting ready to kick off work on our most recent Long Range Development Plan update. I'm sure we'll talk about that as we get to it.

As time went on, campuses were updating their vision plans, there was also a lot of talk (and this, I think, grew from the campuses more than it did from the Regents) about how burdensome the project approval process was. Regents' policy was that any project that costs more than ten million dollars needed design approval by the Regents' Grounds and Buildings Committee. Ten million dollars doesn't go very far any more (laughs) with inflation. So working during one of the changes of administration in Oakland at the Office of the President, the Regents and the Office of the President put together a pilot program under which each campus would prepare what was called a *Physical Design Framework*, to bridge that gap.<sup>11</sup> It would be presented to the Regents. When this first started, I thought this was just going to be an update of the original presentation. But this

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<sup>11</sup> The *Physical Design Framework* is available on the website for UC Santa Cruz's Physical Planning & Construction: <http://ppc.ucsc.edu/>



wound up being a written document. And each campus is doing it in quite a different way. This would then be presented to the Regents along with a ten-year capital financial plan. Those things went in parallel. And once those had been accepted by the Regents (I'm not sure that they used the term "approval"), then the campus was eligible to participate in this pilot program where projects of up to sixty million dollars in value would be approved by the chancellor on the campus rather than having to go to Regents' Grounds and Buildings. So really the last thing I worked on, really concentrated on, was updating the *Physical Design Framework*. I worked on it with my colleagues John Barnes and Dean Fitch. We had a lot of good input from the Design Advisory Board.

I think one of the things that everybody recognizes is that this is a very special environment. I had way too little to do with Reyner Banham when he was on the faculty here. He departed shortly after I arrived. And it was a real loss because he was an extremely astute, very well-educated architectural critic. I mean, he was one of the best in the world, with a particular interest in California and issues Californian. Just to have lost him was a real tragedy. But I think his warning is right on the money, because I think there was a tendency to go back to the olden golden days and to say how perfect it was.

But in the course of putting together the *Physical Design Framework* I spent a lot of time reading what was in the 1963 Long Range Development Plan. I actually (oh, this was probably four or five years ago), scanned it, converted it to a workable text file, to a Word document, and went through and highlighted things that they were right on the money about, and highlighted other things that just didn't

happen. It's fascinating, because in some areas they missed by a mile; in others they were enormously prescient.

And one of the things that was so prescient in the plan was that it acknowledged that it had to be done with sufficient flexibility as to allow response to changing circumstances. And it really has done that. I think part of what makes that first Long Range Development Plan so fantastic, and what we tried to convey and restate and articulate in the *Physical Design Framework*, is that the approach to designing buildings here has to start from this incredible, incredible site. It doesn't start from a grid, like Manhattan. It doesn't start with a sense of a particular kind of architecture, like Mr. Jefferson's lawn at the University of Virginia. Every site is unique. Every site is specific. And whatever we do in the way of buildings here has to respond to the power of that landscape. One of the great enjoyments of being campus architect here was the opportunity to walk around the campus with someone who had never been here before, and to re-experience it. It was too easy to take the setting here for granted. But to bring a newcomer to the campus, and to have them see it, reminds you of what a remarkable, extraordinary place it is. I really worked very hard as campus architect, and I think my colleagues did too, and I think the design architects worked very hard to maintain that spirit, without being tied to the specifics of the 1963 Long Range Development Plan.

Banham is exactly right, and I suspect that what you just read to me was a response—not just to what was going on architecturally, because there wasn't a lot going on architecturally when he was here—and probably as much if not more to what was going on either socially or administratively about the good old

days. And there are aspects of that that you just can't get back to, because it's not 1965 any more, or 1963.

But one of the things that we tried to write as we talked about the framework is, no matter what directions that the campus academic program takes, this campus landscape is not terribly changeable. It is what it is. And it will allow any of a number of directions with the academic program, but the physical expression of that academic program needs to somehow respond to the physical setting of the site. It's much more long lasting. I remind students when I talk to them that when I graduated from Cowell College in 1971 the pocket calculator hadn't been invented yet. The Communications Building used to be where the mainframes [computers] were housed, downstairs in rooms and rooms and rooms, and racks and racks and racks. So it's a whole different world.

People also forget—you know there was, particularly in the flush of publicity about the campus in the early days—there were some pretty appalling articles out there in the national press about the hippie-dippy nature of Santa Cruz. But what those completely overlooked was, first of all, this was always a liberal arts institution. And the liberal arts are not just humanities, literature and art. The liberal arts include scientific disciplines and mathematics. So, as my old freshman year roommate likes to remind me, there was some pretty serious science going on here in the early days, and students who wanted to go on and get PhD's in the sciences did it. They went on and got medical degrees. Science has always been extremely strong at UC Santa Cruz. It was overlooked or eclipsed by the countercultural publicity. I mean, that was going on too. You can't deny it. But that wasn't the whole story of UC Santa Cruz.

**Reti:** But you think that the liberal arts *included* the sciences?

**Zwart:** That's part of a well-rounded education.

**Reti:** Oh, I see.

**Zwart:** I mean, it's among them.

The other thing that people forget is that the campus, if you go back and look at the construction documents in UCSC's Physical Planning & Construction department for what is now called the Jack Baskin Engineering Building but for many years was called the Applied Sciences Building, the original documents say "Engineering Unit 1," because the original plan *was* to have an engineering school. They'd hired a dean of engineering, Francis Clauser, who was a distinguished aeronautical engineer from Cal Tech, and they were starting a process of putting a program in place, when there was a national glut of engineers.<sup>12</sup> This was probably in the late 1960s or early 1970s, probably the early 1970s. Boeing in Seattle was laying off engineers left, right, and center, and the Regents decided that they didn't need another engineering school in the University of California. They killed the plans for the engineering program. And in later years I believe that Dean McHenry said that was something he should have fought much harder for, to get the engineering school here. So the campus was always intended to have an engineering school.

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<sup>12</sup> For more on Francis Clauser and the aborted early plan for UCSC's engineering school see Randall Jarrell, ed. *Kenneth V. Thimann: Early UCSC History and the Founding of Crown College* (UCSC Library Regional History Project, 1997); and Randall Jarrell, ed. *Robert L. Sinsheimer, UC Santa Cruz during a Critical Decade of Change, 1977-1987* (UCSC Library Regional History Project, 1996). These and other oral histories are available at <http://library.ucsc.edu/regional-history-project>.

If you look at the original Long Range Development Plan from 1963, I think there were programs that today we would find very unusual, just foreign to our notion of Santa Cruz. I think the fact that the campus stalled programmatically as well as architecturally is what tended to get people ossified. The original Long Range Development Plan really spread development over almost two thousand acres of the campus. I don't know whether that would have been sustainable from an operational point of view. It might have taken too long to get from one place to another.

But the notion that this site is special and that our designs need to respond to it I think is very important. If you look at the 1963 Long Range Development Plan, it suggested an architectural palette that you can see in the original lab buildings, which would have been Thimann Labs which started its life as Natural Sciences 1 and Natural Sciences 2—an articulated base, concrete walls and a copper roof. Well, economic reality blew that out of the water. The price of copper and the price of concrete for certain buildings became way too high. So we've had to expand our material palette. I think if you had told me when I started my time on the staff here, when I began work as campus architect in 1988, that we would happily have buildings with metal siding I would have looked at you like you were crazy. But the fact is that some of our most successful and handsome buildings on campus (I'm thinking of the Humanities Building; I'm thinking of the Bookstore), actually do have metal siding because it's done in such a way that works on each specific site. I think that if you had told me that we would have a building with an entirely glazed curtain wall front I would have said, "That's not what we do at Santa Cruz." But that's the south facade of Engineering Unit 2,

and it's done with such sensitivity and such responsiveness. I remember bringing my father up to the campus as that building was nearing completion. We turned the corner and he got his first look at it, and he just said, "Wow!" He just stopped right there and said, "What a beautiful building." I knew the architect who designed it pretty well. Dennis McFadden and I were in architectural school at Princeton. I called Dennis to tell him that and he was very touched.

So I think Banham is right. There are a lot of expectations about—I must say I shared them early on. But I think part of our work over the last fifteen or twenty years has been to break those, to keep the principles, but to find different ways to do it depending on the particular circumstances we face.

Among the many good friends I've developed in the national community of architects is Jon Hlafter, who is now the University Architect Emeritus at Princeton. And he talks about how Princeton (which certainly has a much longer history than UC Santa Cruz), marks the architectural history of the American republic by looking at its buildings. You can see by visiting the Princeton campus what people thought about places and campuses and architecture by the buildings that it built at a particular period of time. I think the same thing is true about Santa Cruz. I think the Engineering Building in Santa Cruz would have been inconceivable because the technology didn't exist in the mid-1960s. But as an expression of its time, an expression of its purpose, and as an expression of its particular site, I think it's a masterpiece. So I think Banham was right: How do you be true to this place without becoming hidebound? That's been one of the challenges that the campus has faced. Universities are by their nature extremely

conservative institutions. And I don't think that's a bad thing. It tends to be a good thing.

**Reti:** Conservative?

**Zwart:** It takes a long time to make anything happen, or to get things to change. I'm not sure that's necessarily a bad thing, because once something comes out it's pretty well considered, at least we hope so.

### **Bay Region Style**

**Reti:** I did a little bit of reading about the history of architecture. There's something I came across called a Bay Region Style.

**Zwart:** Yes.

**Reti:** Would you say that UCSC falls into that?

**Zwart:** Certainly, absolutely. A number of the architects, Joe Esherick, who was involved in the original master planning, who designed Stevenson College, and whose successor firm, EHDD Architecture, probably has designed more buildings on campus than any other single firm, including the building that we're in—Esherick certainly came out of that. You really need to talk to an architectural historian to define this more accurately or appropriately than I can, but as I understand it, on the one hand the Bay Region is very much a modern tradition. It shares with Modernism a complete break with the historicism of Classical architecture, of the Renaissance or Classical precedents, or of Gothic precedents. To that degree it is a piece of Modernism. On the other hand, it does

not then say that every building needs to be built as a machine. It tends to be built more on the Romantic side of the Modern movement, and to take clues that are regional. By regional, I suspect it means both related to the specific physical setting of a building or where it's being designed, as well as architectural tradition. So, for example, look at the design of Cowell College, the double-sloped roofs and the highly articulated structural system. If you look up at the eaves of Cowell College, and I recommend that everybody do that, they will see (and it often takes a while for people to notice this), major beams colored in an earthy red, a dark red. And then what's supporting the roof, at least at the overhanging of the eaves, are alternating boards of black and green. It's very much influenced by Asian architecture, Oriental architecture, by that articulation of pieces. Greene and Greene in my hometown of Pasadena did that same sort of thing, the way things get put together. It's not an Asian style or an Oriental style, but it's influenced by that. Even some of [Frank Lloyd] Wright's work came from that.

Ernie Kump, who was the original consulting architect to the campus, and who designed the Central Services Building (Hahn Student Services) and Crown College, came out of the Bay Region tradition. Warren Callister who designed the East Fieldhouse, again, very sensitive to the physical setting of the campus. So yes, it's very much an outgrowth of the Bay Tradition. The difference—What's difficult at Santa Cruz is that when I hear “the Bay Area Tradition,” it tends to be more residential and small commercial structures, and not the size of buildings that you typically think of as being at a major research university. So how those



principles get translated into a larger scale is one of the challenges that the Santa Cruz campus has always faced.

**Reti:** UC Berkeley has some buildings that are Bay Region, but they are smaller buildings.

**Zwart:** Yes. But I certainly think the residential colleges were very much influenced by the Bay Region tradition.

**Reti:** The emphasis on landscape is part of it.

**Zwart:** On landscape, and fitting, and on the relationship between inside and outside. That inside-outside relationship was also expressed in many of the Modernist structures in Southern California. I mean, the Richard Neutras, the Rudolph Schindlers—there was a lot of inside. The Quincy Joneses. Again, those tend to be more relying on a machine aesthetic than a crafty woods aesthetic. That's how I might distinguish between Los Angeles Modernism and Bay Region. But many of the same principles about understanding the site inform both of those sets of architects.

### **Learning the Job**

**Reti:** Today is July 15, 2010, and I am with Frank Zwart for our second interview. We are at the Science & Engineering Library. Let's start. So when you took this position, you were certainly aware of your predecessors, John Carl Warnecke, Thomas Church, and Jack Wagstaff. Did you see yourself as building on their work or carving out your own niche?

**Zwart:** I'm not sure that anybody goes off to architecture school and studies to become a campus architect. It was really a series of happy circumstances through which I wound up in that position. So it wasn't as if I had set my mind on becoming UCSC's campus architect. I'd actually worked in private practice in a number of places—Southern California, here in Aptos, back East in Philadelphia for a year. When I came to work on the campus as a project manager, it was just a next step in a career ladder. I didn't have any plans to stay here permanently. But as things were getting busy in the mid-1980s, as enrollment was going up, there were three openings for staff architects. Associate architect is what the position was called.

So in May 1985, I was hired along with two other young architects into that position. And I worked with an architect named Chuck Kahrs. Chuck had been here, I think since about 1967 or 1968. And he was the architect who hired me, although I worked closely with his boss, Lou Fackler, who was an engineer who headed all of what was then called Campus Facilities. And of course Vice Chancellor Wendell Brase, who was Vice Chancellor of Finance, Planning and Administration—he was also very much involved in planning and project development.

I was hired in May, and Chuck announced his retirement at the end of that calendar year, 1985. In the very early days of the campus there were two distinct offices: Physical Planning & Construction, that oversaw what wound up becoming my responsibilities, physical planning, building design, architectural design, and construction administration; and Physical Plant, which was the operational side of things. In other words, we built it and Physical Plant operated

it. As growth slowed down in the 1970s, those two offices were merged into a single unit called Campus Facilities, and there was a long period of very little growth. I'll probably come back and talk about that a little bit later, some more. That office was then headed by Lou Fackler, who had been the campus engineer. During those years not a lot was going on. In fact, one of those years that I was working in private practice in Carmel, I think the biggest project for the entire year on the campus was a new provost's house for Porter College, which was at that time probably a \$200,000 project.

**Reti:** My God.

**Zwart:** So things were very, very slow.

In May 1985 things were getting busy again. Enrollment was coming up. State capital funding was starting to become available again. Funding for Sinsheimer Labs had been secured and planning was getting underway. So the campus had some reason to be optimistic about the future. That's why they hired three architects. Business was expected to be good enough to support those positions.

So I was hired in May of 1985; Chuck retired at the end of that calendar year, in December of 1985. The campus at that point decided that things were going to get busy enough that it would make sense to recreate the Office of Physical Planning & Construction as an entity distinct from Physical Plant. So it did that and it started a recruitment for a new campus architect. And hired an architect who had been working at the University of Alaska in Juneau, Jack Wolever. He arrived—I think it was sometime early in 1986. He'd been a campus architect for a number of years. He'd also been in private practice. If I remember correctly, he

had worked at the Washington D.C. office of John Carl Warnecke & Associates. Warnecke's office, of course, had done the original master plan for the campus.

Jack worked very hard. Jack was charged with re-establishing this office. He wasn't here very long. He was probably here for less than three years. But he made some very important decisions and set some very important directions for the campus. In large part, he got the Office of Physical Planning & Construction and its eager young architects like me to see ourselves as a real project management unit. We had design interests; we had design perspectives, but our job was really to manage these projects from the beginning to the end. Jack put in place a structure that I maintained to do just that—to have the technical skills that a campus needs in order to design and build itself.

Jack announced his decision to return to Alaska, I think it was probably in early 1988, and the campus did a recruitment to replace him. By that time the job had become Campus Architect and Assistant Vice Chancellor for Physical Planning & Construction. So I had, what, three years of experience on the campus, probably even a little bit less, and I was hesitant to apply, simply because I just thought I hadn't come far enough up a career ladder. But a lot of people, including Jack, encouraged me to submit an application. And so I did. And it was the result of that recruitment that I became the campus architect in August of 1988.

When I worked for Richard Peterson's office in Aptos we had done a lot of work here on campus. When I worked down in Carmel at Olof Dahlstrand's office, we had done the Porter College Provost's House that I mentioned a few minutes

ago. So I was getting to know the campus, getting to know about its history, but I'd worked on campus for just over three years when I became campus architect. But I had a lot of encouragement. A number of people suggested that I submit an application, and I did.

My concerns were less living up to the vision of Jack Wagstaff and Tommy Church, and John Carl Warnecke and Ernest Kump, the original consulting architect for the campus, and more just learning the nature of the job, understanding the University of California, how project development works, and moving forward a lot of projects.

I'm trying to think of what was underway at that time. In August of 1988, as an associate architect (and then I think we [Dave Tanza, Tom Contos, and I] were reclassified to senior architect somewhere along the way there), I was the project manager for: the Student Center, which is now known as the Academic Resource Center (that actually got built); a neighboring project called the University Club, that wasn't built; for the expansion of the East Fieldhouse Facilities, which built a swimming pool, the locker room and office building there in 1987-88. And I had just been named project manager on a couple of projects that were just getting started—the Science Library building and Colleges Nine and Ten.

In the early 1980s about all that was going on were little maintenance projects, or, as I said, the Porter College Provost's House. [A few years later], those projects I mentioned a few minutes ago were just the projects that I was managing. In addition, College Eight was underway and under construction. Sinsheimer Labs was in design and was under construction when I became campus architect.

Activity here had just exploded. So my real focus those first couple of years was just learning the nature of the job, learning how the University of California works, learning how the state finances worked. Just understanding what was going on, in a context of good design, of course.

**Reti:** Can you think of particular challenges that working in the UC system at that time held?

**Zwart:** Well, one of the biggest challenges, both on the campus and within the university, was that long period of very slow growth from the mid-seventies to the mid-eighties. Just as a simple example: in the early nineties, there were some operating budget challenges that the system faced, and they put in place an early retirement program called the VERIP program, the Voluntary Early Retirement Incentive Program. Three staff members from Physical Planning & Construction who had been on the staff for a long time took advantage of it. I think this was sometime in 1991, so I'd been campus architect probably less than three years. At a retirement function for the three of them, one of the other two architects who had been hired with me in May of 1985 tapped me on the shoulder and said, "You do realize that with those three leaving, you, Tom, and I have seniority in the department." We had been on staff for less than six years.

What had happened was that the University of California really geared up and did a lot of enormous and very interesting work in the 1960s to respond to the baby boom. That's what created the Santa Cruz and Irvine and San Diego campuses. Other campuses were growing like crazy as well. In the mid-seventies, enrollment was leveling off. State funding wasn't as easy to get. The

nature of offices like Physical Planning & Construction is that they are generally funded out of the project budgets as well [as construction of the buildings]. So if there are no projects moving forward, the offices have no means of support and they dwindle to very little. That had certainly happened on the Santa Cruz campus. It had also happened in the Office of the President. What had happened, clearly, was that there had been a cohort of professionals, architects, engineers, construction inspectors, support staff, who were busy building the campus in the sixties and early seventies. As things slowed down, the staffing got reduced. People went off and found other jobs; people retired. So when we arrived there hadn't been a generational succession plan in place. There were a group of people who'd been around in the office for fifteen or twenty or twenty-five years, and then there were the newcomers. There was a whole mid-level of experienced staff that just wasn't there. It had never been built; it had never been created.

I think that was true both on the campus and at the Office of the President. For example, one of the things that I actually learned in fairly recent years is that up in the Office of the President in the sixties and early seventies there were several campus planners who worked with campuses to encourage planning cooperation and collaboration between the campuses and their local community. That function entirely disappeared in the Office of the President. So, just like on the campuses, our dealings with the Office of the President tended to be with people who had been around for a long time and really understood the system well, but they had not brought people in to succeed them, simply because there wasn't any way to support it. So the Office of the President was also in the

process of rebuilding itself, because the construction boom or explosion that we experienced in Santa Cruz starting in the mid-eighties was occurring throughout the system. I think we were all in that together. The other campuses were facing similar challenges. We were learning our way together.

When I started, for example, the University had one form of construction contract for major projects. Over time, during my twenty-year career—and this was reflective, really, of the changes throughout the construction industry as well—a variety of contracting mechanisms were put in place. So now, late in my career, my successors have several different ways to choose from as they design and build a project. It was really an evolutionary change to fit the standards of the time, fit the requirements of the time in the way construction was being done. All of that was an evolving process.

So, as I said before, when I took the job, it was a matter of learning what we were all about, what we were doing, and getting things built and moving forward. And of course doing it in the spirit of the Santa Cruz campus, and understanding what all that meant.

Also underway at the time that I became campus architect was work on the Long Range Development Plan, what became the 1988 Long Range Development Plan. If I remember correctly, that was actually presented to and approved by the Regents in May of 1989. But I think that's going to be the topic of another day's conversation.

You know, that experience I recounted a few minutes ago at the retirement celebration for those three longtime employees, learning that people with less



than six years of experience on campus were now running things, really affected the way that we thought about the structure of the office from then on. I made a conscious effort, and the office made a conscious effort, to make sure that we had skilled people at all levels of professional development so that we wouldn't face a circumstance again where we would have to build it up from the ground. And we were actually able to do that through some fairly difficult and challenging times.

**Reti:** That's remarkable. It's a remarkable situation to find yourself in.

**Zwart:** Yes, it really brought me up short when they said that. So we made that a conscious effort, and I think we did a pretty good job at it.

### **Building a New Science Library**

**Reti:** So the Science Library. I know the Science Library had been located in this rather small concrete structure down the hill from where we are sitting. I can remember that from when I was a student. It was the Lick Observatory library's storage area?<sup>13</sup>

**Zwart:** Well, as I understand it, it was never intended to be a major library. Its seed actually was the Lick Observatory astronomical library collections that then (and this is something for the librarians in the bunch to tell the history of, because I'm not sure that I've ever heard it), actually became the seed of the

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<sup>13</sup> For another detailed account of the planning and construction of the UCSC Science Library see: Irene Reti, ed. *Allan J. Dyson: Managing the UCSC Library, 1979-2003* (UCSC Library Regional History Project, 2006) at <http://library.ucsc.edu/reg-hist/dyson>.

Science Library. So a separate collection started there, part of the University Library, but distinct from the collections at McHenry Library. And I did learn, as I was working as project manager of the Science Library, that the campus had made a decision that it was going to try very hard to avoid what other university campuses did, like UC Berkeley, of having a series of departmental libraries. There would be a University Library, and a Science Library, given, as I understand it, given the geographical concentration of what started off as the natural sciences and is now science and engineering functions, it made sense to have their collections there. But they weren't going to spin off an anthropology library and a music library and an economics library. There would be central libraries and things would be highly centralized.

Certainly on the campus, certainly within the University of California, but I think this was true throughout both public and private universities in the United States, the postwar research boom meant that the scientific disciplines were growing as fast or even faster than universities as a whole. They were a real driver for university growth in the sixties and seventies.

I don't know how many years it took for the library collections of the campus to outgrow the little, I want to say two-story, but it was really two story and a mezzanine, building. It's a building that I think currently houses the dean of what's now called the Division of Physical & Biological Sciences. But it was very limiting. It didn't even have restrooms in it. It was connected by a tunnel to Natural Sciences 2. It was actually built along with Natural Sciences 2. But it wasn't a tunnel that could be used easily because that would have created security problems for the library. I think there was no running water in the

building. There were no restrooms in the building. The collections were growing. I think there were also some seismic concerns with the building as well, because I remember after we completed the new Science Library and library materials were moved out of the old building, we had a project to bring that building up to seismic code as well. So all of that was going on.

A lot of this was occurring at the time I was hired, before I became campus architect. The campus has always done a good job, and one of the things that I think the University of California has done a fairly good job with—they are very disciplined about putting together a capital program for state funding. They are always looking five to ten years down the road. It's not just a matter of what do we need to build now, and projects come up one at a time. There's always some kind of foresight and forethought. It responds to circumstances.

Despite the fact that there had been very slow growth in enrollment, there had been steady growth in the scientific disciplines. So, as I understand it, the justification for Sinsheimer Labs was based on that, on growth that had already occurred. It was not justified on the basis that—well, more students are coming, we need to build this building. This was really a catch-up project. And, as part of that, to understand where it would be best sited, the campus worked on what we've come to call an area plan for what's known as Science Hill—just looking at, okay, we're working on Natural Sciences 3. How are we going to think about Natural Sciences 4, 5, and on down the line. The architects who designed Natural Sciences 3 were hired to do that. It helped site the building.

But in those days, the rules of the capital program in the Office of the President were such that a renovation or an addition project had priority over what the University calls a “new start,” a brand-new building. So as the state-funded capital program took shape for the Santa Cruz campus, the original plans for the Science Library were for an addition to the existing building. I wasn’t directly involved in this but I assume that what happened is that the library staff worked with the capital planning staff to look at anticipated campus growth, anticipate what library growth would follow along or would accompany that, and tried to understand how big a new building would be built. That became the building block that was used for the Science Hill area plan. ED2 International was the name of the architectural firm that did the Science Hill area plan and designed Sinsheimer Labs (Natural Sciences 3), so they had a series of building blocks to plan for. I think the standard building block for laboratories were buildings about the same size as Sinsheimer Labs, which is 80,000 gross square feet.

And I don’t remember what the building block would have been for the Science Library. The final outcome, I think the Science Library is about 75,000 gross square feet. Well, when ED2 did its area plan for Science Hill, it showed that big bulk of a building attached by a little tail or umbilical to the original Science Library.

**Reti:** (laughs)

**Zwart:** (laughs) If you looked at the drawings that were done, or they built a model, it looked like a dog with an enormously swollen tail. And what’s very interesting is, I do remember going, when Sinsheimer Labs was in design, or

actually even before it started design, the campus was putting in place (and Lou Fackler and Wendell Brase were instrumental in putting this process into place, but Lou really drove it), an exercise called “value engineering” that would bring together a lot of people involved in the project—the architectural team, the building committee, members of the campus Physical Planning & Construction and Physical Plant staff, plus people from the Office of the President and even the state, to review the evolving design. It was done in a very disciplined way, and maybe we can talk about it in a little more detail later. They met two or three times at key points in the development of the project to get all of the involved parties and decision makers in the same room together for a day or two. The theory was, and it actually worked out this way, that decisions could be made promptly, and the project could stay on course, and programs and budgets could be reconciled and the like.

So, at the first one of these sessions (and I suspect it was the first value engineering session that the campus had ever done, Lou Fackler put it together for Sinsheimer Labs), ED2 International presented the master plan and its site recommendations for what wound up being the site for Sinsheimer Labs. But those drawings and that model showed this dog with the swollen tail, the Science Library with a big addition. It just looked completely nuts. And we were very fortunate, among the people in attendance at the project was a woman who was then the director of capital planning for the state-funded capital program, in the Office of the President. Her name was Trudy Heinecke. She saw that and she said, “That makes no sense at all.” Again, I assume there were conversations between her and the campus. I wasn’t part of them. But apparently she made the

decision that we could break the Science Library project away and make it a freestanding building and still keep our place in the state-funded queue. In other words, we wouldn't be penalized for making it a freestanding building. She saw right away that it made no sense at all. And Trudy actually played a key role in the development of the Science Library itself, which I'll probably get to in a few minutes.

That was a very positive outcome of the value engineering process for Sinsheimer Labs. I don't remember exactly how many years after Sinsheimer Labs the Science Library came along. It was probably one or two years. It opened in 1991. Sinsheimer Labs opened just around the time of the Loma Prieta earthquake, in October of 1989. So I suspect it was probably a two-year lag. I do remember (and I'll probably talk about this more a little bit later), that while the Science Library was in design, Sinsheimer Labs was under construction. Because some of the things that came out of the Science Library design affected the design of Sinsheimer.

So the campus was actually delighted with the outcome, because I don't think anybody cherished the idea of trying to make a workable library as a huge addition to a building that was really not built for that purpose at all. So this was a very good outcome. I'm trying to remember what the original programmed elements were for the old Science Library. I know when we did the renovation and seismic upgrade we put a couple of classrooms in the basement, and the lower floor and the upper floor was built as offices. I think they were originally for UCO Lick Observatory and then when the Interdisciplinary Sciences Building

was completed the Lick offices moved there and the dean of Natural Sciences, or now Physical & Biological Sciences, moved into the old Science Library building.

So the state capital program was marching along. The University Librarian at the time was Lan Dyson. He had been very active in campus planning issues. He sat on the Campus Physical Planning committee. And somewhere along the line, I think I must have done something or said something or been in a meeting with him, and he was impressed. My understanding is that he asked that I be assigned as project manager to the Science Library project. So once things got started again I assumed that responsibility. And that was going to be a real challenge because it was by far the biggest project I would have been asked to manage. But one of the real advantages that we had—the campus had already selected an architect for the Science Library.

Backing up a little bit, in those years of very slow growth the campus did explore the possibility of expanding the old Science Library. They'd actually hired an architect to do some studies. That was Esherick, Homsey, Dodge and Davis of San Francisco. They had done some preliminary designs of a building that would have been much smaller than what ultimately got built. They had actually done some designs, and the campus had made some initial efforts at fundraising. I had the impression that they weren't terribly successful, because I never heard about any pot of gold that was sitting there. But as a result, the campus already had an architect on board, and it was an architect that had considerable experience with libraries. They, in fact, had been selected and were working on a major library for the UC San Francisco campus, for the Parnassus Heights campus. So they were a

good selection, a good team. And if remember correctly, our Science Library wound up being a year or two behind the UC San Francisco library in the development process, and really, benefited a lot from it.

So we didn't need to go through an architect selection process. We had an experienced architect and a team of engineers ready to get going. The other great advantage was EHDD itself had done a lot of work on campus. Joe Esherick himself had been the architect for Stevenson College. Chuck Davis, who was the principal in charge of the Science Library, had worked on that as a young architect. So they probably had the longest history with the campus of any architect out there. I'm always grateful for the experience that I had working with Chuck and EHDD because they really understood the campus and did a very, very good job. That was clearly part of my educational process.

**Reti:** What were some of the ways in which understanding the campus was beneficial?

**Zwart:** Well, I think the idea of making a building whose physical appearance fits in with the surroundings, that it's not a "look at me" building—that very much came out of Joe Esherick, the founding principal of that firm. [He] had [that approach to] all of his designs. Sort of fitting a particular context. And that was always at the front of Chuck's mind as well. He also had a lot of University of California experience. It's now the case that EHDD has worked on all ten UC campuses. So they really understood the system. And it was really helpful for a rookie like me to be working with somebody who had been through the process before. They learned a little bit from me, but I learned an awful lot from them.



Typically, on a state-funded project, which the Science Library was, funding for design becomes available at the beginning of a fiscal year, on July 1. So that drives the calendar of project development. So as we were getting closer to the year in which design work would start on this, Lan Dyson, the librarian, and Vice Chancellor Wendell Brase started getting ready for this, and started lining up what we would need to do—value engineering sessions, and schedules and so on. I remember pulling out a plan (and this was really very early in the process), pulling out a site plan of the area around the site and saying okay, here's the size of the building that the campus wants (because there had been some projections done), and then I did what architects often do early on just to get a sense of the scale. If I remember correctly, it was about 75,000 gross square feet. So I said to myself, okay, if it's a three-story building, that's 25,000 square feet a floor, and that's a block of a certain dimension on the ground. If it's four stories high, it's a block of a slightly smaller dimension. I sketched out some of those sizes on this plane in very dumb, rectangular form, no real thought to program, just to get a sense of the size of the size of it. And I met with Lan and Wendell on the site.

We were standing up on the platform behind Natural Sciences 2. The site was essentially undeveloped and in the distance there was a parking lot. I unrolled this drawing that I had prepared, and I'd probably outlined the potential building footprint in red. It was a real interesting lesson in understanding scale. Because when people said "Science Library" on the campus, given the small little jewel box that the Science Library was in at that point, people thought "little building." I put the site plan on the ground and we looked over the site plan and

we looked at the site. I said, "Okay, this building is likely to go from where we're standing here down to whatever the point was in the parking lot down there." And to all three of us it was just a shock, just to understand how big this building was going to be. Everybody sort of said, "Holy Cow." But that was it. That's what it took. People got over that first bit of sticker shock and EHDD set off in design.

Now, in putting together the design team, EHDD brought along a set of engineers: a structural engineer, mechanical, and electrical engineers that they were working with at UC San Francisco. They were all first-rate outfits. Rutherford and Chekene were the structural engineers. Guttman MacRitchie were the mechanical engineers and electrical engineers. And Lan Dyson wanted to hire a library consultant, which is not unusual. So he made a series of phone calls. And, if I remember his recounting of the story correctly, he made, I don't know, half a dozen calls, I don't remember the exact count. But in three or four or five of them, the same name kept coming up. This was a woman named Nancy McAdams. Nancy McAdams had been a librarian at the University of Texas, and had left that job and was consulting nationally as a librarian for colleges and universities. Her specialty was academic libraries. And she, as I understand it, was trained both as an architect and as a librarian. So she understood the problems that both the architect and the librarians faced. And I have to say, she was one of the best consultants of any sort that we ever worked with. She was just terrific. If the librarians were getting out of hand and were asking for things that weren't realistic she could say something to them that would settle them

down. If the architects were doing something that simply wasn't going to work, she could sit down and talk with them as well.

She was also one of those consultants who didn't come in with a single solution. If an issue came up—for example this was an issue in the design of the Science Library—as you leave the building, should the Circulation Desk be to your left or to your right? It sounds like a simple question and I think that the library staff thought it should be to the right because in the United States we drive on the right, so that's where people naturally go to. So working with Nancy, and working with the architects, they developed what was called the British scheme, which was Circulation on the left, and the American scheme, which had it on the right. But Nancy was able to say, on any of these issues—the librarians came up with an idea and particularly if they came up with a solution to a problem, Nancy could say, "Okay, that's a problem. They solved it that way here, here and here. Another way you might think about it is a solution like this. They did it there, there, and there. Here are the advantages. Here are the disadvantages." She was extraordinarily good at that and just a real pleasure to work with.

As we were waiting for the money to come in, I worked with the library staff, Bob White of the library staff, to work on a building program that would describe what we needed. It was a fairly modest document in comparison with programs that we developed later on. And since we had quite a while to work on it, it went through quite a number of revisions. I used to liken it to spaghetti sauce. It simmered long enough that it really got rich and tasty.

**Reti:** The Italian in you. (laughs)

**Zwart:** The extraneous stuff simmered out of it and it wound up being a good document that the architects could work from.

**Reti:** I'm sorry, I'm not quite clear on what a building program is.

**Zwart:** A building program is a description, at various levels of detail, of what goes into a building. So, for example, if we were building a laboratory building—Let's imagine that we would have eight labs that would have one kind of research, five labs that would have another kind of research, and two labs that would have a third kind of research. Those would each be described in some kind of detail. What kinds of services would be needed? Are there going to be fume hoods needed? How many? Hot and cold running water. Electrical requirements. Now, data requirements. And the like. For a library, a program tends not to be as technically oriented as it would be for a laboratory building, but how many group study rooms will we have? What's the size of the collection? How many square feet is that going to take? Each function of the building and the space necessary for it, and the interrelationships among them is described in some level of detail. Now, some programs go as far down as actually drawing a typical floor plan and sketching out where things should go in the room. The nature of a library didn't make that necessary for this and we didn't want to get to that level of specificity.

Essentially it becomes the working document. There's always a significant amount of user input in putting a program together. If we have a specialty consultant they're typically involved as well. Then that becomes the document that the architect designs to. Programming can be very important, because if it

turns out that you think you need more space than your budget is going to support, even before you get into design you start setting priorities about what's going to happen, what's going to be important. If you can create spaces that serve more than one function, you can talk about it in the program.

Typically what happens is once the program is done, that becomes the guideline for the architect and the architectural team to develop the building design to. And then you can compare the evolving design against the program, to determine whether the programmatic requirements are met.

**Reti:** Thank you.

**Zwart:** We had worked on the program and that became the basis for EHDD's design. So work was moving forward, developing the program, putting together the value engineering session. Typically we would usually start a value engineering session even before design started, to talk about the site, to talk about approaches to the site, to look at the program, look at the budget, see if they seemed compatible, see if we could build the program for the funds that were available, and do it in a workshop format, with (as I said a few minutes ago), all of the various participants in the project engaged in it—the users, and the architects and the architects' consultants, people from the campus, and often from the Office of the President, and so on. So we were making plans for that.

We also know that the Santa Cruz campus is on a very, at least for Central California, unique geological formation known as karst.<sup>14</sup> Karst is a marble or limestone geological subgrade that tends to fracturing. As water infiltrates through the soil above, it goes into the cracks in the marble or the limestone base, creates carbonic acid and makes big voids. We always do extensive geotechnical investigations in parts of the campus that we know are karst-rich, and the Science Library site was certainly one of those.

So I think this occurred probably in the spring of the year in which design was to start, and I think it occurred before our first value engineering session. We engaged the services of a geotechnical engineer who had done a lot of work on campus and knew the geology well. They came up and did some test borings. The testing mechanism is to take a drill rig—one of our campus clients described it as looking like something out of *Mad Max*. For typical soil they have a six-inch [diameter] auger and they just advance it. They drill straight down into the earth and record the density and the type of soil at different levels along the way. It's a six-inch diameter auger and it goes down—depending—the geotechnical engineer uses his or her professional judgment, knowing the soils, as to whether to advance it thirty feet or fifty feet or a hundred feet. It really depends on what they find and what they know about the area.

The geotechnical engineer was Steve Raas. Steve was also an alumnus, a Stevenson College alumnus. He and I, as it turned out, graduated the same year.

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<sup>14</sup> For more on the karst topography of the campus see Tonya Haff, Martha Brown, and Brett Tyler, *Natural History of the UC Santa Cruz Campus* (Second Edition: Environmental Studies Department, UCSC, 2008).

I knew that they'd been doing their borings and we were getting ready to move forward into design. So I called him one day and I said, "Steve, have you got the boring results back from the Science Library site?" He said, "Oh, yes. I'm just reviewing the boring logs right now. They're open on my desk in front of me." I said, "Well, what's the news?" He said, "Frank, we have an opportunity for excellence."

**Reti:** (laughs)

**Zwart:** And I knew I was about to hear some bad news. They had discovered some significant areas of weak soil on the site. It didn't come as a terrible surprise to them because they knew the campus. But we knew that we were going to have to do something special with the foundations of the building. Now, fortunately, as we had been arguing for the budget of the project we knew that there was a likelihood of running into bad soils here. This is an area of the campus that's very unpredictable. We had budgeted accordingly, and actually the Office of the President had supported our request for additional funds because we thought we would have to do something special with the foundation.

**Reti:** Did you have to do something similar with Sinsheimer Labs?

**Zwart:** Oh, yes. They actually had to revise the design. The design that was selected for Sinsheimer was a different solution than here. But yes, that was part of what was on our mind.

You can't really go and drill every six feet on a six by six foot grid. That just becomes prohibitively expensive. Typically what the geotechnical engineers do is

get a general sense of what's going on, the building design evolves, and then if they need to, they get more information specifically at the areas where the building is going to sit. And then they work closely with the project's structural engineer to determine the best kind of foundation system for the building.

If you were to meet Steve Raas on a social occasion it's not likely that you would right away say, "Oh, this guy is a geotechnical engineer." He's a very lively and engaging guy. In fact, his firm's motto was, "Dirt is our life."

**Reti:** (laughs)

**Zwart:** Because of the soils problem we actually made a space for him on the first value engineering session. Part of the protocol for value engineering sessions is to have each of the specialists—the architect, the structural engineer, the mechanical engineer—talk about the problems that his or her specific discipline is going to face and ways that they might solve it. For example, a structural engineer early at the first value engineering session might say, "Well, our fundamental choice is do we do a concrete building or a steel building, and we're thinking about concrete over steel for the following reasons. And within concrete there are two or three or four structural systems that make sense for these kinds of buildings. Here are the pros and cons of each of those." As part of that first day's workshop we made space for Steve Raas, the geotechnical engineer, to come and talk about the soil conditions. And Steve was fascinating because he gets people passionate about dirt. He has an enthusiasm about what he does. He was able to explain it extremely clearly. People really understood.



I mentioned earlier the role that Trudy Heinecke, the head of the state-funded capital program at the Office of the President played. Her first key contribution was spinning off the building [away from the original Science Library] and keeping the funding for it in the same place in the queue. Here's where she made a very particular second contribution. The geotechnical engineers were suggesting some additional and pretty comprehensive geotechnical investigation to understand better the zone of bad soils. Trudy Heinecke was at this first workshop. Steve Raas did a very good job of explaining what was going on. The recommendation that he and his consulting engineer and geologist made was to dig a deep trench from north to south through the site and to map the area of weak soils, and to advance another series of borings. They had come up with a cost estimate for doing that additional work. I want to say it was eighty or a hundred thousand dollars. Trudy made available some funding from the Office of the President to do those studies so that the design of the project wouldn't be delayed, and we could move forward promptly.

And so in fact they did that. They brought out a backhoe and cut this deep, deep trench. I think it was anywhere from eight to twelve or fifteen feet deep. It probably ran a hundred to a hundred and fifty feet deep more or less north-south through the site. They shored it as they needed to, and put geologists there to map the walls of the site. They were able to determine that the area of weak soils was a zone ten to fifteen feet wide running east-west through the site. Everywhere else there was competent soil. So the recommendation to the structural engineer was simply to bridge that area, make the building's foundation serve as a bridge over that ten to twelve to fifteen foot wide area of

weak soil. The geotechnical engineers felt they were able to map it pretty accurately with what they saw. And then everywhere else the building could be founded on what are called standard spread footings. It's sort of an inverted T, where the width of the concrete bottom or concrete foot depends on the loads that are being imposed on it from above. And that is something that is worked out between the geotechnical engineer and the structural engineer. That's typically a very economical way to build.

So we were really very fortunate in that we had budgeted adequately for bad soils conditions, and although we found them, where we found them was relatively limited and the structural engineer was able to handle it with only a fairly modest amount of structural gymnastics. Everywhere else the building could be quite conventional. And because we weren't paying the full premium for the foundations, that money became available to do other things within the building that really wound up enriching it.

**Reti:** Because you originally thought you might to have to do a special foundation for the whole building?

**Zwart:** Again, I don't remember the exact figures, but let's imagine that we wound up budgeting, I don't know, ten dollars a square foot for foundations and it wound up that we only had to spend eight. That meant that two dollars a square foot could enrich other parts of the budget, make up for something where we had underestimated what it was going to cost, or do something that we couldn't otherwise afford. So that was something that really worked out.

**Reti:** Now, you're not talking about interior design. You're talking about the structure.

**Zwart:** No, but in fact, in this particular circumstance one of the reasons that this building was able— That was a matter of luck. The other thing that I think about with this building, that I might talk about in a few minutes, were some of the design choices that the architects made that saved money. What they were able to do was to take the savings that they had found, both from simplifying the roof structure— In some of the early designs the architects were looking at some pretty elaborately shaped roofs to go along with the copper roofs on Natural Sciences 2 or on Thimann Labs. But given the configuration of the building to fit in the site, those would have been very elaborate, very costly. And they made the decision, and I think it was absolutely the right one, to go with a very simple flat roof. And again, the money that they saved by doing a very simple roof form, they were able to enrich— Those two pots of money combined to allow them and the campus to afford a nicer level of finishes within the building. So in fact what people see, in both cases things that you would hardly see—certainly the footings you wouldn't see at all, and the roof you would barely see—by keeping those other two things simple, they were able to put the money where it really showed and enriched the user's experience of the building, and that very much was the case.

We went through the design process. The architects looked at three-story, four-story, five-story configurations. One of the things that we learned from Nancy McAdams is that librarians are very much like retailers. The closer to a flat building that they get the happier they are. If the architects are showing four

stories, Nancy McAdams would say, “Why can’t you do it in three?” If the architects were showing three stories, Nancy McAdams would say, “Could you do it in two?” Because the idea, I think, particularly in an open stack library (it probably would be a very different story were we talking about a closed stack library), is the flatter a building footprint is, the fewer stories there are, the more opportunities for adjacency there are without having to go into a stair tower or move up and down. Just like with retail, over time both retailers and librarians face changing needs, changing evolution. It may be that a particular collection grows faster than the rest, so they need to be able to reconfigure within the building. Whether you are exposing a university’s library collection to its users, or trying to sell something, having a flat footprint gives the retailer or the librarian more opportunities to lay that out.

So ultimately the design that was selected, given that we sit on a sloped site here, the design that was selected was a three-story configuration with the entrance on the middle story. So the main story would be primarily reference collections, the periodicals reading room, and what became the Cowell Room, the data access room. And clearly that’s become more and more important. Because in the late 1980s they were just starting to think about wiring buildings for computing. So the configuration was again fitting the site—main floor entrance, one floor down, one floor up. That way people were encouraged to use stairs. That increased interaction within the building. One of the reasons the architects made the main stairs so grand and so large was to encourage people to go out and use it and experience the trees and so on. My guess is that the stairway just gets a whole lot more usage than the elevators in this building.

**Reti:** Oh, absolutely. I worked at the Reference Desk here for a while and I definitely saw that.

**Zwart:** EHDD's project architect was a young architect named Todd Sklar. This was his first major project as well. He was very, very good. He was a very responsive guy, a very thoughtful and thorough guy. And EHDD came up with this plan that sort of zigs and zags the building. If you look at the floor plan, it's really got a serrated exterior edge. And at each of those corners, they built these very large pseudo bay windows that allow a terrific experience of the outside. They put the reading spaces at the perimeter of the building and the collections on the inside, so that the people can move to the glass where they want to be. All in all, it wound up becoming one of most people's favorite buildings on campus. And it certainly is one of mine.

We had good bid results. The bids came in a little bit over budget. But again, we were able to do some cost-cutting as the building was under construction. The construction firm was a firm from Foster City, I think, S. J. Amoroso. They had not done any projects on the Santa Cruz campus. They actually, by coincidence, were building the UC San Francisco library, again with the same architectural and engineering team. The story goes that Sal Amoroso was an Italian immigrant who started the firm in his basement with a couple of saw horses and a saw. I never met him, and I regret that very much, but even in his eighties and nineties he was out on the job site checking things out. When Amoroso built this building, his son, Dave Amoroso, was the head of the company. He wanted to come down. He wasn't going to be able to come to the first kick-off meeting. He wanted to come and meet the people involved. So he came and met me. By this

time I had become campus architect, and reassigned the Science Library to an architect named Dave Tanza. Dave was one of the three architects who had been hired in May of 1985.

So Dave came to meet us and we drove up to the site. As we were driving up to site, Dave said, "So I hear you guys aren't the easiest people in the world to deal with." I said, "Gee, Dave, that's funny. We hear the same thing about you." And that was actually the crassest conversation we had. Dave and his firm took great pride in doing things well. Once he understood that we and the architects, EHDD, were interested in the same things they were, the working relationship was really, really terrific. I would often joke that at the end of the project, at the dedication, we saw members of our project management and inspection staff sitting with the contractors' staff at the building dedication, which we thought was a really, really good sign.

So it was a project where a lot of things went right and the campus has a building that has served it well for now getting close to twenty years. Next May [2011] it will be twenty years. That's mind-boggling. I'm hoping it's proving to be as flexible and usable as we set out to design it to be.

**Reti:** I hear we are about to get money for new LED lighting in this building.

**Zwart:** Oh, in the building? I hadn't heard that. That will be interesting.

**Reti:** Yes.

**Zwart:** I know at McHenry Library, before they did the big renovation, they replaced the lighting there at least twice for energy savings. And they are probably doing a third generation.

**Reti:** Yes, they got some special funding that the campus is providing and they are doing some tests right here, right now, in the Science Library.

**Zwart:** On the inside? Oh, that's interesting. I know Physical Plant has been very aggressive about that, and they've been terrific at it. They've been very successful.

**Reti:** I hope we're not going to lose those artichoke lights.

**Zwart:** Oh, no. Those are great. I know Todd Sklar, EHDD's project manager, was very proud of finding those. I think they were perfect in the entryway. I know that Lan Dyson was very happy. He said that atriums are the bane of a librarian's existence, because big double-height spaces with skylights tend to leak, and librarians don't like water anywhere near their collections. So he thought one of EHDD's brilliant moves was to put that at the perimeter of the building so there weren't any books nearby.

The artichoke lights were one of Todd's real finds. The other real find that he was very proud of were the two lights that mark the entranceways on the outside of the building, the big, industrial-looking fixtures out there. We went to a meeting in EHDD's office and Todd had a grand unveiling. He had them undercover. They actually were bridge beacon lights that typically may be modified as red for

FAA regulations or the like. These are really built for massive scale and they work great as marking the bridge that moves into the building.

Just a couple of the design features that are so interesting—if you come to the main entrance of the building and look carefully at it you'll see that the stairways up from the west, or the main entranceway from Natural Sciences 2, the south side of the building, are not actually sitting on grade. They are actually elevated as bridges. The architects did that intentionally to minimize the impact on the roots of the redwood trees around the building.

One other thing really helped out. Typically the campus has not been in a position to hire interior design services to finish out the inside of a building. Chuck Davis and Todd Sklar encouraged us to get some professional interior design advice, because that really is a specialty. Architects like to think they can do that, but smart architects know they can't do it as well as a trained interior designer. Lan Dyson had some discretionary funds available which he used to hire the services of an interior designer. And she worked closely with us, with the campus, with library staff, and with the architects to select the furniture for the building. I remember going up (her office was in the same building as EHDD's in San Francisco) and looking at some of these and making the choices. I'm very pleased to see how well those things have worked over the years.

**Reti:** And it still looks new.

**Zwart:** It still looks very good, yes. I think that was one of the wisest investments Lan ever made, because it really added to the configuration and the feeling of the building. It was really good.



**Reti:** Now, on the area plan— Did the campus always intend for this to be Science Hill?

**Zwart:** When I was an undergraduate in the late sixties and early seventies, we never really called it Science Hill. It was just up there to the Natural Sciences area. I don't know when the term "Science Hill" ever came along, or now Science and Engineering Hill. You have to climb a couple of pretty good hills to get here so it's not surprising it was called that. I just don't know what the source of that term was. But I think if you were to go back and look at the original 1963 Long Range Development Plan, there is a very tiny inset map that describes the disciplines and that plan for 27,500 students. And I think if you look closely enough you'll see that this was always going to be where the sciences are. And that's not uncommon. The general configuration of the campus was always large-scale, specialized facilities in the center of the campus, in what we call the core, surrounded by the residential colleges, which are smaller scale and less specialized. So, unlike UC San Diego, which set out to put its laboratory facilities right in colleges, we were always going to condense them here. And that makes sense, because laboratory facilities need a lot of plumbing, they need a lot of mechanical services and the like, and to consolidate that in one area really is a cost savings, is the most economical way to do it. I think that always was the idea.

I've never really dug into the archives to see if, before growth stopped in the mid-seventies, detailed plans were developed to determine where, for example, what we now call the Baskin Engineering Building was sited. I don't know what that was based on. But again, the campus had faced a period of relatively slow

growth. What was then called Applied Sciences, now the Baskin Engineering Building, was probably built in 1973, 1975, something like that. Then the campus didn't build another science building until Sinsheimer Labs. Design on that started in 1985, and construction probably started in late 1987 or early 1988. It was a long gap. So I think the idea of actually taking a look at this area and understanding where Natural Sciences 3, 4, and 5, and 6 were going to go, was an important thing. And that plan has actually morphed over time. We've done several different versions of it. I think we've done it quite successfully.

#### **OTHER EARLY ARCHITECTURAL PROJECTS AT UC SANTA CRUZ**

**Reti:** Let's backtrack a little bit to some of your earlier projects, when you first came on as associate architect. Let's talk about the Cowell College Faculty office addition.

#### **Cowell College Office Facility**

**Zwart:** The campus was growing only slightly, as I said earlier, from the mid-seventies to the mid-eighties. It wasn't growing at a rate rapid enough to create new colleges. But there were additional faculty being hired. I think the campus came to realize, I don't know exactly when, certainly before I arrived, that the vision of a campus of residential colleges of four hundred to seven hundred students was not going to be economically viable within the University's budgetary constraints, particularly in the aftermath of Proposition 13 and the willingness of the public and the state to send money to the University of California. The colleges were adding students beyond what they were originally contemplated to have, and as a result they were adding faculty. So we needed

space for the faculty. I don't think the original plans for the campus envisioned additions to individual colleges, but as a matter of fact, that actually is what occurred.

Also in those days, there were certain chunks of money for capital improvements that were coming from the Office of the President to the campuses. I don't remember the exact amounts, but they tended to be enough to build a small building that would hold on the order of twelve to sixteen faculty offices and a conference room and ancillary facilities, about that size. So the campus did look for opportunities to add faculty office space at the existing residential colleges. Cowell was one. I think we probably did two or three of them at Stevenson. I know we added some space, I think in two separate projects, at Crown. I know we added some at Merrill. I know we did some at Kresge. And in each of those cases, the idea was to mimic the architecture of the existing college.

In some areas that was easier to accomplish than in others. So, for example, at Stevenson, given that Stevenson, to start with, was all exterior stucco with relatively modest metal-framed windows, I suspect that you would really need to have a pretty trained eye to go in there and determine what was original and what was added later on.

Cowell wasn't quite so easy because that was all cast-in-place concrete. The entire [original buildings of] Cowell College has exterior walls of cast-in-place concrete, which is typically a fairly expensive way to build, and the budgets for these little faculty additions wasn't going to support that. So what we actually wound up doing was to build a wood frame building, clad it in white stucco to

match at least the color and the general configuration of the college, and then the campus was willing to spend the money to get the flat clay tile roof at Cowell that matched the tiles that were used elsewhere.

The architect for that project was a man named Herb Kahn, Herbert Kahn. Herb had an interesting history. He'd been the principal of a large architectural firm in Santa Monica. His partner, Ray Kappe, had been dean of the school of architecture at Cal Poly, Pomona, and then went on to found the SCI-Arc, Southern California Institute of Architecture. Herb came up to Santa Cruz with the intention of opening a branch of the Santa Monica firm, but there just wasn't enough work here to support that large of an operation. And Herb liked it well enough that he stayed and set up a one-man shop, one-man office. He did a number of small projects for us over the years. It turned out that he and Chuck Kahrs, the architect who had originally hired me, had been licensed as architects in the same year, and because they must assign architectural license numbers alphabetically within a year, Herb Kahn and Chuck Kahrs had license numbers one digit apart. So that was kind of a funny circumstance.

**Reti:** (chuckles)

**Zwart:** Herb, I think in a very clever way, designed the building, used window openings similar to those in the existing Cowell structure but matched the roof pitch and used the clay tile roof and did a very skillful insertion of that into the fabric of Cowell, and did it very successfully. But over time we ran out of space to add offices in that spirit, and so things like the Humanities and Social Science

buildings came along later to again augment spaces in the colleges, but that's a different story for a different day, I think.

**Reti:** I can't tell, having visited Cowell, which part is new.

**Zwart:** Oh, if you went around and looked at the walls and looked at the windows—if you do that you'd spot which one that is. The other thing that will clue you is if you look up at the rafters. I don't know if you've ever looked up at the rafters at Cowell, that overhang its office building? It's typically dark red beams supporting them and then alternating black and green striped stained wood. So that's another giveaway, if you want to see what was added.

### **Sinsheimer Labs**

**Reti:** Let's talk some more about Sinsheimer Labs.

**Zwart:** Sinsheimer wasn't actually one of my projects. There were three of us hired in May of 1985. Dave Tanza, Tom Contos, and I were all hired out of the same recruiting pool. Dave, as I mentioned earlier, had worked on a number of small projects, and then succeeded me as the project manager for the Science Library. Tom was the project manager for Sinsheimer Labs. Tom actually left the campus in the early nineties. I see him every year at a conference of university architects. He's the campus architect for Washington and Lee University in Virginia, a very different setting.

That project was in design about one to two years before the Science Library. It was the first big project, and certainly the first big laboratory project, that the campus had done in well over ten years. It was a project that, as I said a little

earlier, Lou Fackler and Wendell Brase were both very much involved in, setting up the discipline of the value engineering process. And again, they set up those series of meetings.

But one of Vice Chancellor Brase's great interests in doing laboratories and so on, was to create opportunities for interactive space. There was a faculty member in the management or the business school at MIT named Tom Allen, who has written a lot about interaction in organizational settings and how buildings could encourage that. I don't know whether Brase was a grad student or was an undergraduate at MIT, but that was very much in the mind frame of the campus, passed along to the architects, to ED2 International, for Sinsheimer Labs. So as that project was designed, there was very much looking for an opportunity for chance interactions between the users of the building, primarily faculty members, but also graduate students and undergraduate students and the like.

So if you go into Sinsheimer, you'll notice that it's organized into two concrete building blocks joined by a steel frame building block in the middle. That middle has an atrium going up through four stories in the building. The idea is that that would be a place for interaction. It's not just a matter of having that space there. It's also a matter of what functions surround that space to attract people into it for interaction. For example, if you walk up and down that stairway through the atrium, you'll see that there are faculty offices that ring it; one floor has the biology departmental offices; and then on the east side of the building there are a couple of conference areas and informal study areas, double height, where people can go in and meet and have informal meetings and the like. So actually it

wound up being remarkably successful. And if you go in, you get a sense of life in that building. That really is a heart for the building.

I became campus architect as that building was under construction. I remember visiting it a few times when it was being built. Not surprisingly, to get everything done in that atrium space, there was a huge scaffolding that was built there. I remember my first visit to the building (it was still a construction site), after the scaffolding had been disassembled and dismantled—walking into the space and seeing the way that the stairway was configured, seeing the way that the offices and the spaces were around it, just having a sense that it really was going to be, when the building was occupied, really teeming with activity. And I think that pretty well describes it.

Interestingly enough, many years later I actually saw it happen. This was sometime during MRC Greenwood's tenure as chancellor. My office got a call from the chancellor's office. A professional colleague of hers was going to be visiting, a biologist from France. He heads an institute somewhere in Burgundy focused on human experience, taste and so on. I've always wanted to visit there. I thought that would be an interesting field trip, to go see the interest of taste. So I was asked to give a campus tour to this professor (I don't remember his name. I only remember he was a Frenchman with a very Greek-sounding name) and his wife, and show them around the campus. So I was doing that. And not surprisingly, the tour was focused on the science area.

I took him and his wife into Sinsheimer Labs and we were standing in the atrium. A biology professor that I know, Barry Bowman, came by, and I said

hello, and I made some introductions and explained what I was doing. And he said to the scientist, "Would you like to see my lab?" So the scientist said (he was a good, polite Frenchman), "Certainly." So we went up to his lab, and Barry was showing us around and explaining the nature of the research that he was doing. And the French scientist said, "Oh, that's very interesting." (Again, I don't remember what the nature of the research was.) But as he heard Barry describe what his focus was he said, "Maybe you can help me with a problem I've been having. I've been trying to find a chemical substance that would do [and he described what he wanted to do]—. Have you ever come across a problem like that?" Barry said, "Well, yes. And here's what we've done about it, and here are some things we've tried." So the idea of this interactive space is that chance encounters lead to some surprising and unexpected results. I saw it happen in front of my own eyes. I've had the opportunity to tell that story several times since. But it actually did happen. If it hadn't been for that atrium space and that chance encounter with Barry Brown, that little— Whether it ever led to any discovery or not, I'll never know. But it was interesting to see it happen.

So that's something that we've worked very hard on in subsequent laboratory buildings. And you'll see similar efforts at the Earth & Marine Sciences Building, which started off as Natural Sciences 4, certainly the Physical Sciences building, which started its life as Natural Sciences 5. Again, all of them have that intention of interaction at the heart of their physical organization.

The other reason that Sinsheimer Labs is noteworthy is that it was my first exposure to construction litigation. It's not surprising that design and construction law is a very litigious area, because there is so much money



involved. And on that project, in fact, the contractor and the subcontractor sued the university, claiming that the university delayed them in its performance and that we owed them additional money. So the first time I'd ever set foot in a courtroom in my life was a courtroom over in Redwood City, which is where all of these legal actions were filed, for contractual reasons. There were lots of attorneys there, and a few contractors, and me. And the last thing that the judge wanted to do was to hear a construction case, because they're very detailed and very technically oriented. He wanted to get it out of his courtroom as quickly as possible. So he recommended strongly (and one of things I've learned in observing this is that when judges suggest, attorneys often listen) that it go to mediation. And in fact it did go into mediation. That was my first exposure to construction mediation as well, but that's a story for another day. It was interesting. I've worked with a series of attorneys from the Office of General Counsel, and there is a subsection there of attorneys who specialize in construction law, and they are actually very, very good. I've made some very good friends in that way.

**Reti:** Okay. So the Student Center.

### **The Student Center**

**Zwart:** Well, the first three projects I was handed when I formally was hired—I had been working on some projects on a consulting basis—but when I joined the staff in May of 1985—were the Student Center, a University Club that never got built, and the P.E. facilities. When we did the architect selection for the P.E. facilities, that was being managed by Teresa Yuen, one of the senior architects on

staff when I joined. I remember that I was sick the day of the [architect] interview[s], so I missed all of that and was disappointed.

But the Student Center architect selection I was very much involved in. Jack Wolever was the campus architect at the time and he was very much involved in it as well. And University practice, policy, is for major capital projects (and that limit has grown over the years, back in those days it was probably any project worth more than \$200,000. I think it just got changed shortly before I retired from about \$400,000 to \$750,000), but in any major capital project we are required to go through a competitive selection process for the design professionals. And typically the process is (we've refined it over the years) we place an advertisement; we also notify architectural firms that we think would be interested in a project, and good for a project, about it, and we invite statements of qualifications from interested architects. Normally we will get anywhere from twenty to fifty of those, depending on the size of the project. In slow economic times we get more proposals than in active economic times, not surprisingly.

And then, the University in its Facilities Manual has a two-step process, where there is a screening committee that does a first review of all of those proposals and selects a certain number of them for consideration by a selection committee. Typically, on the selection committee we include representatives of the user group. So for the Student Center architect selection committee there were representatives of the Division of Student Affairs, and then, of course, some students, not surprisingly, because this was going to be a student-funded project. I don't remember a lot of particulars. I remember that we invited six firms to interview. They included Simon Martin-Vegue Winkelstein Morris [SMWM]

Architects. Cathy Simon, working for another firm, Marquis Associates, had worked on the Baskin Visual Arts Complex. And that firm [SMWM] was actually the design architect for College Eight. I don't remember whether that started before or after the Student Center. I don't remember all six firms that we interviewed.

But the firm that was selected, Fernau and Hartman, was the last firm that was interviewed. Richard Fernau was an alumnus, graduated with the pioneer class in 1969, and then went on to study architecture at Berkeley, and had been a faculty member at Berkeley. His partner, Laura Hartman, was also a Berkeley graduate, and they had a small firm. They had done a few small projects, a renovation of what was called Ramona's Café in the College of Environmental Design Building, Wurster Hall, at Berkeley. They had done some residences and so on. So this was a big jump up for them. But they did a very, very good interview. They really connected. I do remember that it was the last firm that we interviewed. We did six interviews in a day. I think the selection committee was getting pretty tired by the end of the day and was dreading a sixth interview. But there was something about the way that Richard and Laura conducted that interview that was a really lively and enjoyable interview. So they were selected to do the project. And that wound up being the beginning of a very fruitful working relationship. They were good to work with. It was a project that had been underbudgeted to start with. They worked very hard to do three or four different designs for the building. I'd worked with the building committee on putting together a program. And as I recall, Fernau and Hartman came up with three potential design directions, and they worked with the building committee

to evaluate which one would work best with them, and wound up with what's there today—a U-shaped large building and then a smaller, separate, freestanding building that I think for the last eight or ten or twelve years has been the media center where all the student media is housed. But originally, its program was as a multipurpose room for meetings and workshops and the like. And one of the reasons it was spun off as a separate building was that the users wanted access to it even after hours. So it wound up being a freestanding building.

Fernau and Hartman quite consciously, as they talked about the evolving design they made reference—they are a firm that is not afraid to make historical references in their buildings, and they were looking back to some of those grand Canadian railroad hotels, with a rural, rustic vernacular. So you'll see, for example, the pieces of redwood trunk that are used as columns in the building, and sloped roofs and the like, a view out over the meadow. Richard was also quite conscious of making an outdoor room, so the main part of the building is a U-shaped building around a courtyard that is like an outdoor room, with a view out over of the Great Meadow and out to Monterey Bay beyond. Also, the passageway as you enter through the building on the lower floor is an evocation of the entrance to Cowell College, where you move from the shade of the forest out to the expansive meadow view. So I think they did a very skillful job of it.

I remember that it was completed right around the time of the Loma Prieta Earthquake, in the fall of 1989.<sup>15</sup> Again, that was one of my early exposures to construction litigation as well. We had a circumstance shortly after the Loma Prieta Earthquake. The building was designed with slate roof, and pieces of slate started falling off the building. Our first thought was that it was earthquake damage. But it continued to happen even well after the earthquake. Tom Contos may have taken over for me on that as project manager once I became campus architect. I know Tom Contos was very much involved once we got into investigating the roof failure. We picked up some of these pieces of slate that were falling around the courtyard, and we thought that was dangerous. So we told the contractor to do something to fix it, and it became one of the classic circumstances in contractor litigation, where the contractor said, "Well, I just gave you what the architect told me to give you," and the architect said, "Well, the contractor did something wrong." We were concerned that it was a safety hazard and Student Affairs came up with the money to take the entire roof off and replace it, although they replaced it with asphalt shingles. And then we wound up suing everybody. We sued the contractor and the roofing contractor and the architect, and went through that whole process.

In the course of that investigation we tested the slate roof. The slate had been imported from China. And it turned out that the slate that was on the roof did

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<sup>15</sup> On October 17, 1989 at 5:05 pm a 6.9 earthquake centered approximately nine miles from Santa Cruz in the Santa Cruz Mountains hit Santa Cruz County and the neighboring San Francisco Bay Area, causing extensive damage. See Irene Reti, *The Loma Prieta Earthquake: A UCSC Student Oral History Documentary Project* (UCSC Library, Regional History Project 2006) for much more documentation of the earthquake. <http://library.ucsc.edu/reg-hist/quake>

not even meet the minimum building code standards for strength. So we actually went through unsuccessful mediation. The contractor was unwilling to give us anything other than nickels on the dollar to replace it. They said it wasn't their fault. The architects actually settled out, put some money into a settlement pot. It's very rare for construction cases to go to a trial, but this went to a full jury trial and we actually got almost everything that we asked for. The jury found the contractor at fault for not meeting the requirements, so we got everything we asked for. The difficulty was that by the time we finished paying the attorneys—I think we demanded \$140,000 or \$150,000 and I think we got \$145,000. And we spent about \$80,000 in legal costs to get to that point. But every now and then you just had to draw the line somewhere and say you were willing to fight for it and take your chances. So we did. It was a very interesting experience, but not one that I would ever want to go through again.

The really interesting thing about it, though, was that when the campus did put together the Design Advisory Board (and I know that's something on our topics to talk about over the next few [interviews]) we did ask Richard Fernau if he would serve as a design professional member. And he's done that now for close to fifteen years and it's been a delight working with him. He cares very much about the campus, and he's very committed to it. He's been a terrific colleague over those years. It's been a real pleasure. I would have preferred not to have sued them back then and I'm glad we all got beyond it, because the campus has benefited from Richard's participation on the Design Advisory Board in lots and lots of ways.

**Reti:** You know, the general perception I hear about that building is that it's a beautiful building but it's in the wrong place. It was supposed to be a Student Center but it's off in the meadow.

**Zwart:** There were several other places that were considered. Steinhart Way as it winds its way from the bookstore complex at Hagar Drive, past McHenry Library, and then up the hill up to the Science Library, makes about, more or less a ninety degree turn right in front of McHenry Library. And one of the other sites that was looked at was across from McHenry Library there. But the difficulty with that site is that while there was a lot of pedestrian traffic, to get anything else to the building—and since there were going to be public functions it would have been tucked in—that didn't seem to be a very good site. Several other sites were looked at.

I think one of the reasons that that site was selected is that if you look at a campus map, it actually is fairly central to the campus. And, in fact, I do remember that there were discussions, in fact in siting all student facilities—that the funding for the Student Center was provided by students, and there was a student referendum for the students to assess themselves a fee. I think this was probably about the time I was hired. I think this was probably in the spring of 1985. It was a package. I don't remember what the exact amount of the fee that was going to be. It passed and the proceeds from that referendum funded both the Student Center and the expansion of the East Fieldhouse facilities—the swimming pool and so forth. There had been a feeling in the development of the campus that the student-oriented facilities like the Bookstore, like the East Fieldhouse, were biased towards the eastern colleges, and that was only going to

be augmented by expanding the East Fieldhouse facilities, which was a sensible move. I mean, there was stuff there and it was a good place to build on it. So the notion was to try and rebalance that by finding other sites that would favor, or at least move things a little bit back towards the western colleges. I know that was part of the thinking in putting it where it wound up. But I think you're right. I think experience showed that because students were used to going to the Bookstore complex for lots of things, and were used to going to Hahn Student Services for registrar activities, or housing and financial activities, they never found themselves going to the Student Center. When they had the opportunity to move student functions into the old bookstore, with the completion of the new bookstore, they did that. And the Student Center actually then became the Academic Resource Center or ARCenter, as its known today.

Now, one of the things that I am convinced would make a huge change to the accessibility to the Student Center building and to its use (and it's one of the things that we've explored several times, in fact there was a referendum to try and get student funding to build these, but it failed), if you look at a campus map, the Student Center is more or less due west of the OPERS East Fieldhouse complex. And if you're to look at a campus map with contours on it, it would be possible to build a wheelchair-accessible route from the entrance level of the East Fieldhouse complex, that upper level where the parking is—if you were to span one of the branches of Jordan Gulch with a bridge that would have at its eastern end Hagar Drive and the East Fieldhouse—at its western end there's a peninsula of parking that comes below Hahn Student Services. So if you were to go from the East Fieldhouse to the southern end of that peninsula, and then develop a



second bridge with the Hahn Student Services parking at its eastern end and its western end at the Student Center, that could all be essentially at grade. And so if we were actually to be able to build bridges—pedestrian bridges would do and vehicular bridges would also do—where you could walk from the East Fieldhouse across those bridges to the Student Center, right away I think that would put the Student Center on an east-west campus pedestrian route, and the potential for that building would change enormously.

**Reti:** Oh, absolutely.

**Zwart:** That's shown up in a series of campus plans ever since then, and it would be terrific to think that someday those would be built. Because then the campus could take full advantage of what I think has always been an underutilized resource.

**Reti:** And that would also tie into the way that the McHenry Library is now expanding.

**Zwart:** Absolutely. To get from McHenry Library to the Student Center, you have to go down and then back up. But it's a much more gentle walk than to go from the East Fieldhouse. I mean, there's just no way physically to walk down those ravines and then back up. Those are just too steep. The third bridge, again, would be nice, and it could be made wheelchair accessible, would be to bridge that very gentle ravine or valley that separates McHenry Library from the Student Center. But if you could actually build that bridge, then you could have a pretty wonderful set of student facilities all the way around. If you were to imagine moving in a clockwise direction from McHenry Library as expanded,

along Steinhart to the Bookstore complex, down Hagar Drive. That gives you one entrance into Cowell College and the east colleges. Down Hagar Drive to OPERS, across those new bridges to the Student Center, and then back up a third bridge to McHenry, you could have a very pleasant and very mutually complementary group of activities right around there. But again, it would take the money to build that infrastructure.

The Student Center really is an underutilized resource. One of the things I really enjoy every time I drive up Hagar Drive, is that Hagar Drive points you straight at the Student Center. It really cuts a very handsome profile against the forest edge behind it.

**Reti:** I love taking my lunches out there. It's one of my favorite buildings.

**Zwart:** Yes, it's very nice. And the other thing that was a surprise on that building is that we (and Richard and Laura have to take a lot of credit for this) fought an unrealistically low budget all the way along, and we actually had to get it augmented a couple of times. They were willing to do things that they weren't happy about in order to bring it in on budget. When we actually bid it, we actually bid it for budget, but that was only because the low bid came in about fifteen percent below the next one. We were very worried that that was an unrealistically low bid. But other than the problems that we faced with the roof, it got put together well, the contractor did a good job, and it's actually weathered all of those years much better than I expected it to. I was there just a couple of months ago taking some photographs, and it's actually still quite a handsome, quite a pleasant building.

## The Physical Education Facility

**Reti:** Do you have time to talk about the PE facility?

**Zwart:** Sure. There are a couple of stories to tell about that, and that's got a soils story to tell as well. Those architects I mentioned a little while ago were Brocchini Associates from San Francisco. Ron Brocchini had worked with Wong & Brocchini. They had had a role in the development of Merrill College. But that was a project that was a challenging one. It had some very strict technical requirements, and they worked out a master plan for the East Fieldhouse that was quite different than what wound up being built. The reason was that when the geotechnical engineer went out and did the investigation of where they wanted to put the swimming pool, the borings hit what the geotechnical engineer described as "toothpaste." He said, "You know, if you want to keep this master plan, you're going to have to spend a fortune on foundations." So Brocchini and company went back and reconfigured the whole thing. And the geotechnical engineer had some clues about what might work. They took that into consideration and reconfigured the plan to put things about where they are today. But even then, the swimming pool is an Olympic-sized swimming pool, so it's 51 meters in the east-west direction, and one of those meters is taken up by a moving bulkhead, so that they can run 50-meter races the long way, by twenty-five yards in the short dimension. And so in that [pool] area, there was concern about the geotechnical stability of the site. There was an architect for the entire complex, Wong & Brocchini. And Milt Johnson was the name of an architect who specialized in swimming pool facilities. So he was a consultant to Wong & Brocchini for the swimming pool piece of that, and then he had a structural

engineer who was consulting with him on the design of the swimming pool. And because of the uncertainty over the soils and the nature of the soils, there was thought that they were going to have to actually drive piles underneath the swimming pool to support it. In favorable geological or geotechnical soil settings for swimming pools, the structure is actually earth-supported. The weight of the water in the swimming pool is typically less than the weight of the soil that's removed, so the surrounding soil can easily support the swimming pool and the water that it contains. Here there was concern that because of the weak soils, the "toothpaste," as the construction engineer called it, wouldn't hold up the swimming pool. One of the structural systems that was being investigated was to drive pile, or to drill concrete pile, and build a concrete framework to hold up the swimming pool, which would have been a pretty expensive proposition. So the pool structural engineer laid out a grid of supporting pilings, and of course they were closer together at the deep end than they were at the shallow end, because that would be a heavier weight to hold up. And the geotechnical engineer went out and drilled at every one of those locations to see what the geotechnical circumstances were, because he just didn't want to take any chances.

And this is a story I often tell about the geologic unpredictability of the campus. So in that area of fifty-one meters long by twenty-five yards wide, and I don't remember exactly how many borings there were, sixty or eighty of them, they hit marble or limestone. In some areas of the pool "footprint" they didn't hit it until they had gone eighty feet down; in some areas they hit it within five feet of the surface. So it was a highly irregular profile underneath the soil. Again, this is a six-inch auger going down, and typically if they are just boring into good, old-

fashioned dirt, it's just like boring into wood with an auger, spoils come out.

That's what the drill does. It moves the spoils out. So if you're drilling down into the earth, as it drills, you're getting resistance (that's the earth that you're drilling out of the way), and then dirt comes piling up out of the top, conveyed up by the spiral mechanism of the drill bit. Well, as the geotechnical engineer described it to me, the drill bit was facing resistance. They couldn't just push it down. In some of the toothpaste areas, they hit a pocket of soft soil and were able to push the drill bit down twenty-five feet before they hit competent soil again. Here they couldn't do that. There was resistance on the bottom. But no spoils were coming up. And he couldn't figure it out. As he explained it to me, "You know, when you've been in this business for a while, little bells go off in your head and you learn that you have to pay attention to them, because if you don't you're going to get in trouble later. So here, when we had that auger hitting resistance but no soil coming up, the bells were going off. I had to know more about what was going on."

So he made arrangements to get a video camera dropped down one of these borings. And so, there's a company that normally has more to do with well drilling than with geotechnical investigation, but there's a company that had a television camera that was mounted at the end of a six-inch cylinder that fit this six-inch hole perfectly. It took a week or two to line them up on the calendar, to make arrangements to have them come, and by that time they'd already filled in all those original borings.

So they brought the drill rig back out and they set up and drilled a hole ten feet away from this hole where they'd hit this funny circumstance. And it didn't

happen again. So they set up ten feet on the other side of the hole, and again it didn't happen. Then they set up two feet away from the original hole, and then that circumstance happened: Resistance, but no spoils. So they pulled the drill bit up and they dropped the camera down. I've seen the videotape of it. I have no idea what ever became of it. But it was interesting, because as it started through the first five and ten feet of the soil—it was a fisheye lens so you could actually see all the way around this lens, and then you could also look down—and looking down or straight ahead as you saw it on the TV camera, was just black, the void that was below it. But you could see around it the scores of the auger as it went down through the soil. But as it was lowered further and further down on this cable, you could see it moving into a field of rocks, not as big as boulders, but it was a rocky field. And you would see every now and then it would dislodge a rock that would go dropping into the pit. And pretty soon you would realize that the television camera was being surrounded by this rubble that was the size of softballs or baseballs or golf balls. And what had been happening was that because the void was completely full of this rubble, it was presenting resistance to the auger. But instead of bringing rocks back up, because the rocks were bigger than the auger dimension, it was actually displacing them to the side. So that as the auger went down it had resistance, but it just shoved the rocks to the side and rearranged them and found its way further down. So after about the fourth rock fell off the side of the wall and went down, the video technician didn't want to endanger [his camera]—didn't want to have a rock come down, and fall on top of it and either break it or jam it in there. He said, "I'm not going any further," and pulled it back up.

So with that knowledge, the geotechnical engineer, Steve Raas, came up with a very different structural system, which was essentially to overexcavate the swimming pool. He recommended to the pool structural engineer and architect to give up the idea of either drilled or driven pile. And what they did was to overexcavate the swimming pool dimension, and then to put the soil back in and to recompact it very heavily.

**Reti:** Overexcavate? Does that mean digging bigger than you need?

**Zwart:** Exactly. Dig out more than you need, and then put soil in close to the dimension of what you wanted, and compact it very densely. And then do a final excavation of the shape that you want. One of the big concerns that the geotechnical engineer had was that if the pool were to break or to rupture, and water were to go down, that could trigger a catastrophic collapse of one of these subsurface voids. If all of the material was washed out by an influx of water, that would open up a big vat and [makes whooshing noise] nothing would be there to support what was up above it. So they suggested that the pool be allowed to span a certain dimension, anticipating what a void might be. But more importantly, with this overcompaction, then they laid a geofabric membrane that was going to be water impermeable. So in other words, they created a bathtub, and then put in a layer of gravel, so that if the concrete shell of the pool were to break, rather than going into the soil it would be in this gravel bed. That would hold the water. And then you could you have a soil-borne structure. And that's exactly what they did. They overexcavated, put the soil back in recompact, shaped it to the shape that they wanted, created this bathtub at the bottom, and then built steel framework and shot blue concrete against the steel reinforcing.

And that created the swimming pool. Steve said that in the immediate aftermath of the Loma Prieta Earthquake (by that time the pool had been finished and was full of water), one of the first stops he made on campus was the swimming pool to see how it had done. It had performed well. And, in fact I think it went on to win some sort of geotechnical engineering design award.

**Reti:** I bet. It's quite ingenious.

**Zwart:** It was very ingenious. But when it comes to talking about why we paid so much attention to subsurface conditions, I would often tell the story of the swimming pool and the geotechnical gymnastics that we had to go through in order to get that built. And particularly the story of finding that variety of geotechnical conditions within a relatively small area, talked about how unpredictable the soils of the campus are.

**Reti:** Because the original pool that was there wasn't large enough—

**Zwart:** Well, it actually wasn't there. It was up on the hill closer to the Cowell Dining Hall. That pool actually got removed when the infill apartments for Stevenson College were built. But you're right. That was a recreational size pool.

**Reti:** We weren't doing competitive sports in the early years of the campus.

**Zwart:** We weren't doing competitive sports. So when they built the swimming pool, they wanted it adequate to do competitive swimming in. And they did. So that's the interesting part of the OPERS story.

**Reti:** Great. Thank you. That's a great story.



## Colleges Nine and Ten

**Reti:** Today is July 20, 2010 and this is my third interview with Frank Zwart. We're at the Science & Engineering Library. Today, Frank, we're going to focus specifically on Colleges Nine and Ten and the planning process that you went through, and that the campus went through with that endeavor.

**Zwart:** Well, it's an interesting—it's more than a case study because there are so many different pieces of it, and it really points out some of the challenges that we faced working on the campus as that project developed. When the campus opened, its whole intention was to be built as a large institution composed of smaller sub-units within which students would find identity, friendships, most of their training, and so on. There's always been that tension between the central administration and then the smaller units. I always joke that somebody could do an interesting study going back to Renaissance history of the battle between the Guelphs and Ghibellines. I mean, do you side with the emperor, or do you side with the Pope? There was always that tension. What does it mean? It was very much a Medieval structure. The precedents for it often pointed towards Cambridge and Oxford, but the difficulty that Santa Cruz has always faced is that Cambridge and Oxford built up over a long period of time, and their administrative systems were based on that collegiate structure. Santa Cruz was an attempt to fit a collegiate structure into an organization, the University of California, which just wasn't organized that way. So much of what we do comes out of the systems that govern activities within the entire University of California, or for that matter, as we talk about state-funded projects, with the legislative and the financial cycle of the state budget.

The first seven colleges were built between—I'm not sure when construction started—but let's say 1963, when the first Long Range Development Plan was published, and about 1976 or 1977, when Oakes College, the seventh college, was opened. College Eight was instituted as a college, there was a design for it, but it was never built. The site for it was a site north of Kresge College. Edward Larrabee Barnes, a very prominent New York architect, actually did a design for it. But it got cut in the slowdown of the state budget in the 1970s. So College Eight existed as a commuter college for a number of years and didn't get physical buildings until just about the time of the Loma Prieta Earthquake in 1989. The buildings for College Eight on the site that we think of as the College Eight site, on the west side of campus, that work was underway in my first couple of years as an associate and senior architect, and construction was underway when I became campus architect.

The 1988 Long Range Development Plan said that the campus would grow by colleges, in increments of a thousand students. As the campus added a thousand students, it would add another college. And in the late 1980s, the campus saw the promise of growth. Enrollment was up on campus. It was up throughout the University of California system. I'm not sure that this is when they started talking about Tidal Wave II, the bounce of the baby boom, but all of the projections were for rapid enrollment, and in fact that did occur.<sup>16</sup> So as the campus was getting ready to handle that growth, it turned its attention to

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<sup>16</sup> See Gerald Hayward, David Breneman, and Leobardo Estrada, "Tidal Wave II Revisited: A Review of Earlier Enrollment Projections for California Higher Education," September 1998, The National Center for Public Policy and Higher Education.

Colleges Nine and Ten. Many of these conversations I only heard about secondhand, about how the campus was going to do it, because I think they were going on before I became campus architect.

But going back to the original notion of the campus, the idea is that the residential colleges would be residentially scaled, relatively small-scaled complexes of buildings, surrounding a core of buildings that would serve all of the colleges, of a more institutional scale: the library, for example, or the laboratory buildings, or the arts. Well, by the time that plans for Nine and Ten were underway, the campus had already been putting resources for capital projects, for buildings and laboratories, the two libraries, and the arts, in the core of the campus, and there was a desire, as I understand it, among faculty members in the social sciences, because at the time Nine and Ten were being planned, the need for space was strongest in the social sciences disciplines. So Nine and Ten were to house social sciences disciplines. And there was, in fact, somewhere along the line in the capital program, a proposal for a social sciences building because the social scientists wanted to come together. There was a feeling among the faculty that putting disciplines among colleges pulled them apart and was counter to what they were being asked to do. They wanted to be in the center.

This was at about the time that Robert Stevens was chancellor, and I heard this story on more than one occasion from Vice Chancellor Wendell Brase, when the social sciences said, "Well then, we want a building in the core as well," Stevens' response was, "Well, if that happens, then the only disciplines that will be left in the colleges will be the humanities, and where is the interdisciplinarity in that?"

So the solution to that problem was to plan Colleges Nine and Ten with space for the social sciences, but to make bigger buildings, larger buildings, buildings closer to the scale that we had normally built in the core of the campus. So I don't remember the exact figures; I did do some comparisons at the time. But if you look at the amount of academic space in the academic buildings at Colleges Nine and Ten, you would see that there is probably double or more the amount of space in each one than there is in each of the first eight colleges. The other the idea was to site the buildings in a location where the academic buildings could be easily accessible from the core, so that feeling of remoteness wouldn't occur.

The site that was selected (and there was some discussion of some other possible sites, and I don't remember the particulars of it because I wasn't too terribly involved in it), was the site across from the Cowell Health Center, which had been a fairly undeveloped site. I suspect if we were to go back and look at the earlier Long Range Development Plans, it was probably culled out as an academic core site rather than as a residential college site. But the idea was, in this case, to build buildings of a scale with the academic core, but also to include housing with them, which was the traditional residential college model.

The other difference between Colleges Nine and Ten and the first seven colleges—each of the first seven colleges had only one student housing type. So colleges one through five, Cowell through Porter, were built only with dormitories or residence hall spaces. Kresge College, as it was being planned, there was an effort to try and get students to stay on campus. And the idea of a little bit more freedom and complaints about dorm food and all of that stuff led to Colleges Six and Seven, which would be Kresge and Oakes, to be planned only

with student apartments. Over time, in all of those cases, there were some serious imbalances, in that undergraduate, or lower-division students, particularly freshmen, tend to like the convenience of residence halls and having dorm food. Moving from home to college and then having to do your own cooking was a big leap for lots of kids. Likewise, once students had spent a year or two in the residence halls they wanted a little more freedom than years three and four of dorm living would provide them.

So over time a series of projects were done that added student apartments to the colleges with only residence halls, and—well, I don't think that ever happened at Kresge, but at Oakes College they added some residence halls to restore that balance. So starting with College Eight, and then certainly with Colleges Nine and Ten, the programming was for a blend of residence halls and student apartment spaces. We also had said in the 1988 Long Range Development Plan that we would attempt to house seventy percent of our undergraduates on campus. So the model for student residences in the colleges was to be a thousand students, of whom 750 would live on campus. And I think the program for Colleges Nine and Ten called for 400 beds in residence halls and 350 student beds in student apartments. So that was the brief to the master planners. That's where things stood.

The other plan was—the 1988 Long Range Development Plan urged the campus to build more densely, to put more stuff in the center, because the campus was discovering that the lengthy walks from say, the classic one is from Oakes College up to Merrill College. It takes a long time and you need a pretty good heart and a good set of hiking boots to do it.

**Reti:** (laughs)

**Zwart:** So the idea of having things closer together and more easily walkable—that's a pretty standard campus planning strategy, and it's a good one. It's what makes campuses something other than just suburban layouts of facilities.

So the idea was to fit two residential colleges on the Colleges Nine and Ten site. There was actually the major site, which was directly across McLaughlin Drive from the Student Health Center. And then there was a little island of land to the northeast, separated from the main Nine and Ten site by a ravine, a drop. And the idea is that that might be used at some point for housing. The plan was to master plan the entire area. The other model for Colleges Nine and Ten, again, was learned from the campus. If you look at the plans of the first four colleges, Cowell and Stevenson as a pair and Crown and Merrill as a pair, you'll see that they are what we called a butterfly plan. They each share a kitchen that at least in the original days (the Merrill and the Stevenson dining halls have now been turned into what are called event centers), but in the original days the kitchen would serve two dining halls, one for each college. And then all of the facilities moved out from there. But there was an intention—each college was to develop its own identity, so quite clearly the two colleges intentionally turned their backs on each other. And one of the early faculty members in politics, Karl Lamb, is said to have said, "Well, we want walled colleges without the walls." They really wanted people in their college almost cloistered.

**Reti:** A medieval model, for sure.

**Zwart:** Very much of a medieval model. As I understand it from Richard Peterson, who was the campus planner in the late sixties and early seventies, when the move to the west side of the campus was made, starting with Porter College, it was felt that even that [model of two back-to-back colleges] was having colleges too close together. And the four colleges, the four early colleges on the west side were each to have its own freestanding site. So that was true of Porter (which is College Five), Kresge, (which is College Six), Oakes (which is College Seven), and then of course College Eight.

In the days of planning for Colleges Nine and Ten, we heard a lot about critical mass. There just wasn't enough critical mass of faculty members in the first eight colleges. So the idea was to get more of a critical mass. So the idea here again was to pair colleges, so that kitchen facilities and certain other services could be shared, but rather than have the colleges turn their back on each other, have them face each other to form a larger whole.

So those were the two programmatic things: a thousand students, 750 beds (400 in residence halls and 350 in apartments) for each college; larger academic space than we'd seen in the first eight colleges. And then the third thing was the phasing, because not just the campus, but the UC system, was projecting steady growth of students. So the plan was to master plan the entire site to be sure that everything could fit and to have a framework within which we would build this. And then, as state funding became available for College Nine, the College Nine academic building and the College Nine residence halls would be built in the same year. Then a year later, funding was in the state program for the College Ten academic building. The College Ten residence halls would be built in that

same year. So the two would start construction and complete construction about a year apart. At the completion of those first two phases or first two sub-phases of construction we would have two residential colleges with 800 beds. Starting three years after Nine we would build apartments for College Nine, and three years after Ten we would build apartments for College Ten. As things happened, that's not the way it worked out, but that was the original assumption that led to the master plan that we ultimately have been following for Colleges Nine and Ten.

So as these pieces were coming together, work was getting underway with the project itself. We went into the selection process for an architect. The University has a practice that any project that is called a major capital improvement project—and probably back in the day that Colleges Nine and Ten were designed that was probably any project valued at more than \$250,000 or \$300,000. More recently I think that number has been bumped from \$400,000 to \$750,000. But in any major capital project we're required to do a public selection process for the architect or the architectural team. That involves placing an advertisement letting architects know, and putting together a two-stage screening and selection process on campus. The process for this is spelled out in the University's Facilities Manual, and then each campus does it in its own particular way.<sup>17</sup>

So after we place the advertisement we ask for a certain amount of information from interested consultant teams, and this will vary from project to project. We're looking for a different set of skills for a laboratory project than we would

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<sup>17</sup> See <http://www.ucop.edu/facil/fmc/facilman/>



be for a library, than we might for a residential college. Architectural firms will send in proposals, or statements of qualifications. We put together a screening committee, which is normally, I would say four or five people, again depending on the size of the project. And then we might get, depending on the size of the project, somewhere between twenty-five and forty proposals, depending on how busy people are and how interesting the project is, and so on. We then put together a screening committee that reviews all of those proposals and screens them down to a certain number for further consideration by what is called the selection committee. So typically, as we refined the process for the Santa Cruz campus we would try to whittle that original number of twenty-five to forty down to somewhere between eight and twelve firms, proposals, or qualification statements, to take to the full selection committee. And in the selection committee we typically have professional members of the staff, members from capital planning and from our office, Physical Planning & Construction, usually the project architect. We would typically have a representative of the user, faculty members, for example. So on the Physical Sciences Building (which was the Chemistry Building and started off as Natural Sciences 5), we had a couple of faculty members from chemistry. We will often have someone who is not affiliated with the project, but who has been through the process before. So, for example, on the Physical Sciences Building, Natural Sciences 5, Lan Dyson, who was then University Librarian, had just finished chairing the building committee for the Science Library. He was also knowledgeable about campus planning. And we wanted to make sure that there was a campus-wide perspective in that selection process, that it wasn't just

highly client-oriented. So he was on that committee. And then we will typically have students on the selection committee, with some relation to the building's program. For student projects we typically have more students; for academic projects we have fewer students. But we always have a place for students at the table.

And often the campus will also put together what's called a building committee, which again typically includes representatives of the discipline or disciplines that will be housed in the building, student representatives, and broader campus representatives. And more often than not, the architect selection committee is a subset of the building and programming committee. So for Colleges Nine and Ten (and I'm trying to remember who all was on it; this isn't going to be a comprehensive list), if I remember, John Isbister, who was a professor of economics, chaired it. He had been the provost of Merrill College for many years. He'd also chaired the [1988] Long Range Development Plan committee, so he was quite knowledgeable about that stuff. Adrienne Zihlman from anthropology was on the committee. College Nine was to house anthropology and economics, and College Ten was to house psychology, as the program evolved. And Dom Massaro from psychology was on the committee. I'm trying to remember who the economist was. I think it was Carl Walsh. Anyway, they were the core of the building committee and a subset of them was on the architect selection committee. That's all in the project records.

And this occurred when Jack Wolever was still campus architect. So we did an architect selection process. We advertised; we got a good set of responses. The architect selection committee is typically a subset of the Building and

Programming committee. And as we move the process through the screening committee to the selection committee we will typically try to reduce the twenty-five to forty applications or proposals or statements of interests, down to eight to twelve for consideration by the selection committee. We then set a target of four to six firms to interview. We let the selection committee make that determination. So we try to cut the number roughly in half.

I do remember some of the interviews that we conducted for Colleges Nine and Ten, but I don't remember whether it was four or six. I remember Jack Wolever, who was then campus architect, chaired that process and directed that process.

After we finished the interview process, we had some interesting teams that had submitted. One team was Fisher-Freedman Associates, a San Francisco firm that had done a lot of housing. They teamed up with a firm called the Architects Collaborative.

Architects Collaborative was a very famous firm that had its roots in Cambridge, Massachusetts. When Walter Gropius fled Europe at the time of World War II, he established the Architects Collaborative in Boston, or in Cambridge. [At the time of the Colleges Nine and Ten interviews, they had recently set up an office in San Francisco, and they had done a lot of institutional work. We thought that was a natural pairing for one of our residential colleges. It was one of the worst interviews I ever sat through. They brought too many people. They were talking all over each other. They couldn't agree on anything. They just shot themselves in the foot. So that one—when they said, "What did we do wrong?" it was easy to tell them in debriefing.

The final selection was something of a surprise to me, but it was a choice that I supported, Robert A.M. Stern, who is a New York architect. I don't think he had yet become the dean of the Yale School of Architecture. He had been on the faculty of Columbia for many years. He had very historicist leanings, I would say. He considered himself a postmodernist. He was selected in association with a San Francisco firm, Gordon Chong and Associates.

**Reti:** Frank, can you explain what it means to be a historicist or a postmodernist?

**Zwart:** Oh. Okay. If you look at the history of modern architecture and the International Style, up until the International Style typically architecture looked back into historical periods, and the most interesting architecture was really a new interpretation or reinterpretation of historical models. So, for example, McKim, Mead and White, one of the great [American] architectural firms of the late 19<sup>th</sup> and early 20<sup>th</sup> centuries often looked back to Roman models, Renaissance models, Palazzo and so on. All of that, that knowledge of particular architectural styles got thrown out at the time of the International Style. Everything was modern. Old was bad, modern was good. So the physical models for the International Style tended to be more industrial forms generated by engineers. If you look closely enough at it, they were very sophisticated artistic forms as well. But the whole notion of arches, or understanding the language of the five orders of Roman columns, that went out. You just didn't see very many buildings of that sort at all designed in the world in the 1950s and 1960s. Then in the mid-seventies there was a renewed interest, first in academic circles, but also in circles of architectural practice, of looking back for historical models. Designs were starting to take lessons from, and in some cases to mimic or to ape historical

forms. So when Philip Johnson designed the AT&T building in New York, in Manhattan, it had a funny cap. They called it the Chippendale, because it looked like a piece of historic furniture. So Stern's practice looked back to history, and so he tended to do historicist buildings.

**Reti:** Rather than modernist, post-modernist.

**Zwart:** Yes, post-modern is looking back to— And it's a term that's used loosely. It means other things in literary criticism. I'll leave to that to the architectural historians.

So Stern's picture was very historicist. He did a very good interview, very thoughtful. He's a very smart, very intelligent, and personable guy. I think that we felt that since this was really the first new pair of colleges that the campus had put together in quite some time, the idea of having somebody taking a fresh look at Santa Cruz was something that was attractive to the selection committee.

We started some master planning work. I don't remember exactly what year it was, but July 1 is the magic date for state funds to start to flow. That's the beginning of the state's fiscal year. We will typically, leading up to that time, try to do some programming or some general planning to get a sense of what's possible. And our first question was: how much can we fit on the site? Will this site really carry the amount of stuff that we're proposing to put on it? So Stern went off and started doing some studies and came up with something that in plan looked like the collegiate Gothic buildings at Yale or at Princeton, which was really interesting, because again they were looking at historical models. They did some interesting diagrams that laid out the eight existing colleges all at

the same scale, and then took other collegiate complexes, Nassau Hall at Princeton and Nassau Green in front of it, or Stiles and Morse Colleges at Yale, Saarinen<sup>18</sup> jobs from the late fifties or early sixties, and did them all at the same scale, just to get a sense of scale, and then compared that. And in fact, we've used those diagrams since then, because it was a very helpful analytical and explanatory tool.

They had some interesting ideas. But it was a first pass. It was imperfect; it was done quickly, but it at least convinced us that we were not entirely crazy in what we were asking to put on the site. But there were certain things that were going to be a real problem. For example, they were proposing to create a service yard for the dining hall. I think this was immediately next to student residence halls. There were going to be some noise problems. There were a few things where people who had watched the [way that existing] colleges work said, "Well, that's not going to work. Can you reconsider that, or take another look at it?" So it was a promising start, but it was still very preliminary.

But when they came back during the next iteration they had made very few changes. It was really quite disappointing. We had been used to working with architects who, when we as the client said, well, this works and this doesn't, they would really go back and rethink and try and wrestle with the problems as we stated it. Here it appeared that Stern's office had just erased around the edges

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<sup>18</sup> Eero Saarinen (1910-1961) was a Finnish American architect also known for his designs for the Gateway Arch in St. Louis, the main terminal at Dulles Airport, and the MIT Chapel and Kresge Auditorium.—Frank Zwart (written communication).

and sort of put it back. We went through three or four iterations of that, and we just were not satisfied.

We'd only hired Stern and Chong to do master planning. We hadn't signed a contract for the entire services. So we let them know that we were not happy with the services we were getting from them or with the evolving design—we'd had some conversations about that along the way—and we finally said we're not going to be moving into design with you. They were not at all happy about it. But we stuck by it.

We've been in the habit when we select architects to designate a preferred or recommended firm and then also to ask the selection committee to list one or two alternates to that, in order. So if things don't work out with the first firm, for whatever reason—if we can't reach a fee agreement, or we're not happy with the services we're getting early on—we don't have to redo a search. The firm that we pick will be the product of a search. So the number two firm in that selection was Esherick, Homsey, Dodge, and Davis, who knew the campus well. So we went to them and they were available, and they picked up Colleges Nine and Ten.

They took a very different approach to the site. George Homsey was the principal in charge in the early days. He came up, and he rented a canopy and put it up on the site. They worked on the site for two or three days and walked the site, which is their practice, and came up with a very, very different approach to the site than Stern had, probably one that was much more in keeping with the physical setting, the Santa Cruz setting, than some of Stern's historicist one. And off we went.

We probably didn't really get going until late 1988 and early 1989, because I remember that we were in design on the College Nine Academic Building, which was the first state-funded component of the project, at the time of the Loma Prieta Earthquake. We held one of our value engineering sessions at one of the airport hotels in San Francisco, since Highway 17 was still closed. That had been scheduled for sometime in late October 1989. We were able to get out, but we didn't want everybody to have to find their way to Santa Cruz with Highway 17 being closed. So we held that up there and moved forward.

But EHDD did a very good job. There was a clearing in the middle of this site that the architects and landscape architects kept referring to as the meadow. Maggie Fusari, who was a faculty member in environmental studies and headed up the Campus Natural Reserve, just laughed when she heard that and said, "That's no meadow. That's just a clearing in the woods." But it was still called a meadow. Anyway, George clustered the two academic buildings, which were the large buildings which came to be called Social Sciences 1 and 2 or the College Nine and College Ten Academic Buildings, around that, to clearly define that, tucked them up into the trees on either side and reinforced the sense of the opening in the meadow.

So we moved forward. There were some surprises. The budget, the original plan for the project, was to build it in cast-in-place concrete. But there had been some assumptions that proved to be unrealistic about the building efficiency, which is the amount of usable space in the building as a percentage of the overall space of the building. Those assumptions were way too optimistic. So right from the start we wound up with some budget surprises. But George Homsey and EHDD



responded well and changed the proposed structural and construction system from cast-in-place concrete to a steel frame. I think the College Nine Academic Building actually came in significantly under budget because it wound up bidding at a time when construction activity was down so we were getting good prices.

**Reti:** We had a recession in the early nineties.

**Zwart:** That's right. I think we probably benefited from that. Yes, because if we were in design in early 1989, that probably means that we got construction document money in 1990, and we would have been out to bid in early 1991, something like that.

But several other things happened along the way. Now, I said earlier that the 1988 Long Range Development Plan said that we would grow by colleges. The difficulty with doing that is that any of the residential colleges at Santa Cruz gets funding from different sources. It's not as if the campus has one pot of money, all of which can be used to build one of its residential colleges. The state funds the academic portion of the college. The State capital planning, capital budgeting process is very well defined. It's something that the University follows. And that really fits into the way the legislature grants funds. I don't know, because I haven't actually worked with the capital budgeting mechanisms at the CSU system or the community colleges or any other state agency, but essentially it's tied to the July 1 to June 30 rhythm of the state's fiscal year. But to justify a building for state funds, the campus does significant studies of enrollment, enrollment in classes, classroom utilization. Once our classrooms are overutilized

and we don't have enough space, then we can justify a building to the state and get money for it. There's a long ritual dance between us, the Office of the President in Oakland, and Sacramento, to make that happen.

**Reti:** So we have to wait until things are overcrowded before—

**Zwart:** Well, I wouldn't go that far, but that's the practical result. We actually are allowed to build for expected enrollment a couple of years after completion. The people in the capital planning office could tell you exactly what that is. Let's imagine that a building is scheduled to open in 2012. I think they can say, well, we're anticipating an enrollment in 2014, and we'll build for that. But we're not going to be able to build in 2012 for a 2020 enrollment. So that's the state funding cycle.

On the housing-funded cycle, Sacramento doesn't get involved in that side of things. That's entirely between the campus, the Office of the President, and the University's Office of the Treasurer on financing it. Since the University finances those projects itself, it's got to demonstrate to bond holders that it's got the means to pay the bonds back. So in effect, the way I look at it is, in order to do that you've got to show that you've got the heads to put on pillows right then. You don't build excess capacity in that regard. But it's an entirely different cycle. Enrollment affects both of those processes, but not in the same way. Enrollment affects academic planning to the degree that if our enrollment was going one hundred percent into history we would build less space than if it was going one hundred percent into biology, because typically a faculty member in biology with a lab and postdocs and the like needs more space than a historian. I'm

exaggerating, of course. So while that's related to enrollment, it's not a clear formula. Furthermore, it's also possible that academic programs, particularly on the research side, can move forward even if enrollment isn't growing. So that's one way to justify space. The other, on student residences a lot of it depends on how many students choose to live on campus. So if we were housing eighty or ninety percent of our students on campus, we would be building more housing. I'll point to another campus, thirty to thirty-five percent. So they're both related to enrollment, but they're out of cycle.

So that's exactly what happened with Colleges Nine and Ten. As we were moving forward, the master plan for Nine and Ten that George Homsey developed was essentially what wound up being built. The two academic buildings are around the center of the site, around the so-called meadow, the clearing in the forest. Downhill, or south of that, were to be residence halls and a dining hall, about four hundred beds for each college, and a dining hall. And that was all done on the theory that the academic building and the residence halls for College Nine would be built first, and then College Ten [would be built], and then we would come in later and do the apartments. And then, to the north of the site, uphill from the two academic buildings and the residence halls, would be student apartments.

So as we were moving forward on the timeline to build out Nine and Ten, Housing started looking at its overall enrollment figures and the demand for its various kinds of housing, and they realized that their apartments were overcrowded; their residence halls had enough capacity. What they really needed was more apartment space. So after the master plan had pretty well been

established and approved and so on, Housing said, well, we really want the apartments first, which meant we had to rethink the whole phasing of things.

I think the assumption had been, when we were going to build the academic building and then residence halls of Nine together and then the academic building and residence halls for Ten together, that would allow us to build the roads for Nine and Ten more or less simultaneously and then extend them further to the north to build the apartments when that came to pass. That actually all got turned on its head as we wound up phasing it. So there were some fairly complicated allocating of expenses to Housing, to the state, to pay for stuff. It all worked out.

The revised plan then, was to build College Nine and the College Nine apartments first, and then come in and do residence halls. So we were moving forward. We did what's called a Design-Build competition for the apartments for College Nine. And that differs from the more conventional way of getting a project developed on campus, the method I described a little while ago, in that we hire the architect or the architectural team long before we hire a contractor. They develop a design. They define it very clearly in a set of construction documents. Then we go through an elaborate process and go out to bid. Then contractors bid on it and build it to the architect's original design. And then, typically under public contract provisions, and under most state's public contract provisions you are required to award the contract to the lowest bid from a responsible bidder. In other words, a contractor has to develop some level of competence, and then whoever submits the lowest price, assuming they meet that threshold of competence, it goes to the lowest bid. The theory is that all the

contractors are bidding on exactly the same set of designs. That's frozen and then the price is the only variable.

In Design-Build there are a number of ways to structure it, but effectively what it means is you don't have a detailed design that a contractor builds. The contractor and the architect come together as a team, and there are different levels of detail that you can provide in the documents that you give to a Design-Build team, ranging from, I want 300 beds and 150 double rooms and bathrooms for every six rooms or whatever, and turn the thing loose. Or you can be much more prescriptive in what you say. But you put together a scoring system where you state what you want as far as programmatic requirements—how many beds, how big they need to be and so on; you state a level of construction quality; and you leave the rest to be worked out between the contractor and the bidder.

Typically, the way we did it, we did a two-step process. The designs would be submitted anonymously and we would compare the designs. A technical team that would include members of our staff and (all of our Design-Build projects to date have been housing projects) representatives of the housing office would evaluate and give points to each of the designs. That's typically done a couple of weeks before we ask the contractors to submit their bids. Quite often we would say the maximum dollar amount that we will allow is this—any bids higher than 25 million dollars we will reject [for example]. And then once you open the bids, then you also reveal how many points each of the bidders got. And you divide the points into the dollars, so the lowest cost per point becomes the winner. So it's possible that somebody would submit a higher bid but have a lower price per point because we'd be getting more for the money. So it becomes a little bit more

complicated to administer. It's a process that, as I said, we used on housing. UC Irvine uses it for lots and lots of stuff, including academic buildings and laboratory buildings.

So we had gone through a Design-Build process for the College Nine apartments. We had a bidder. There was a very, very low price set on it. And we actually got several letters from contractors during the process saying, "We don't think that you can build that number of beds for that amount of money." I mentioned that to the director of housing and the director of housing said, "That's all the money we've got. If we can't build it for that, we can't afford to build it."

So we did get a responsive bid. It was a contracting company, Shaw Construction, that had worked successfully on campus. They had built the College Eight apartments; they had built the Student Center. I think they might have done one other housing project. I can't quite remember. And we were prepared to award the contract to them. This was at a time (I think it was in the aftermath of the economic slowdown in the mid-nineties) enrollments were leveling off and softening, student housing was seeing its vacancy rate go up slowly; its occupancy rate was going down. And they [UCSC's Housing Office] were concerned that they weren't going to be able to [afford to] build the beds. So they called off the project and canceled the contract. We had some language in the contract document saying that if we chose not to build we would compensate the low bidder a certain amount of money. So we wrote them a check and then the project went on the shelf for a number of years.

So as a result, what started off as two academic buildings, College Nine Academic Building and College Ten Academic Building, housing anthropology and economics in College Nine and psychology in College Ten, wound up just sitting in the middle of the woods alone and being called Social Sciences 1 and Social Sciences 2 for six or eight years until we actually got a chance to build the colleges around it.

We had actually been getting ready to move forward with the residence halls, and when it came time to clear the trees there was a big protest on the site. Colleges Nine and Ten was, to some way of thinking, sacred land. It was called Elfland by some members of the campus community. That's something I had never heard of [in the sixties], so that's something that must have grown up in the seventies and eighties. And so it was seen as sacred ground, and there were significant protests. We wound up with forty or forty-five arrests as we tried to take the trees down. But that happened successfully. Sara Kane, who was our project manager on College Nine, actually wound up being a witness [at the trial of the] people [arrested for] chaining themselves to trees. We couldn't do anything without controversy. But the trees came down and we built Nine and Ten successfully. But, as I said, the academic buildings sat there sort of alone for a number of years.<sup>19</sup>

I mentioned earlier that we had some budget surprises. So we had to look for very economical forms of construction, and the architect, George Homsey, went

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<sup>19</sup> See "Campus Life: California, Santa Cruz; Redwood Haven Inspires Battle over an Elfland," *New York Times*, January 12, 1992. <http://www.nytimes.com/1992/01/12/nyregion/campus-life-california-santa-cruz-redwood-haven-inspires-battle-over-an-elfland.html?pagewanted=all>

from what we thought would be concrete structures to steel structures. Well, in California of course it's very important that we use seismic design for earthquake forces, which are lateral forces. There needs to be in any building bracing to resist those lateral forces. In steel, there are a couple of ways of doing that. One, the easiest, is to triangulate and do what's called a braced frame. So if you go into Colleges Nine and Ten you'll actually see diagonal steel members that provide that bracing, that stiffen the frame.

**Reti:** Yes, I've noticed that.

**Zwart:** The other way to do it that can avoid those is called a moment-resisting frame, where essentially you build much beefier joints and the earthquake forces are taken up there. As the architect and structural engineer were investigating that, it turned out that there was a significant cost difference between braced frame and moment-resisting frame. I think moment-resisting frame was going to cost on the order of \$300,000 to \$500,000 more for either of the two colleges than braced frame. So given that we were concerned about budget, we went to braced frame.

And again, I don't remember the exact chronology here, but as this project was being designed the Northridge earthquake occurred in Southern California.<sup>20</sup> It revealed that some of the structural engineering theories upon which moment-resisting design was based were flawed. So the whole theory of how you

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<sup>20</sup> The Northridge, California quake was 6.7 magnitude and took place on January 17, 1994. According to the USGS, "Sixty people were killed, more than 7,000 injured, 20,000 homeless and more than 40,000 buildings damaged in Los Angeles, Ventura, Orange and San Bernardino Counties." [http://earthquake.usgs.gov/earthquakes/states/events/1994\\_01\\_17.php](http://earthquake.usgs.gov/earthquakes/states/events/1994_01_17.php)



designed a moment-resisting structure changed. It's not unusual that in the aftermath of a seismic event structural engineers go back and make some adjustments in the way they design things. So for many reasons we were pleased and relieved that we had decided to go with a braced frame rather than a moment-resisting frame.

But what was so interesting was that as we were having these discussions with the building committee, George Homsey wanted to do a real, show everything, bare bones approach in the buildings. At College Nine that was fine. So if you go into that building you'll see exposed steel. You'll see no suspended ceilings. You'll see all the pipes and ducts everything. And that was fine. The economists and anthropologists didn't have a problem with that at all.

**Reti:** (laughs)

**Zwart:** The psychologists—they didn't want to see any of that stuff. They didn't want to see diagonal frames. We just said, "We can't afford anything else." "Well," they said, "Can't you at least cover them in sheet rock or something like that?" So if you go into College Ten you'll see suspended ceilings. You'll see the diagonal bracings are covered in sheetrock. I always wondered if that was some difference between anthropologists and psychologists and the way that they look at the world. (laughs) I just thought that was an interesting commentary on aesthetic preferences of different disciplines. But they went ahead, and they worked out fine.

Again, I don't remember exactly when they were completed, 1993 or 1994. So they were there for several years. And the Colleges Nine and Ten story goes on hold for a little while.

And then several things happened in 1996, at least three of which are germane to this story. We got a new chancellor; MRC Greenwood arrived as chancellor. You had mentioned a few minutes ago an economic turndown in the early nineties.<sup>21</sup> And the combination of that and some people's reaction to the Loma Prieta Earthquake (although I think this was really a minor piece of the story. I think the bigger part of the story was the economic slowdown in the early nineties). As a result there was a softening in real estate values. People were losing jobs and so on. Rather than sell houses at a loss, a lot of people who moved [away from Santa Cruz] put their houses into the rental market. So in the first half of the nineties students didn't have problem finding off campus housing if they wanted it. There was a lot of rental stock.

In the mid-nineties, enrollment picked up again. Things got busy. The economy got busy. The real estate market took off again. Owners would either come back and live in their houses in Santa Cruz, or with prices rebounding, they would put them on the market. That dried up a lot of the rental housing stock. It just was no longer available. Shortly after MRC Greenwood arrived in Santa Cruz, she was greeted by a front page article in the *Santa Cruz Sentinel*— Students were in the habit of coming back to school in September after the summer and not

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<sup>21</sup> During the U.S. recession that lasted from July 1990 through March 1991, the economy showed the lowest growth rate since the Great Depression—Editor.

having a problem finding anywhere to live. There was a front page article in the *Sentinel* saying there's nowhere to live for all of these students. The housing market had dried up. There were more students than there had been in the past. So this was seen as a crisis.

The other significant thing that happened in 1996 is that I got married. When we came back from our honeymoon we saw that article, and the first meeting on my calendar after we got back was with Jerry Walters who was then director of housing, and Peggy Asuncion, who was his Facilities aide, saying, "We've got to bring the College Nine apartments back to life."

**Reti:** Oh!

**Zwart:** (laughs) So then work got started in a big way on Colleges Nine and Ten. And we didn't have rights to any design because the Design-Build competition was over and we wanted to see if we could do a better job. So we just put pedal to the metal and got started on the College Nine apartments. And George Homsey designed what wound up being there now.

**Reti:** So did you start over completely with the design? Is that what you mean?

**Zwart:** Well, the master plan had already been established, and so we knew the general site for the apartments. But with the Design-Build competition, what we had seen was just a very early design. It wasn't ready to bid. We'd have to go back and see whether we had any contractual rights to the design or not. But it wasn't entirely satisfactory. The other thing was that time was very, very urgent. Construction prices had gone up. We needed to get in there. We looked into

doing another Design-Build competition. But we thought the fastest way was just to proceed to do it conventionally, to design it, and go from there. And that's exactly what we did.

So we got that project going. We had been very optimistic when we cleared the site for Colleges Nine and Ten, so we had taken out trees in the general area of the dining hall. And again, that design hadn't really been developed in detail, but there was a general plan for it. We had also done all of the environmental studies on it, all of the environmental impact reports and so on. I don't remember exactly, but somewhere in there, I think if you were to look at the history of UC Santa Cruz enrollments, you'd see about a jump of about a thousand students in one year. Students were coming fast and furious and we had to have somewhere to put them. So we actually brought in a bunch of prefab housing, modulars, we called them, trailers.

**Reti:** Essentially going back to the beginning of the history of the campus, when the students lived in trailers.

**Zwart:** Going to back to the beginning of the campus. And since we had already done a CEQA [California Environmental Quality Act] analysis, we were able to do a minimal amount of additional analysis and put a bunch of modular units on the site originally designed for the College Nine and Ten residence halls. It was really just a holding action in that it wasn't very high-density housing. We wanted to do it in a way that would minimize reduction of tree cover.

So we got it done. It was a mad dash to get them there, get the students in. And we did manage to do that. But having visited the site two or three times during

construction, when people think, “Oh, we can do something cheap. We’ll just bring in trailers or we’ll just bring in modulars,” it’s almost as much work to bring in the utilities underground, whether you’re doing something permanently or doing it temporarily. And you can’t get the density. I suspect there are modular solutions where you might be able to get a couple of stories stacked. I’ve seen them in non-seismic areas. I haven’t seen them around here. But it’s just a much lower-density solution.

So we moved them in, and it became known as The Village.

**Reti:** How quickly did that happen?

**Zwart:** Oh, I think it happened within nine months to a year. I don’t remember the time-frame. But it was a very ambitious schedule that we managed to meet.

But once they were in place, and once the [College] Nine apartments were completed, enrollment continued to grow and we needed to get some more beds. Since we already had a general plan for the Nine and Ten residence halls, we turned our attention to doing that. Design work for that got started as the College Nine apartments were under construction and as The Village was being occupied. The idea was that once we got the residence halls for Nine and Ten ready to go, then we would move the modulars and find another site for them, and then build on the same site. There are about eight hundred beds there. I don’t remember how many beds we had in the Village, but if it was over a hundred it would have been a lot. So we were going to be able to really increase the carrying capacity at that site. All of this stuff was done on a very, very fast timetable. But it was done.

But in the course of doing the detailed design for the residence halls for Nine and Ten, somebody got the idea (I wish I could take credit for it because I think it was a good idea. But it was somebody in Housing), “The campus has looked for a faculty club for years. Given that we’re going to be building a kitchen complex anyway, is there any way that we can put that in the mix and put it above the dining hall?” And, in fact, that was the birth of the University Center.

Going back, one of the first projects that I managed on campus was a project called the University Club, which was our euphemism for a faculty club. That was proposed for a site where the music facility currently sits. And we actually went fairly far—I know we went through design development; I don’t think we actually got into working drawings. We worked with an architect from San Francisco named Chester Bowles, who was a very thoughtful, serious architect, kept an intentionally small practice, had done a lot of very nice residential scale and slightly larger than residential scale in the countryside. He came up with a very nice design. But shortly after Robert Stevens arrived on campus (this was I guess all done when Bob Sinsheimer was chancellor) there were a number of faculty members who were opposed to this and they went to Stevens. Then Stevens put a stop to it and it never saw the light of day again.

**Reti:** Because it was perceived as elitist?

**Zwart:** Elitist, yes. The students started calling it “the no-students club” and there were a lot of conversations about how to handle that. But if you go back and look in campus records, I’ve seen correspondence dating back to 1968 about the possibility of developing something like a faculty club. I think as the campus

grew, and particularly as it got more dispersed, the notion of having a place where faculty and staff from different disciplines could come together and meet centrally was something that seemed to be very important. The idea of a club, even though it didn't get built in that late 1980s iteration, the idea of having something central became really quite important.

So as I said before, somebody had the bright idea—and I don't mean that in any sarcastic way. I think it was a very good idea to look at [putting it on top of the Colleges Nine and Ten dining hall]—but it made the problem [of designing Colleges Nine and Ten] very, very hard. Our sites are very tough anyway. Getting eight hundred beds on that site was going to be tough. There are so many things that you don't think about unless you get into the middle of it. For example, the campus fire marshal, fire chief, fire department want certain kinds of access widths to all of the buildings on campus. So all of the roadways, all of the pathways, need to be sized with that in mind. My predecessor, Jack Wolever, used to say that the most important person on campus was whoever drove the campus garbage truck, because its turning radiuses are so large, and of course getting trash away from a dining hall complex or from student residences is a big deal. So that needs to be taken into account. The influx of students and parents in September and again in June, to drop kids off and to pick them up, is something else that needs to be thought through. And yet, you don't want to pave everything. EHDD needed to come up with a scheme that accommodated all of that stuff, and yet was something that people would want to live in every day. I think they really did a masterful job. There are some aerial photographs of Nine and Ten, and if you take a look at them, they really wove those buildings very

thoughtfully, very sensitively, among these big tree masses. They did a really nice job. The additional complexity that came about by putting a university center on top of the student dining facility was a real challenge. But I think they met it well. I know lots of people were concerned about parking—people weren't going to be able to park and so on. And I guess that does prove to be a challenge for special events from time to time. But the campus has managed it very, very well. And as far as I know, the University Center is a roaring success, to the extent that you have to make reservations for lunch.

**Reti:** Yes. Sometimes you can't get them.

**Zwart:** Yes. So it really showed that there was a need. And I think it serves its function. I think EHDD did a really nice job. There are still some acoustic issues that need to be worked on. Sara Kane was our manager on that, and I can't say enough about Sara and the work she did for the campus in her time here. She was just a tiger, very committed to doing things well. To watch her at work in a job trailer is just a delight. She really did a good job. I know she brought in an acoustician to take a look at it, and there are a series of recommendations to Housing to fix up the acoustics. I think they are moving slowly to put them in place.

**Reti:** In the University Center?

**Zwart:** Well, in all of that dining complex, but in the University Center, particularly in that Multipurpose Room.

**Reti:** It gets pretty loud in there.



**Zwart:** It can, and the reverberations are tough. So they came up with some solutions, and part of it is partly a better electronic amplification system. It's proven to be very useful for lots of different functions, and I think people are pretty happy with it. The other thing Housing has done a very job on is getting a good chef there, because the food is actually pretty tasty as well. I don't think any nice space is going to overcome lousy food, and they've really done a nice job in making sure that the food there lives up to the quality of the space.

Time was of the essence and speed was of the essence in building the residence halls. We really wanted to get started, we simply didn't have the time to complete an entire set of working drawings and then bid, and get people into their rooms in whatever September that was going to be. We wanted to use what's called fast tracking, which is a mechanism (and there are several different ways to do it) where a contractor can start work on the foundations of a building before all of the design is completed.

So essentially what we did there was to use a form of contracting that UC Riverside had used quite successfully. We had mixed results on Nine and Ten. It all came out fine in the end but it was a struggle getting there. It's called multiple prime [contracting]. Normally the general contractor holds a series of twenty to thirty to forty subcontracts with each individual sub-trade—a steel contractor, a site work contractor, an underground utility contractor, concrete contractor, sheetrock contractor, and the like. Under multiple prime, what's normally a subcontract between a subcontractor and a general contractor, is a prime contract between a subcontractor and the owner. We hired a general contractor to serve as coordinator and advisor on that, but we actually held all of those individual

contracts. And that allowed us, rather than bidding everything at once, we could phase the bidding process and bid the site work and the underground work, which wasn't going to change once we'd gotten to a certain point, so that the contractor could start construction even as the architect finished the drawings for the rest of the complex.

So we used multiple prime on that. And again, it was a real challenge. Sara was up there every single day dealing with all the subcontractors and moving things forward. I think the outcome came together pretty nicely. I was there the day that the students were moving into the residence halls. And I thought to myself, you know, for two years or three years I've seen this as a construction site, and now I see students here. In a matter of three days, it's turned from a construction site to home for some people. And then I also got to thinking, I'm trying to think of when this was—it was probably 2003, 2004, or something like that. I was thinking, boy, we started work on this project back in 1988. I said, these eighteen year olds were three or four years old when this got started! (laughs)

**Reti:** That's a frightening thought. (laughs)

**Zwart:** I was telling somebody—I said, we started this project back when the freshmen who are just arriving were three or four years old. And whoever I was telling said, "And isn't it nice you got it ready just for them!" (laughs) So it was a long process, but I think it wound up working out pretty well.

### The Evolution of Planning at UC Santa Cruz

**Reti:** Was there a shift in terms of the planning environment between the different chancellors' administrations? For example, you mentioned that when MRC Greenwood came in that that was significant because of the timing in terms of not having enough residential housing on campus, and that she saw that as a priority. But were there other shifts in climate that affected your office?

**Zwart:** Yes, I think so. I don't know the degree to which that's attributed to individual chancellors, although they certainly play a role, and how much of it is driven by other outside circumstances and the speed of growth. As I said (I think it was probably last time) back in the very early days planning for all of the UC campuses was a high priority. They had a position in the Office of the President that assisted campuses on town-gown planning, collaborative planning. We had a position on campus in the early days called the campus planner. That's the position that Richard Peterson, who I wound up working for in the late seventies and early eighties, held from 1968 to 1972. So there was a real culture of planning that existed on the campus and systemwide. But that really dwindled when not much was going between 1975 or 1977 and 1985. There wasn't much going on so there wasn't anybody there. I know that Vice Chancellor Brase was very engaged and very involved in planning, and he didn't see the need for a strong planning office. He did that. He was very good at some things and less good at others. But there just hadn't been much going on.

I also think that bigger picture that a well-thought out plan can present to a campus community had dwindled and fallen into history. I remember one

meeting very early on, long before I was campus architect. It involved the design of the Student Center. Fernau and Hartman were doing a study on possible sites for the Student Center. Vice Chancellor Brase wanted the chancellor involved in some of these conversations. So he came to a meeting. And Fernau and Hartman, who were not shrinking violets and not bashful—I mean Richard’s a professor of architecture at Berkeley and a very thoughtful guy—was running through them, and he explained why it was sited somewhere and not somewhere else, and he talked about respecting the Great Meadow. The Great Meadow is the area below the tree line. In fact, if you look at the original 1963 Long Range Development Plan, it wasn’t just areas south of the tree line. People today hear about the Great Meadow and they think about that expanse that goes from Cowell and Stevenson to the south, or from the Music Building to the south, and so on.

**Reti:** Right.

**Zwart:** In fact, it was really just the area in the center of the campus below the treeline. If you look at the first Long Range Development Plan, the meadows below Cowell and Stevenson and the East Fieldhouse were proposed as building sites as well. But the openness and expansive of the meadows were very important. And as an alumnus, and as a thoughtful designer and planner, Richard Fernau was quite aware of that and quite sensitive to it. So he made some comment about preserving the Great Meadow.<sup>22</sup> [Chancellor] Bob

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<sup>22</sup> “If the University maintains this [meadow] space as an open area, by the year 1990 it may well be one of the most rare, gratifying, and valuable assets of the campus.” —1963 UCSC Long Range Development Plan.

Sinsheimer walked up to a plan and he pointed. He said, “My job is to develop the academic purposes of the campus. And if that requires putting a building there,” and he pointed at the “G” in the Great Meadow, he said, “that’s what I’m going to do.” That took all of us planning types aback.

I realized you can’t blame a chancellor for saying that. The difficulty was that the campus didn’t have a structure in place that could say to the chancellor, “You can meet your academic needs *and* do it while preserving the Great Meadow.” It was that kind of overall picture that was lost as things dwindled down. Part of it came back—I think the development of the 1988 LRDP [Long Range Development Plan] reinforced some of the original planning concepts, and said densify and so on. It was a reasonably good document. And we’ll probably talk more about this a little bit later as we talk about long range development plans—

**Reti:** Yes.

**Zwart:** But if you look at the land use map from the 1988 Long Range Development Plan—and these things are often looked at in isolation—we used to call it the lava lamp because it was just these blobs of color that just sort of floated anywhere—

**Reti:** (laughs)

**Zwart:** And unless you dug into it, you didn’t really understand the logic behind it. There was logic there, but you really had to dig deeply. And you didn’t understand that it grew out of some bigger, overarching vision. So I know that as we moved into what became the 2005 LRDP, working with Cooper, Robertson &

Partners, we said, “As we think about the final land use map, we need to do it in a way that conveys some of these ideas, rather than just as a bunch of blobs floating in the air.” And in fact, if you look at the land use map, we worked closely with them on it and they came up with some schemes. Just looking at the land use plan itself, you get a sense of a core of academic buildings and support buildings surrounded by housing buildings because they color-coded it in a more coherent way.

I think your question really will get me thinking in anticipation of our LRDP and planning interview. I think the campus just didn’t realize how important it was to have good habits in that regard. It just wasn’t in people’s consciousness. That’s one of the things that I’ve worked very hard on and my colleagues have worked very hard on over the years, is to get that kind of consciousness, get that into the front of people’s minds as they think about things, so that those questions are addressed and talked about. Too often when you get into bad planning habits it’s a matter of, okay, what do I need? And let’s imagine (since I mentioned it a few minutes ago this morning), the Social Sciences Building. Well, how much do I need? So you ask yourselves all of those questions and you get to a size of a building. And then the next question becomes: where should I put it? And that’s looked at as a decision just based on that, rather than, if you include that right from the start, then you think about what is it that I need? How can I solve the problem? Is it a single building? How does it relate to other things? And those questions are being discussed as the whole thing is being planned, rather than as the last question that you ask yourself in the planning process.

So even when those habits had fallen into disuse, the sheer physical presence of the campus and this remarkable, remarkable site had a real hold on people. You don't have to know anything about planning to respond at some gut level when you set foot on campus and you come here.

**Reti:** Sure.

**Zwart:** That we had going for us, and that was kept alive. One of the things we tried to do in the *Physical Design Framework* that I just worked on and will discuss more later was to make it clear that both of those things could work together. The planning approach that the campus has taken has always grown out of (in its best times at least), has always grown out of that gut reaction about what a special place this is. How do we articulate it? How do we talk about it? How do we codify it so that people are aware that it takes a conscious effort to preserve it and enhance it?

**Reti:** That's great. I think that's a good place to stop.

### **A History of Long Range Development Plans at UC Santa Cruz**

**Reti:** Today is July 22, 2010. This is Irene Reti and I am here for my fourth interview with Frank Zwart. Today we are going to be focusing on the LRDP and the other documents that have guided the planning history of UCSC. Frank, I know that the campus just finished going through a very long process of approving the 2005 LRDP, or rather the Regents approved it. And that began in 2003?

**Zwart:** Yes, it really started back in 2003. It's hard to believe that we're now really at five years from the date that we published the LRDP. Time does fly in the planning perspective.

**Reti:** So let's talk about what all is involved in that process of doing the LRDP.

**Zwart:** Yes. It's probably important [first] to talk a little bit about what a long range development plan is, and how we came to prepare this 2005 one. In the University of California, the physical development of each campus is guided by a document that the University calls a long range development plan. The guidelines for it set out in the University's Facilities Manual are fairly straightforward. Its principal goal is to establish or to propose a physical framework needed to meet academic goals. So the driver on all long range development plans always becomes—what's the nature of the academic enterprise that will fit on this particular piece of land? I think if you were to go in and look at the University's Facilities Manual you wouldn't see anything quite as straightforward as, "Every campus shall have a long range development plan." But from a practical point of view, *de facto*, every campus does have one. And it really does then become the guideline for physical growth on that campus.

So, for example, Regents' policy says that if there is an approved long range development plan, a chancellor can approve a site for a building as long as it's in conformance with the long range development plan. If there's not a long range development plan, each of those actions needs to go to the Board of Regents. So from a practical point of view, every campus has one. From a campus architect's perspective, it's an essential document to have a framework within which each



campus works. And the other thing that's so interesting, is that if you were to go in and look at long range development plans from the different campuses, while they would certainly be very recognizable things one to another, each of them is developed at that campus with some consultation from time to time with the Office of the President, and each one reflects the particular character of a campus. The physical design problems that Berkeley or UCLA faces are quite different than the ones that we face here at Santa Cruz, because of the nature of the sites. I think it's one of the things that the University of California has done extraordinarily well, in that within broad policy directions each campus can develop its own set of tools and its own identity. That's certainly the case in the world of long range development plans.

So when I go out and talk about the campus and how we think about planning here and talk about campus architecture, I always point back to the campus's first long range development plan. It's a document that was published in 1963. It projected or was based on an assumption that the Santa Cruz campus would grow to 27,500 students by 1990. It's clear, if you look at the land use plan in the first long range development plan, or the first master plan map, and look at the first of the residential colleges, Cowell College, you can see that the plan that's indicated on the LRDP map is pretty much what actually got built. So it's pretty clear that that planning effort and the completion of the Long Range Development Plan was being carried out in parallel with the design of the first college. Stevenson College, however, on the LRDP map is different than what actually wound up getting built, although the site is certainly there.

That LRDP established a lot of things that really have guided the growth of the Santa Cruz campus at its best for the intervening, now it's getting close to fifty years, it's hard to believe. People, especially student audiences, are shocked to hear that there was contemplation in the early sixties of an enrollment of 27,500 students here. But it's interesting—if you go back and read Clark Kerr's memoirs, that seemed to be the target enrollment for all three new campuses in the early sixties: Santa Cruz, San Diego, and Irvine. And I suspect (I'm not sure that Kerr actually says this in his memoirs), but I suspect that it grew out of a plan that had been done a few years before for Berkeley, looking at enrollment. And what's really interesting there is that Kerr says in his book that the enrollment figure of—I think it was 25,000 in that case, roughly of the same scale as the new campus LRDP's—that figure of 25,000 was based on studies of the Berkeley campus of class change times, of building heights, and how quickly, using elevators, people could get from one class to another. They determined that within the area of the built campus and then-current elevator technology that land could hold about 25,000 students. And then once of course Berkeley was at 25,000, then UCLA had to be at 25,000. Oh, I need to look at Kerr's memoirs. It might have been the other way. The study might have been at UCLA and Berkeley had to keep up. One or the other. The two big campuses were at 25,000. Then that became the target for the new campuses. I think that had a lot to do with the planning of the campus in those very early days.<sup>23</sup>

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<sup>23</sup> See Clark Kerr, *Gold and the Blue: A Personal Memoir of the University of California 1949-1967, Academic Triumphs, Volume 1* (University of California Press, 2001), pp. 113-188.

### **The 1963 Long Range Development Plan**

So that's the sticker shock piece of talking to people about the original, 1963 Long Range Development Plan. What is not as easy to convey in just one quick snapshot, like 27,500, is the degree to which the way that plan thought about the campus, or that the architects and planners who prepared that plan thought about the campus, affected everything we've done since then. It's really quite a wonderful document to read. It's extraordinarily well written, much better written than most planning documents today. There's a poetic sense to much of its language. And it's clear that the people who planned the campus were very moved by the physical setting, which is a not uncommon reaction, and they managed to put it in this document that affected the early days of the campus. Their early successes, I think, in creating this framework, in getting the first set of buildings to live up to the very lofty goals that the 1963 LRDP set, set a very high standard for those of us who followed.

I often joke that the campus planners did us enormous favors and set us enormous challenges at the same time. The favors that they did us was that they did a really good job early on. So I've never had to go into a campus meeting and argue for thoughtful design or good architecture. People understand that this is a very challenging and unique and sensitive site and that the buildings need to respect it and respond to it. But they did it in such a way that they made it look easy. So people don't really understand until they get into the middle of the process what a lot of thought and hard work it is to keep this natural setting of the campus and meet the campus's academic goals at the same time.

If you look at the list of architects that prepared that first LRDP, it really was a who's who of California architecture at the time. The lead consultant was John Carl Warnecke's office. Warnecke had a practice in San Francisco, and his firm went on to also have offices in Washington, D.C. It became a very prominent firm. In that firm was a young landscape architect named Michael Painter, and he had a big role in laying out the campus. But just looking at the opening sheet of authors [opens the document to the first page], the consulting architects included Anshen and Allen, a San Francisco firm that had done a lot of both residential and institutional work. Anshen and Allen designed the original science buildings on campus. The firm actually still exists today. They've been doing some work recently at Porter College. Theodore Bernardi—who was one of the principals of Wurster, Bernardi and Emmons—he was the architect for Cowell College. And Ernst Kump. Ernie Kump had a practice in Palo Alto for many years. Did schools at all levels, elementary and high schools and also community colleges. Probably before he got involved in planning the Santa Cruz campus, his best known college design was Foothill College just off of Highway 280. Kump's firm designed what we now call the Hahn Student Services building, originally known as Central Services, and Crown College. And the landscape architect, Thomas Church, Tommy Church, as he was familiarly called, [was] the grand old man of Bay Area landscape architecture. Many of the [landscape architecture] firms that went on to practice and thrive in the sixties and seventies had their roots in Church's office. And he wrote a very frequently cited memo about the campus that is referred to in the original Long Range Development Plan [of 1963] and is an interesting document in its own right,

where essentially he said, this building, this setting is magnificent. You can't reshape the land. It's going to be impossible to do that. The buildings need to be in a sensitive collaboration with the environment. That's been one of the guiding principles of planning here ever since.

The September 1963 plan set the tone for everything to follow. And in the series of Long Range Development Plans that have been developed by the campus since then and approved by the Regents, it's really been an evolutionary process much more than transformational. There have been no major changes in direction. The notion of sensitively fitting this academic plan and all of its surrounding necessities—that gets into housing and student life and everything else that makes up an American college or university campus—in a remarkable and unique setting. That set the tone and everything followed it.

There have been a series of long range development plans: 1963, 1971, 1978, 1988, and then the most recent one, which has a date of 2005 on it, was finally approved by the Regents in 2006. That's the one that now governs university growth. Each of them was responding to evolution in thought, an increased understanding of how the campus was going to work, based on an increasing amount of campus history, and then, of course, academic directions of the campus.

So for example, the 1963 Long Range Development Plan, in order to accommodate 27,500 students actually showed development of almost the entire 2000 acres of the campus. It established the term "Great Meadow." Most people who know the campus think of the Great Meadow as that meadow area that

sweeps east to west, all the way across the campus, starting on the east side in the meadows below the Cowell and Stevenson Colleges and the P.E. facilities and playing fields, across over Jordan Gulch to the meadows below what started off as the Student Center (today known as the Academic Resource Center), the Music Building, and University House, and then off to the areas below Oakes College. But in fact, if you look at the 1963 LRDP, the Great Meadow was really limited to the meadow area in the center of the campus, below what is now the Music Building, Academic Resource Center, and University House. But there were plans to develop almost entirely in the meadows below Cowell and Stevenson, and over below Oakes and Porter and College Eight.

One of the changes that we've seen over time, and I think it's a practical change, has been a densification of the core of the campus. In order to make best use of the physical resources of the campus you have to be able to get from one side to the other relatively conveniently. The campus, I think, probably starting even as early as 1971, in that Long Range Development Plan, understood that it had to be compact in order to be workable as a physical setting in a day-to-day basis.

**Reti:** But was there also a shift in thinking about preserving that entire section of meadow, as opposed to just the part in the center— Was this just driven by the need for density in the core areas of the campus and the understanding that that would be a more economical way of building, or was it also driven by a desire to preserve the meadow as a natural habitat?

**Zwart:** I think those two things went hand-in-hand. I couldn't say which was the cart and which was the horse. I think both of them were factors in that thinking.

### **Long Range Development Plans in the 1970s**

The 1971 Long Range Development Plan really moved to a systematic way of thinking about integration of systems that make up the campus—the land use, the circulation, the utilities and infrastructure, and so on. I think it had a similar target enrollment figure. I think it was 25,000 or 27,500. But I think the campus wasn't going to reach it as early as 1990. I think it was going to be reached in the mid-nineties or so.

But then in the mid-seventies everything changed. Throughout the University system, and especially here at Santa Cruz, enrollment leveled off. It was the Proposition 13 and post-Proposition 13 era. After the completion of Oakes College, the seventh college, in the mid-seventies, things really slowed down. I think I talked the other day about how there just wasn't much going on in those days.

And so the 1978 Long Range Development Plan was really a holding action. It didn't anticipate big growth. I think it assumed an enrollment of about 7500 students. And rather than developing an entirely new plan, it identified potential building sites and said what might work there from a functional point of view. But it really reinforced or restated the planning spirit or the planning principles of the first two documents. I'd probably describe it as being a set of siting decisions to be made, rather than the system to create. That worked okay in the late seventies or early eighties. Of course, that was before I came to the campus.

### **The 1988 Long Range Development Plan**

But in the mid-eighties it was clear that enrollment was picking up again and it was time to revisit the long range development plan, and to create a new one based on revised enrollment figures. And so work began on the 1988 Long Range Development Plan. The planner was Barbara Maloney, who was a Santa Cruz alumna. I believe she was working for Eckbo, Dean, Austin, and Williams, or EDAW, at the time. Work on this was getting started at about the time that I was hired at the university, so I wasn't involved in very much of its development. I *was* campus architect at the time the Regents adopted it, but it had gone pretty well along the road to adoption when I became campus architect.

It was preceded by a campuswide academic plan. And as I understand it (and I've heard this more anecdotally or conversationally than I have actually by going back and reading the academic plan), but the premise of the academic plan that was the basis for the 1988 Long Range Development Plan was that the campus wanted to become a full-grown interdisciplinary university of national distinction. To do that it needed a certain number of departments, academic emphases. Each of those, in order to have a faculty of a certain size to really count for something would require a certain student enrollment. And as you went through the numbers, the number of departments, the number of faculty, and then using the then-extant student-faculty ratios that were being used for the University of California, that came up with an enrollment of 15,000 students. So the driver, the target number of 15,000 students in the 1988 Long Range Development Plan, was a direct result of the academic planning that preceded it.



It looked at anticipated rates of growth. I believe it called for an enrollment of 15,000 students by 2004 and 2005. So that actually wound up being the extent of its life. It laid out a land use map for the campus very similar to what had preceded it, which was a core of large-scale, institutionally scaled academic buildings—libraries, laboratories, arts facilities and the like—that would serve a series of residential colleges surrounding it. It proposed some roadway extensions and expansions to make that happen. It proposed potential building sites in areas of the campus north of where the campus existed at that time, the northern edge of that was pretty much what's now the Baskin Engineering building.

That was developed and adopted by the Regents with a relatively large amount of public controversy. Going back to 1963, of course, the city and county of Santa Cruz had invited the Regents to establish a campus here, so there was a lot of civic support. But as the campus moved through the sixties and the seventies and people set up here and the character of the town really was changed by the presence of the university, there began to be a feeling in the community that the university was an element of growth that served the entire state, that it was a large institution in a relatively small community, and that the state was asking the community to pick up significant expenses in managing the growth that was the effect of the growth of the campus. That tended to be infrastructure—water and roads, plus impacts of housing. That's been a consistent theme of the frictions between the town and the gown; the city and the university. [The city felt that] the university wasn't paying its fair share for the costs that the county and the city incurred in providing the infrastructure necessary for it, or housing

and the like. Of course the university's position in all of that has been, "Well, that's the way that the state structures it. And we bring lots of benefits to the community that aren't as easily measured and that you're not taking into account in your calculations."

So there was, as I understand it, a lot of back and forth between the city and the county and the university, and the university's administration, in the development of the 1988 Long Range Development Plan. There were certain elements of the plan that were introduced in response to the community's concerns. For example, it stated a goal of attempting to house or set a goal of housing seventy percent of undergraduates on campus as way of mitigating the affect of student population in the community. (I can't remember which of these made their way into the Long Range Development Plan and which were in its environmental analysis.) But there was enough in that back and forth that, while the city council wasn't entirely happy with 15,000 students, they felt that the university had come far enough away that there were no lawsuits filed over the development of the 1988 Long Range Development Plan. The community thought that it had gotten about as much as it could from the university, from the Regents. So that moved forward and was approved without litigation.

Now, backing up to what a long range development plan is—any planning exercise, certainly in a long range development planning exercise, is based on certain assumptions, and assumptions in the planning world are based on projections of the future. In the mid-eighties when the 1988 Long Range Development Plan was developed, there was robust growth throughout the system. Baby Boom II, or the bounce back effect of the original post-war baby

boom was anticipated. Lots of people were expected to come. So the 1988 LRDP proposed pretty consistent growth from 1988 through 2005, its target date.

Somewhere in the Office of the President is something that somebody prepared eight or ten years ago that they called a Humility Chart.

**Reti:** (laughs)

**Zwart:** (laughs) Looking at a statewide basis, it lays out the enrollment projections for the University of California versus what actually occurred. And the one thing that the Humility Chart demonstrates is that all of those projections were wrong. Sometimes they're too high, sometimes they're too low, but what actually happens is different from what the projections say. You've got to have something. You've got to do the best that you can. But I think that the reason somebody christened it the Humility Chart is that as you put these projections together it helps you keep a sense of perspective about looking to the future. So in fact the growth that got us from 1988 to 2004 and 2005, was not as smooth as would have been predicted. The Regents approved the 1988 Long Range Development Plan in May of 1989. A lot of construction was underway even as that was happening. As I recall, College Eight was under construction, as we know it now. Because the first set of residence halls and the dining hall for that opened in the fall of 1989. And I remember that because it was just before the Loma Prieta Earthquake, which is a real temporal landmark in my time as campus architect.

What else was underway? I believe the design of the Earth & Marine Sciences Building was approved at the same meeting at which the Regents approved the

1988 Long Range Development Plan. Design work was underway on the Science Library. So there were a number of projects in the pipeline. I think we talked last time about Colleges Nine and Ten, and I think work on that was underway in May of 1989, at least design work on that was underway. And those were all based on the assumption of pretty smooth and pretty consistent growth between 1988 and 2005.

What happened was not that at all. And again, I think we talked a little bit last time about a slowdown in enrollment in the early nineties.

**Reti:** Yes.

**Zwart:** And I think that was in part a reaction to the Loma Prieta Earthquake. I think some people left town, though I don't think those numbers were quite as dramatic as the people leaving town as a result of the economic slowdown in the early 1990s. So again, I don't remember the exact numbers, but if you were to look at a graph of the university's enrollment growth, particularly if you compare it with the straight line that was projected between 1988 and 2005, you could see a flattening out of enrollment in the early 1990s. I think that was one of the reasons, for example, that the housing at Colleges Nine and Ten that we talked about last time was delayed for several years. The enrollment just wasn't there to support it. We were playing catch up on academic space, but again, because you pretty much have to have the students enrolled and showing some willingness or inclination to live on campus before you can actually build the housing, as those student enrollment numbers leveled off—well, as we talked

about last time, the apartments for College Nine were canceled or deferred, and things didn't pick up again until the later 1990s, until about 1996 or 1997.

So, in the mid-nineties, we didn't know when we might hit the enrollment target from the 1988 Long Range Development Plan, that target of 15,000 students. We thought that it might stretch out to 2010, 2011. And then all of a sudden in the mid-nineties, again, not unique to Santa Cruz, but systemwide, enrollment took off with a bang. I've never heard or read any real explanation of it. It might have been something as simple as the overall economy was getting better and people felt more optimistic about the future. All of a sudden there was a big uptake. If I remember correctly, Richard Atkinson was president of the University. And a letter went out to all of the chancellors. I don't remember exactly what it said, but the way I think about the letter is it said something along the lines of, "Here they come. Where are you going to put them?" It was asking each campus to report on its readiness for this rapid upturn in student population. As it happened (again going through that full 1988 to 2005 time-frame), we actually got to 15,000 students right around 2004, 2005. I don't remember the exact year. So the average growth rate actually wound up—the projection from 1985 proved to be pretty accurate. But the way we got there was much more accelerator-brake, accelerator-brake than the way that we had thought. As we saw ourselves getting close to the time of 2005, the lifespan of the long range development plan (I think this was probably now in the mid- to late nineties that this was happening), we became aware that we were going to have to get going on a [new] long range development plan.

### The 2005 Long Range Development Plan

There had been a series of administrative changes on the campus in the mid-nineties that become part of this story. Robert Stevens had left as chancellor after a very short tenure. I think he arrived as chancellor probably in about 1987 or 1988. I think his tenure was about four years. Then he left in a hurry, and I'll let other oral histories describe the circumstances under which that happened, because I really don't know them. (laughs)<sup>24</sup>

The president's office (I think David Gardner was the president), sent down as an interim chancellor, Karl Pister, who had been the former dean of engineering at Berkeley, who had a long, very distinguished career as an academic administrator at the Berkeley campus. His initial appointment was, I believe, for two years. And at the end of the two years, as I understand it, the campus let the Office of the President know that he had been doing a very good job, that he brought some stability to the campus, and could we keep him a little longer please, I think was the nature of the message. Karl's appointment was then extended for another two years. So if I remember correctly, Karl was here as chancellor for four years.<sup>25</sup>

And it was interesting, because the first Regents meeting that he attended, we had presented the Music Building designed by Antoine Predock for design

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<sup>24</sup> See Randall Jarrell, ed. *Robert Stevens: UCSC Chancellorship, 1987-1991* (UCSC Library Regional History Project, 1999) <http://library.ucsc.edu/reg-hist/stevens>

<sup>25</sup> See Randall Jarrell, ed. *Karl Pister: UCSC Chancellorship, 1991-1996* (UCSC Library Regional History Project, 2000) <http://library.ucsc.edu/reg-hist/pister>

approval. At the previous meeting, the Grounds and Buildings Committee had not liked Predock's design, so we took it back and worked with Predock and his office to revise the design. We were making a presentation to this group of this revised design. We had to brief a new chancellor on it, and how it had come to be on that site, and the evolution of the design and so on. He was at the meeting to introduce the project and to say that it had his complete support. As we were waiting to go on and to make the presentations for the project, I was making small talk with him and was talking to him a little bit about the campus plan and the campus history, and I got to talking about the pedestrian bridge that connects McHenry Library with the Hahn Student Services building. It was the first of the campus's pedestrian bridges; it was a wooden trestle bridge. I mentioned to him that it had been designed by a structural engineer named Stefan Medwadowski, who apparently went on to develop quite a reputation as a first-rate structural engineer in the Bay Area. And there was a twinkle in Pister's eye and he said, "Stefan Medwadowski was my first graduate student at Berkeley."

**Reti:** Oh! (laughs)

**Zwart:** And then it turns out that in working with Esherick, Homsey, Dodge and Davis on Colleges Nine and Ten (or maybe it was on the Science Library), Chuck Davis, when he learned that Karl Pister had taken over as chancellor, he said, "Oh, he was a professor of engineering at Berkeley when I was in architecture school. I took my surveying classes from Karl Pister." So it's very funny how all of these things tie together.

Pister brought in one of his former colleagues from Berkeley, Richard Bender, who had been dean of the College of Environmental Design, to put together (and I think I'll talk about this a little bit later), to reassure the campus that planning was in good shape, planning was in good order on the campus, and to put together an implementation program to talk to the campus about how the 1988 Long Range Development Plan would actually be put on the ground. I think I'll talk about that in a little bit more detail once we get through our procession of long range development plans.

Pister stepped down as chancellor. I think he announced his plans to retire in 1996. We had an interim vice chancellor of business and administrative services, who was my immediate supervisor. Well, there had been actually a couple of them. Wendell Brase, who had been the vice chancellor for, I think it was called business and finance in those days. He had been the vice chancellor at the time of the 1988 Long Range Development Plan and much of the planning had actually gone on in his office. He was very hands-on, interested in physical planning, interested in the physical development of the campus. He left Santa Cruz I think in late 1991, to take a similar position at UC Irvine, and he's been there ever since. His successor, Ed Coate, was here on campus probably from (I'm guessing these dates now), but from about 1992 to 1994 or 1995. Then we had an interim vice chancellor for business and administrative services, Jim Sullivan, who had actually held similar positions at Riverside and Davis before retiring. He came out of retirement to work in an interim capacity here. He oversaw the completion of the implementation program and a few first steps into the implementation of the implementation program.



And then a permanent vice chancellor was selected sometime I think in the spring of 1996. Tom Vani, who had held administrative positions first in housing at UCLA, and then in housing and in business services at Berkeley, came down to become vice chancellor of business and administrative services in 1996. That coincided with the selection and appointment of MRC Greenwood as the chancellor in 1996. And so really, in the middle of 1996, we had a whole series of new administrators. We had a new administration taking hold here on the campus.

MRC had come down from the Davis campus and she had very much a go-getter attitude. She really did a lot of cheerleading on behalf of the campus. She put together, shortly after her arrival, the Millennium Committee, to look at what UC Santa Cruz was going to look like in the new millennium, and talked about a variety of topics where we might go academically. We were asked to put together a presentation on the physical planning of the campus for the Millennium Committee. One of the things that MRC wanted to convey, and something that I think is very important to be conveyed on any college or university campus, is that when construction starts on a project it's not because the chancellor called the campus architect a couple of weeks before and said, "I want you to build something there."

**Reti:** (laughs)

**Zwart:** (laughs) There's a long process that goes into that. Understanding that process, explaining that process, communicating that process—from the large scale, whether it's an LRDP, to the decisions about an individual building

became a major part of my role as campus architect. I think that's a very important role, to make that part of a campus consciousness, that decisions are made for a reason, that there's a process in place.

That all led up to a heightened awareness of planning on the campus and the importance of planning on the campus. I think that's an evolution that the campus has gone through that I'm very pleased that it's gone through, and was very pleased to have had a role in contributing to during all that time.

**Reti:** So you are talking about changing a culture, in a sense.

**Zwart:** Well, it has less to do with changing a culture. It's probably articulating a culture, bringing it to consciousness. I was thinking about this as I walked over for our interview this morning. You know, one of the great things about the campus is its immediate emotional impact on first-time visitors. The first time people set foot here they can't believe it's a college campus. In fact, I was absolutely thinking as I walked over—I don't remember exactly when this was. It would be easy enough to find out, because it was the weekend that the San Francisco Forty-Niners were playing the Miami Dolphins in the Superbowl. And the reason I remember that is that I had visitors; I had Italian relatives by marriage visiting, their first trip to the United States, and they were visiting me in Santa Cruz. And they were delighted to learn that the Miami Dolphins and the San Francisco Forty-Niners had Italian quarterbacks. Dan Marino and Joe Montana. They were excited about that.

So I remember that the Morasuttis were here on that weekend. I took them up to the campus. The redwood forest environment is something that they had never

seen. This is hard to convey in an interview, but we were walking through the redwoods and they were just looking up and spinning around because they'd never seen anything like it. And it was that sort of delight in this physical setting, that— That moment captured me. I think lots of people coming here for the first time often experience that. That's true today.

People think that the campus is easy to understand because it has such an immediate impact, when in truth of fact, as both a physical setting and as an academic institution, it's a place that's very slow to reveal itself to you. It takes a while to understand it. [I was thinking] as I was driving up to the campus this morning, going through an area of developed campus by Cowell and Stevenson Colleges and the Humanities Building, and then looking up and seeing College Nine in the distance, and then driving through a wooded area—this is not a campus where you can get a sense of the whole just by standing in any one place, or by taking a simple walk. It's a campus that reveals itself to you over time. I think that's true both institutionally and physically.

My major effort in the six or eight months before I retired was developing a physical design framework for the campus, and I'll talk about that in a future interview. But I think in a funny way (and this is going back to my humanities training), the way that we developed the campus that as you move through it you have surprises of—well, I didn't expect to find *that* here—I mean, it's like Dante moving through the Inferno and the Purgatorio and the Paradiso. There are discoveries at every step of the way that say something about his life. And so in a way, a physical movement through the campus can be a metaphor for the intellectual development that occurs here, for a student, or for a faculty

member—where you follow a particular trail and you find something unexpected or delightful, or you follow a more routine trail and you find something you hadn't thought of before. This is a campus that you really need to wander around to get to know, and to have its full impact on you.

I think people understand that at a gut level once they've been here for any length of time. But it's a real effort to try and articulate it, to put it into words, to give it some physical shape. I think that's one of the things that the 1963 Long Range Development Plan did very, very well. It's one of the things that we tried very hard to do in putting together the *Physical Design Framework* that I'll talk about in more detail, that we just presented to the Regents earlier this year. It's really trying to let people know that yes, that set of characteristics has been important to the campus and to the campus community all along, and we've thought about it, and here are some of the conclusions that we've drawn. I hope the more that we can keep that alive in the way that people think and talk about the campus, the better it bodes for the future development of the campus.

**Reti:** So before we were talking about the spinning and the redwoods and the sense of the place here that is so powerful here at UCSC, we were talking about the Millennium Committee that MRC Greenwood had set up and the process that was going on at that point.

**Zwart:** And this was at about the time when the Dick Atkinson letter on—"here [the student enrollment surge] they come, what are you going to do about it"—came around. All of the campuses were struggling about what to do. The foot had been on the brake for a couple of years, and all of sudden not only was it

going to the accelerator, it was going to the accelerator and the accelerator was going to the floor. So we needed to really get serious about it.

### **Campus Planning and the Overall Campus Structure**

This is probably a good time to talk a little bit about how planning fit into the overall campus structure. I mentioned probably a couple of times that the 1988 LRDP was developed mostly in the office of the vice chancellor for business and administrative services, because this was when Wendell Brase had that role, because he was very interested in that aspect of things. I remember shortly after I was named campus architect I was having a conversation with Jack Wolever, who was my predecessor. He suggested that I go have a talk with Vice Chancellor Brase and say, "Wendell, let's get straight where physical planning is going to happen on the campus." Maybe I should distinguish— When we talk about campus planning, when campus architects use the term "campus planning" they focus primarily on the physical development of the campus— where buildings go, what kind of design guidelines are there, how do we lay out the infrastructure—all of that sort of thing. Equally important, maybe even more important in the world of campus development, is capital planning, which is: how does it get paid for? So there's the role of capital planning, which is the money side of things; physical planning, which is actually where does it go; and then the design and construction side of things—getting the individual projects, the individual buildings designed and built.

And how a campus organizes that sequence of events—from capital planning, to physical planning, to design and construction—varies enormously. One of the

first things that I did when I was named campus architect was to visit some of our sister campuses, and visit some of the people with the title “campus architect” at other UC campuses. In that trip I visited colleagues at UC San Diego—Boone Hellmann was the campus architect there, and UCLA, where the campus architect was Duke Oakley. Both of them have become very good friends and professional colleagues over the years. Although they both had the title “campus architect,” their responsibilities on their respective campuses were quite different. Typically, campus architects aren’t in charge of capital planning, but they may or may not be in charge of physical planning, and they may or may not be in charge of design and construction. So at UCLA, for example, [Charles] “Duke” Oakley’s role as the campus architect was overseeing the physical planning of the campus. He was in charge of developing the LRDP, developing the area plans or master plans that supplemented it, and picking the architects intended to execute it. But at that point, once the architect was picked, the project got turned over to a separate project development office that Duke was not responsible for.

San Diego was just the opposite. There was a separate office that worked more closely with capital planning and was also responsible for the physical planning of the campus. And Boone Hellmann, the campus architect at San Diego, didn’t get involved in a project until it became time for architect selection. And then his responsibilities had to do with getting the building designed and constructed. So although they both had the title “campus architect,” the overlap of their roles on their respective campuses really was just architect selection. Now, I’m sure I’m grossly oversimplifying this because I don’t have any doubt that at UCLA Duke

got consulted as things were moving into design and construction, and that at San Diego Boone had something to say about the development of the plans. But just as far as the organizational structures themselves, there was just that little overlap. And then at UCLA, over time, as Duke's role evolved, he gradually assumed responsibility for design and construction as well as for the master planning of the campus.

So Jack's advice, as I said before, was to approach Wendell Brase and say, "Let's get it straight. Where is physical planning going to occur on campus? If it's going to be in your office, that's fine, that can work. But then change our name to design and construction so we're not confusing people. Otherwise, let me have it." "Jack," I said, "I'm not willing to ask that question. Because I'm afraid I'll get an answer that I don't want to hear." I said, "I think it's important for purposes of continuity and to have the appropriate set of skills brought to bear on the campus, for a campus architect to have responsibility for the physical planning of the campus and then for the execution of the individual projects. My preference would be to slowly" (and we had actually been involved in some minor planning studies on the campus), "my preference would be to have a role in that, to build the campus's confidence, so that ultimately all of the physical planning would come under the position of the campus architect."

And that is in fact what I did, and I'm very pleased to say that that is what happened. After Wendell left and after the implementation program got going, there was involvement of other campus offices other than Physical Planning & Construction, but Physical Planning & Construction always had some role in it. And with a series of personnel changes and people coming to the campus and

leaving the campus and so on—I don't remember exactly when this happened, but not terribly long after Tom Vani arrived as vice chancellor, probably within a couple of years, it actually became formal—Physical Planning & Construction was given the authority to recruit and hire a campus planner that would be part of Physical Planning & Construction, and who would report to the campus architect. So all of that was consolidated and that's the way it remained for the rest of my career, and the way it is today. That's a scenario that I was very comfortable with.

### **The Collaborative Relationship Between Physical Planning & Construction and Capital Planning**

The other thing I think is important to talk about for the Santa Cruz campus is the working relationship between Physical Planning & Construction and capital planning. There are campuses where those positions report to entirely separate vice chancellors. That is, in fact, the way it works here. Capital Planning reports to the budget vice chancellor; Physical Planning & Construction reports to the business vice chancellor here. But in some cases that results in something close to bureaucratic warfare between the two entities. I've had conversations with campus architect colleagues at other campuses expressing a lot of frustration about how that relationship works. I'm really pleased to say that that's never been a problem at Santa Cruz. There have been changes in the reporting relationship over time. Maybe four or five years ago Capital Planning and Physical Planning & Construction both reported to Vice Chancellor Vani. Then that got changed back with some organizational structure in the central administration. But the fact is that somehow Physical Planning and Capital



planning have always had significant respect for each other. And while there is inevitable tension (which I will convey to you in an anecdote in just a moment), we've worked very well together. I've always felt that [UCSC's] capital planning [office] was on our side and interested in getting the same thing for the campus, and I think they'd say the same thing about us.

The anecdote I was going to tell you was—the campus's last capital planner (and she was on the capital planning staff when I joined the campus) was a woman named Fran Owens. We would meet (and this may have helped the working relationship) regularly, weekly or bi-weekly with the budget vice chancellor and the business vice chancellor to coordinate activities and strategize and so on. And at one of those meetings, Fran and I were both there. The campus had just hired a new dean of engineering, Steve Kang, who went on and is now the chancellor at the UC Merced campus. Steve had just arrived on campus and was making the rounds and meeting people. He came to one of these meetings. I think we probably had a project in the pipeline for engineering at that point. So we were making introductions. By way of explaining to Steve our respective roles I said, "Fran gets the money and I spend it." And quick as a whip Fran said, "Yeah. And I never get enough and he always spends too much." (laughs) It was an absolutely a perfect description of the inevitable working relationship between a capital planner and a campus architect. She said it with a smile and I've always told it with a smile, but that sort of condenses how that works.

But I think one of the reasons why the campus has had the successes that it's had in moving the campus forward is that we've managed to work very collaboratively with the capital planners. And maybe that goes back to the time

under Vice Chancellor Brase when he oversaw both Capital Planning and Physical Planning and we got working together there. One of Fran's predecessors, Bruce Lane, was actually trained as an architect, and had worked in the Physical Planning & Construction office. I don't know what really accounts for it. But I think it's one of the things that I hope doesn't change about the Santa Cruz campus. It's hard enough under the best of circumstances to do a good job of developing a campus as complex as this one. To have to fight internal warfare along the way just doesn't make any sense at all. That's never been my experience. I've always valued the working relationship that I've had, and that our office had, with Capital Planning. Inevitably there have been times where they didn't enough money or we spent too much, but we somehow we always got through it, because I think each group knew that the other was working in the best interests of the university. So I hope that continues.

### **Building a Physical Planning & Construction Staff**

Backing up to the organizational history—in the late nineties, we were able to recruit and hire a campus planner. Things were getting busy. We had outgrown our space. And so the campus allowed us to secure some off-campus space for a planning office. In all of that interim stuff, a very important player in all of this is a guy named Dean Fitch. Dean had worked for many years on the grounds crew in the Physical Plant department. He was very interested in landscape architecture and design. He, on his own nickel and using his own time, taking advantage of—I think it was through an extension course series that UC Berkeley Extension offered in landscape architecture—took a series of courses that met the coursework requirements for credentialing licensure as a landscape architect.

Licensure as an architect or a landscape architect in California requires an apprenticeship period where you work under the supervision of a licensed architect. Dean actually came from Physical Plant to work in our office as a project manager to get that experience, and went on to become credentialed as a landscape architect. He then went back to become the supervisor of the grounds department. And when planning activity picked up again, we managed to attract him back as a planner on our staff, where he's been ever since. He's played an absolutely key role. He was actually the project manager for the 2005 Long Range Development Plan. And he has just been an invaluable resource to the campus because he knows it so well, and he's absolutely dedicated to it. I was hired in May of 1985. I think Dean predates me by four or five years. So he's got significant tenure with the campus. He's really just an unmatched resource, both in this commitment to the campus, his love for the campus, his technical ability, and his knowledge of the campus. So Dean was involved in this planning effort starting in the mid- and late nineties.

We did a recruitment for a campus planner and wound up with two very strong candidates, with very different backgrounds. Charlie Eadie was an alumnus. I had known him as an undergraduate. In fact, he and I had lived in the same dorm during my senior year. He had gone on to study journalism and planning and he'd been a planner for the city of Santa Cruz for many years. At the time of this recruitment in the 1990s, probably 1999-2000, he was a planner for the city of Watsonville. He'd been very active in the reconstruction of downtown Santa Cruz after the Loma Prieta Earthquake. He was on the city planning staff at that point. So he expressed an interest in coming back.

The other was an architect named John Barnes. I had heard about John as a possible member of our staff from a couple of people. Chuck Davis from Esherick, Homsey, Dodge and Davis had worked on something with John. I don't know where they actually crossed paths, but he thought very highly of him. Richard Fernau, who, as I mentioned the other day, was the architect for our Student Center and went on to become a member of our Design Advisory Board, had spoken highly of John. And at the time of this recruitment John was working as a project manager for the San Jose Redevelopment Agency, in charge of a very interesting project which I have yet to actually go visit, a library that was shared between San Jose State University and the city of San Jose. That was being designed by a pretty prominent architect from Minneapolis, Gunnar Birkerts. John was the project manager on behalf of the redevelopment agency for that project. John was a licensed architect. He'd gotten an undergraduate degree at Harvard College and a master's in architecture at UC Berkeley. He trained and licensed as an architect. He came up from the project management side but was interested in the broader planning issues.

We had several other candidates, but these two people really stood out. As we put together a planning office, we figured out a way to be able to hire both of them, taking advantage of John's strength as a project manager. So Charlie was actually hired into the position of director of campus planning (I think that's right), or director of campus and community planning. But we brought John in and had him divide his time between project management—and he was involved in the early phases of the Infill Apartments project, which added student apartments at Cowell, Stevenson, and Porter Colleges. He was involved for a

while on the working drawing phases of the Physical Sciences Building because the project manager who had carried the project up to that point had left the campus. And so because that was going to generate some revenue to pay John's salary, we also had enough planning projects to support the other half of this position. I have to think that that was one of the most fortunate and one of the best moves I ever made, because both John and Charlie contributed significantly to getting the planning office up and running. John remains on the staff today. He's assumed my responsibilities as campus architect after I left. He is a very capable guy. I feel very confident in his abilities to do the job.

So with that core in place, with Charlie as director of campus and community planning. [We gave John Barnes the title of] principal planner for architectural and site design. And Dean Fitch as the landscape architect and planner.

We also had—backing up to the 1988 Long Range Development Plan—one of its commitments to improving the way that the university was doing business and looking after its environment, was to create an office of environmental professionals on campus, who would do our analyses required by the California Environmental Quality Act. And that early on adopted the name of the Environmental Assessment Group. They had a couple of trained planners in there. Chris Aldecoa was the woman who did that job for many, many years. That actually became a part of our planning office as well. Graham Bice had been a part of that office for a while, although he then went off to oversee some of the projects at the Fort Ord UC MBEST operation. And so, with Chris Aldecoa, and then a series of planners who supported her as the Environmental Assessment Group, John, and Charlie, and Dean—that became the core of our campus and

community planning office. They set up for a while in rented office space down on Swift Street. They had a big conference room there. That worked adequately but it was a drag having to move back and forth between the two.

### **Growth and Stewardship**

But with that cast of characters in place we were ready to meet the challenge of Dick Atkinson's letter that said: "Here they come. Where are you going to put them?" There were projections of a sudden increase in enrollment. I told the story, I think last time, of our return from our honeymoon in 1996 where students had come back and we were out of space. We knew we needed to get serious about providing housing for students in a very quick way.

So one of the first things that the planning office did was to take a look at the 1988 Long Range Development Plan, its provisions for housing, and to start to look at ways to develop the North Campus. The 1988 Long Range Development Plan had several areas north of the already developed campus, and if you imagine a line from the Crown-Merrill apartments across to Colleges Nine and Ten, across to the Baskin Engineering Building, across to the north end of Kresge College and the trailer park—that was the northern limits of development. The 1988 LRDP had some areas to the north of that that were designated for housing and for other functions. So we started working with a planning group. We went through a selection process and hired Sasaki Associates from San Francisco to take a look at how the North Campus might be developed and to get going on that. And this was moving forward in parallel with our developments at Colleges Nine and Ten, which was actually getting us some housing.

There was a lot of concern on the campus about going into the north and what that would mean. I mentioned earlier MRC Greenwood's arrival as chancellor, and the development of a presentation to the Millennium Committee in order to articulate both the planning principles of the campus, the planning consciousness of the campus, the planning processes of the campus. And that one I do remember was done with a pair of slide projectors, the way all good architectural and art history lectures were done up until the invention of PowerPoint.

**Reti:** (laughs)

**Zwart:** We worked on a presentation. We talked about growth and stewardship. Growth and Stewardship became our mantra. We called it the Growth and Stewardship presentation that talked about campus planning history and how it was going to move us forward. That became the title of this working group to look at the North Campus. It was called the Growth and Stewardship Task Force about how do we move to the north, and in doing so, carry with it the principles and practices that had guided development of the campus so far.

So a lot of work was done on that. We did a lot of environmental analyses, understanding the environmental setting. We knew we were going to need that in order to make sure that the planning assumptions that were embodied in the 1988 LRDP still made sense. That actually wound up being a very good first step for what then became the 2005 Long Range Development Plan, understanding what was in the North Campus in a lot more detail. There had been some very rough baseline studies done up there at the time of the 1988 Long Range

Development Plan. But the Growth and Stewardship Task Force allowed us to take a closer and more detailed look up there, which proved to be very useful.

What happened though, as Growth and Stewardship moved forward, is that we actually started looking at costs. And the real challenge is that part of campus didn't have infrastructure extended to it. And the campus just couldn't crack the nut about how do we actually make the investment in infrastructure to go up there. So while a lot of good planning work was done, and some very interesting alternatives that then informed the long range development plan were done, the Growth and Stewardship study itself really became a step on to something else. It didn't lead to any immediate project, but what it *did* do was get us thinking and working on getting a Physical Planning office integrated into Physical Planning & Construction.

One of the other things that I remember—again in talking to campus architect colleagues at other UC campuses—Ed Denton, who oversees those functions at Berkeley, was talking about some processes they put into place as part of a planning process. I think this may have led up to one of their vision presentations for the Regents. He laid out in a meeting of campus architects how they went about it on campus, and the committees that they consulted, and how they moved a project through the bureaucracy that is UC Berkeley. It was very well thought out, very clear, made a lot of sense. I was impressed. And somebody said to Ed, “So how does your staff like this?” He said, “The planners love it because they are process-oriented, and the project managers hate it because they are results-oriented.” (laughs) That temperamental difference between those groups of people can trip you up if you're not careful.



One of the great advantages that we had in the particular group of people we brought together to create the planning office, is that they were very interested in process. If you talk to John Barnes, at the beginning of a project he really wants everything laid out so everybody understands what's going on and there are good, clear communications. But he's also a project guy. He will not be satisfied with a plan that just looks good as a plan but then can't be executed or implemented later. And the same thing is true about Dean. Dean comes not only from a project side, but from an operational side. So he understands what all of these plans lead to, and how those issues and those challenges and those pieces of the puzzle need to be taken into consideration early on in developing a plan.

One of the great pleasures of working with that group of people is that they're very sensitive to the issues of the people who are actually going to have to see it designed and built and operated, at the very earliest stages of the process. And because they're able to do that, they're able to work with the people who under other circumstances might be so results-oriented that they wouldn't have any patience with planning. And by that I mean the architects and engineers who are on the project development staff. We bring them in. We try to get them into the process early on in the planning stuff.

I think one of the advantages of the relatively small size of the campus is that we do work closely together. Charlie Eadie's tenure as director of campus planning was about four or five years, and then he moved on to take another position. I think it was with the Redevelopment Agency in Watsonville. Then John took over supervision of the entire planning enterprise. And with some changes in space assignments on campus and a little squeezing down we were able to bring

the planning group back on to the campus. And while we missed the very nice conference room that the planners had in their space down on Swift Street, where lot of good work on the LRDP was done, to have them actually bumping elbows every day with me, with project architects, with the support staff, the engineers, that's really helped the idea that this has to be a continuous enterprise—from initial inception of a plan all the way to turning over the project to be operated by Physical Plant. So we're now at the end of the twentieth century, and the beginning of the twenty-first, right around the millennium.

### **More on the 2005 Long Range Development Plan**

**Reti:** Today is Wednesday, August 4, 2010. I'm here with Frank Zwart at the Science & Engineering Library and today we're going to talk some more about long range development planning, and get into the 2005 Long Range Development Plan, specifically.

**Zwart:** Well, I think when we left off last time I talked a little bit about putting the people in place to start planning for the campus. I think we were at a point in enrollment growth where the campus understood it was time to plan another long range development plan and look fifteen or twenty years into the future. So a good deal of what we focused on at that time, I mean well before we actually sat down and said we're starting the LRDP, was to get the campus ready for it. I think I talked a little bit earlier about when MRC Greenwood arrived as chancellor and she worked with the Millennium Committee, she wanted to make sure that the campus understood that she just didn't get on the phone to the vice chancellor, and the vice chancellor didn't get on the phone to the campus

architect and say, "Build something there," and the following Monday the bulldozers were out.

**Reti:** (laughs)

**Zwart:** Planning was a long, thoughtful process that involved lots of people and a lot of coordination of activities and a lot of long-range viewing. So we were meeting regularly with Vice Chancellor Vani and with other planning bodies, particularly the capital planners. They get the money and we spend it, is how that goes in the university administration. So as we talked internally about it, both within the planning office, Physical Planning & Construction, and with Vice Chancellor Vani. I remember Charlie Eadie, who was still on the staff at that point saying, I think several times (and he was absolutely right), that we expected some community concerns and even community opposition when we did the LRDP, but we also needed to make sure that we had the campus well informed as to what was going on. We also had to work very carefully in making sure that the campus constituency understood and supported what we were doing. So we had a lot of work to build on. I think I talked a little bit last time about the fact that late in the term of the 1988 Long Range Development Plan, which looked out to 2005, enrollments started going up much more quickly than had been occurring in the middle of the time [period covered by the 1988 LRDP]. So we felt that there was some time pressure, and we didn't have time to do everything in perfectly sequential order. We knew we were going to have to do some things simultaneously.

So Vice Chancellor Vani put together a working group which he called the Framework for the Future Task Force. And its charge, prior to actually starting work on the Long Range Development Plan, was to put in place the internal campus mechanism that would be used to develop the Long Range Development Plan. And if you look at the language in the University's Facilities Manual which describes long range development plans, it says something along the lines of, it's a physical planning framework needed to achieve academic goals. So ideally, an academic plan and the academic intentions of a campus will drive what comes out of a long range development plan. That said, the process—and this applies to lots of what we did in Physical Planning & Construction, whether it's developing a plan or designing a building—it's possible that academic directions and intentions can change even faster than the process of putting the building or the plan in place. It's not a purely linear fashion. And it's also clearly the case that some of what comes out of the planning operation can inform what happens on the academic plan. In talking about this topic to people and getting them thinking about it, I would use a sort of absurd comparison: Let's imagine that Columbia University was going to be working on some master planning (I'm sure they have)—it's unlikely that the physical setting or that the plans that they find themselves in, would lead to the beginnings of an agriculture school. What you have as a physical setting affects what you can do.

**Reti:** Absolutely.

**Zwart:** It really is an iterative process but you simply don't want them disconnected. You don't want academic planning going on in one area and

physical planning in the other, and then all of a sudden you wind up with some conflicts or some crashes.

And the other example that I use (and I may have mentioned this in one of our earlier discussions), is, given that a long range plan is going to have a ten to fifteen to twenty-year life, it's pretty difficult to anticipate what might happen in those twenty years. Looking way, way back (and this is again a funny example, but it's a good anecdote), when Cowell College was designed back in the 1960s, this was long before there were desktop computers. Typically academic institutions had steno pools. Professors would do the rough copy and then turn it over to a steno pool to type and reproduce and mail and so on. And it's my understanding, and I learned this from our electrical engineer, that when Cowell College was built, it was built with a dictation system so that a faculty member could pick up a microphone in his (and in those days it was mostly his), but in his or her office, and dictate something and it would transcribe in the steno pool from which they could type it. The story also goes that only one professor, a philosophy professor named Maurice Natanson, ever used it. It was a piece of technology that never caught on. However, the conduit that those wires ran in proved to be very convenient when it came time to put computer wiring into Cowell College. So that was [an example of how] at a building level you can't anticipate what's going to happen.

If you go and look at the 1988 Long Range Development Plan you won't find any mention in it of an engineering school. But within the lifetime of the 1988 Long Range Development Plan, the Baskin School of Engineering got started. And yet, the framework set forth in the [1988] Long Range Development Plan was flexible

enough and broadly drawn enough that it could fit into the academic goals.

So what you really want to make sure of is that the physical plan doesn't prevent academic intentions from happening because of something in it. There are always going to be small adjustments as you go along.

### **Strategic Futures Committee**

**Zwart:** So as we were moving up towards the beginnings of what became the 2005-2020 Long Range Development Plan, making sure that everybody involved and people on campus understood that this relationship was a strong one was very important to our process. By the same token, this is an academic institution, and academic institutions can take a long time to come to a conclusion, because they are so heavily consensus-based. So the concern was that if we turned to the central administration and said to the Academic Senate, "We need an academic plan," we might be waiting way too long. It just could take forever before we could start the physical plan. So the notion was, how do we mesh the two? The two really needed to go forward in parallel.

So, as I said before, Tom Vani pulled together a task force that was called the Framework for the Future Task Force. We worked with a consultant from Berkeley called Moore Iacofano Goltsman, or MIG. By training they are architects, landscape architects and planners, but they have a lot of experience in facilitating planning workshops and planning meetings. So we worked with them to lay out a series of meetings with this task force. The task force included senior administrators and senior academic administrators, and representatives of the academic senate, although it wasn't formally constituted as a senate

committee. But there were some fairly senior players in that. And the discussion was not, what is the academic program going to be? The discussion was, how do we move forward planning on an academic side and on the physical side in a way that makes sense, talks together, and meets the deadline that we had set? And I have to confess that I don't remember the particular dates when all of this was going on.

We do have a great big board that we have digitally and I don't know if it's worth inserting that into the oral history, that lays out these two parallel tracks and where meetings are and so on. I could find that for you and you could take a look at it. We mounted it on foam core and carried it around campus to all of these meetings to keep track of our progress.<sup>26</sup>

The outcome of the Framework for the Future Task Force was a parallel track process, where two committees would be established. One was called the Strategic Futures Committee and one was called the Long Range Development Plan Committee. And if I remember correctly (and I'm a little rusty on this), I believe the Strategic Futures Committee was chaired by a senior faculty member, by Gary Griggs, professor of Earth & Marine Sciences. I'm pretty sure Gary was the chair. Peggy Delaney was on it as vice chair of the Senate. And then there were a number of faculty members. There were representatives of the Student Affairs division. There were student representatives on it. And members of our staff were on it. They were asked to sketch out possible academic futures for the campus based on ongoing academic planning.

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<sup>26</sup> See Appendix A of this oral history volume.

The other thing that we were trying to get across in this (and I was certainly focused on the physical planning side of things, but I know we were trying to do the same thing on the academic side of things), is you don't just finish a plan, whether it's an academic plan or a long range development plan, wipe your brow and say, "I'm glad we don't have to do that again for ten years or fifteen years." Planning at different levels and resolving different questions is really an ongoing activity. So I think the Strategic Futures Committee was looking at the academic planning that had been done to date, both formally with written documents, and informally with discussions in the senate. It was looking at possible futures for the campus as regards enrollment growth—what the outside demographics were going to do, what kinds of resources we might be getting from Sacramento and the system. And then recommend a target enrollment that would then become the basis for the long range development plan. And that number—and it's got to be more than just a number. It's got to be a number and some rough idea of how that number of students is divided, or might be divided in various academic disciplines. So the kinds of facilities and where you put them would vary if you were eighty percent science and engineering and twenty percent everything else, than if you were twenty percent across the board for the five divisions and schools. And these are very rough figures. I think I've found myself saying, "We're designing a mitten and not a glove." You can't custom fit it, because things can change in the life of an LRDP. At the same time, just as that was getting started, we started the selection process for a consultant team to work with us on the Long Range Development Plan, and I'll come back to that in a few minutes.



The Framework for the Future Task Force talked about these two parallel tracks. The idea was that the Strategic Futures Committee would come up with this number and report that would give general themes that then needed to be reflected and responded to in the Long Range Development Plan. That would be going on as the people working on the physical plan, on the LRDP, would be gathering baseline data, surveying, looking at past planning documents. We weren't sure when we went to pick the consultant whether the consultant would know the campus or know the history of the campus, so we knew we were going to have to bring the consultant team up to speed on where we were and how we did things and so on. And as it turned out we had quite an out-of-town consultant, so we needed to spend a lot of time on that. And those two things can go on independently.

But then, once the Strategic Futures Committee and, back to the physical planning side, the consultants could start to think about in very general terms, various patterns of development that might in respond in different ways depending on what [might come] out of the Strategic Futures Committee, and as the Strategic Futures Committee was starting to develop possible numbers and scenarios, then the conversation started to get more intense between the Strategic Futures Committee and the LRDP Committee and its consultants, about okay, if the number is this, how might that lay out on the land and so on.

We also knew that it would take a certain amount of time to prepare the plan, to get campus buy-in, to do the environmental analysis that's required by CEQA, the California Environmental Quality Act, and then to move through the approval process. This was all sketched out in [the work of] the Framework for

the Future Task Force. We tried to identify the various constituent groups and when we would meet with them. So for example the big chart, or schedule that we generated had little spots for various committee meetings, whether it was the Strategic Futures Committee or the Long Range Development Plan Committee. It had consultation with the Office of the President. It had consultation with local community organizations and the city and county planners—where we would need to touch base at different steps of the process. And that was something that really kept us going and that we measured our progress against and by.

The Long Range Development Committee put together a subcommittee to start the consultant selection process. And so, again the scale of this project was going to be big enough that University policy required us to publicly advertise that we were doing it and go through a fairly rigorous selection process. It's very similar to picking an architect for a building. So we advertised with a general description of what we wanted to do, and the time we had to do it in, and what kind of skill set we were looking for. I think we got five or six proposals from various consultant teams.

I think we had five proposals and ended up interviewing four of the five. The first committee, the screening committee, screened the five. There were some very strong proposals, I mean very widely experienced in doing master plans at institutions of all types, some much more focused on California or the West, some national firms. I think there were five original proposals. One seemed to be much weaker than the others, so we said thank you very much, and we interviewed four firms. I remember some of them, not all of them.

### **Cooper, Robertson and Partners**

But among the firms that we considered (and jumping to the end, this wound up being the firm that we selected), was a firm from New York called Cooper, Robertson and Partners. They had a long history of planning. I, as a long time member of the Association of University Architects, had gotten to know the campus architect (I don't know if that was her title or not), but functionally the campus architect at Yale University. Cooper, Robertson had done a lot of planning there. Alex Cooper had been a planning commissioner for the city of New York. They were both an architecture and a planning firm and they had done work both in academic institutions and commercial settings, and so on. Certainly Alex, having been on the New York Planning Commission, was quite familiar with some pretty heavy-duty politics and the like. His partner, Jaquelin Robertson, who we never met because he didn't work on our project, had been head of one of the planning departments under Mayor John Lindsay of New York. So this was a pretty high-powered firm. I had heard nothing but good stuff about them from my counterpart at Yale and other places. But I really wasn't sure how they would work in the [UCSC] environment, which is so unusual.

And then, I don't know whether somebody mentioned us to them, or whatever, but I got (and this was well before we started the selection process) I'd gotten, as I would occasionally get as campus architect, a brochure describing the skills of the firm. I don't know if they'd gone digital or not. I don't remember if this was a hard copy that came in the mail, or whether what I got was an electronic version of one of their projects. And they all looked very thoughtful and interesting, but

they were in very different physical settings than this one. And so I sort of thought, well, that's nice to know, but—

So they responded to the request for qualifications, and they put together a team that included a well-established and well-known landscape architecture and planning firm from San Francisco, EDAW. EDAW was an abbreviation for former members, Eckbo, Dean, Austin, and Williams. So it had a long history of planning. I think they had more than one office, but they associated with the San Francisco office. There's a major international engineering firm called Arup, and they were founded by, I think an Englishman of Danish extraction named Ove Arup. They started in London and they work all around the world. They've developed a particular interest and expertise in sustainability. The kinds of things that we needed to work on at a Long Range Development Plan level weren't specific engineering, but some broad ideas of things. So ARUP came on as an engineering sustainability consultant. There was a traffic consultant. In fact I think we wound up with a couple of traffic consultants looking at different kinds of things. One of the firms was Kimley Horn, and that may have been at our suggestion based on what the campus knew of good transportation planners.

But the qualifications they put together were very strong. It was a written package. It was beautifully written. It made a lot of sense. It was very thoughtful. There wasn't much doubt that we would interview them.

When we do interviews for an architect selection there is often a lot of jockeying to be either first or last, because those are seen to be the prime interview positions. So I got in the habit a number of years ago of assigning those spots by

lot. Even before we let the firms know that we want to interview them, we say, "We're going to interview you, and this is the time we've set, and we've done that by lot." I think we did two days of two interviews apiece, because it was a pretty ambitious undertaking. Cooper, Robertson was the last.

As we went through the interviews we were pleased with the selections [of firms to interview] that we'd made, and they were all pretty good. Then Cooper, Robertson came in. I had been asked by Vice Chancellor Vani to chair the consultant selection committee. There was actually a two-step process. We asked for statements of qualifications, and we got, as I said before, five of those. And then once we picked the four we wanted to interview, we asked for a more detailed statement. We asked for something more focused on the Santa Cruz campus and got four of those and then we said, "In the interview be prepared to talk about what you put in the proposal, and be prepared to talk about these topics and these questions."

We got four very credible proposals back from these four teams. And as I said, in reviewing the proposals and in doing the interviews we were pleased with what we had. These were very qualified teams and we expected a real difficult selection process. Typically after we finish interviews for an architect or a consultant, we speak confidentially about people's reactions to see where the parties are. I was amazed. We wound up picking Cooper, Robertson, and I'll talk about that a little more in a minute. But if I hadn't made the tactical error of saying, "let's talk about everybody," or "let's see where we are," it was clear once we got into it that if I hadn't done that, and just said, "Who do you want?"

instead of trying to rule somebody out, we probably could have caught Cooper, Robertson in the parking lot and told them that they had the job.

**Reti:** (laughs)

**Zwart:** Their interview was extraordinarily good. Very focused. They brought in a good team. It was clear that they had talked to each other, which isn't always the case in interviews. You had the sense that they would work well together. You had the sense that you would enjoy working with them. They actually had two principals. Alex Cooper was there. He has this great mane of white hair and this real presence. He's a force of nature. And his partner, I think his name was Dave McGregor, Dave had a background in academic administration. I think he had been the chancellor of one of the public university systems in the Northeast, Vermont or New Hampshire or something like that, and then had gone into the consulting side. A young architect, younger than I was, a project manager named Bill MacIntosh.

They did a very good presentation, addressed all of the issues, and it was clear that they had done some thinking about things. In the course of our discussions, I remember a comment that Charlie Eadie made, because we talked both about the interview and we talked about the proposal, somewhere along the line. Charlie said, "You know, most of these other firms looked at what we asked them to talk about and then talked about them, and then turned it around and said the same stuff, and then added language to it and they made it fatter. Cooper, Robertson's proposal took our questions and condensed them, and really boiled it down and really made it quite succinct." It was really fantastic; it was one of the best

proposals I'd ever seen. And their interview was similarly thoughtful. But what I found very reassuring is that as they talked about the campus, even though they were complete strangers to it, working three thousand miles away and never having done a project here, they had some very astute and accurate observations about it. We thought there were some real advantages to getting a fresh look at the place. And that came through in both their written materials and in their presentations.

**Reti:** Do you remember what any of those fresh observations were?

**Zwart:** Alex Cooper is a very facile sketcher, so he did some sketches that talked about how the physical development of the campus laid on the land, and different strategies that the campus might consider following for expanding that—you could do this; you could do that. I also remember that he was quite sensitive, or they were quite sensitive to the changes in terrain, both in the marine terraces that step up through the campus, and the various configurations of open space. And they talked about all of the right kind of stuff. They were very good about it. But what was also reassuring is that I just didn't know how a bunch of New Yorkers would play to a Santa Cruz audience, which tends—I don't want to say that Santa Cruz is xenophobic—

**Reti:** (laughs)

**Zwart:** (laughs) —but it tends to be a little bit more comfortable with things that they are more familiar with, local.

**Reti:** Sure.

**Zwart:** I don't remember exactly who was on the selection committee. I'm sure we've got that in the files somewhere in Physical Planning & Construction. But they impressed everybody. The architects were very impressed. But what was reassuring was that the people who essentially are our campus clients said the same kind of stuff about this presentation. So off we went.

I guess one of the other things that impressed us, or impressed me at least, so much about Cooper, Robertson (and this phenomenon is not confined to that selection process, it's been true about architects we've interviewed. It's true about people we've hired) is that they asked really good questions: have you thought about this, or what about that? It was clear that the kinds of questions that they asked indicated that they were thinking at a really high level, a really good level. The questions showed a real interesting blend of experience and astute observation. It was really good.

So we hired them. They put a proposal together that we would have loved to have accepted, but it exceeded our budget by a factor of about one hundred percent. There wasn't anything in it that wouldn't have been useful and wouldn't have been helpful, but we just didn't have the budget. But they were terrific about refining the process of completing the LRDP and putting together a scope of work. One of the things that fell by the side was Dave McGregor, who would have been billing at a principal rate. We just couldn't afford another principal on the job. So we didn't see much of Dave after that.

But we saw Alex when we needed him, and he was at all of the public meetings that we held, and he was at many of the campus meetings that we had. And Bill



MacIntosh, who again was, I think, a Northeasterner mostly, born, raised and educated, proved to be a very capable guy, very thoughtful. I think he's probably now a principal of the firm. I had a phone call from him a couple of months ago, or an email, saying that they were being considered for a major planning job at the Research Triangle Park in North Carolina and would I be willing to serve as a reference? I was very pleased. They didn't come in knowing all the answers. They were very good about generating a series of ideas.

This is something that's probably better gleaned out of the documentation that we put on the web about the history of this, rather than me trying to describe it in an interview. But I mentioned earlier that as the Strategic Futures Committee was pulling together the academic side of things and looking at different kinds of numbers to consider, now we had the LRDP consultant team. Cooper, Robertson was laying out strategies for expansion and what that might do and where we might develop, and how the campus might lay itself out, and where we need to extend roads. Alex, I remember one occasion, I think he had four general configurations that they presented at one particular meeting, and that probably was the outcome of office work that started with a dozen and narrowed it into four. And as he went through them he was not above saying, "You know, this one, I don't think there's much merit in this and we don't like it very much and here's why." He would tell you the pros and cons of each one and it wasn't: "Here's the answer. We know what we're talking about. Do it." There was always a lot of back and forth. They were really quite receptive. If a good idea came out of any of the groups that they were meeting with on campus, they were

more than willing to take it and run with it and integrate it into things. So they were very, very good.

Back to the Strategic Futures Committee side of things, they looked at four enrollment scenarios. There was a good logic for each one. One was no growth at all. That was the lower limit. The next one was some modest growth, or growth based on some minor tweak of numbers. The top end was 25,000. So it was 15,000, which was the enrollment of the last LRDP; somewhere around 17,000; and there was just a very limited growth, I can't remember whether it was to grow our graduate programs, or to change it based on student-faculty ratio; and then 21,000, which was sort of midway between 17,000 and 25,000. And they went through the pros and cons about what might happen. I think their final report, the Strategic Futures Committee final report, said that while enrollment growth could probably justify the highest number, there are lots of reasons why we shouldn't do that number. We probably wouldn't get the resources that we would need to develop the campus. It would have a big impact on the physical setting and on the community. So all of this wound up being tempered.

While there had been some back and forth between the Strategic Futures Committee and the Long Range Development Committee, it really started up in earnest once the Strategic Futures Committee said, "These are the four numbers we'd like to look at." By that time, if I remember correctly, Cooper, Robertson had generated some general strategies for developing the campus, had ruled out a couple, and then they took those four numbers to see how each of those would be addressed by the various physical development strategies that they had. One of them didn't move to the North Campus at all. (These are the potential land use

strategies that Cooper, Robertson was working through.) One of them actually suggested building new colleges on the existing athletic fields and moving athletic fields further to the south. And they talked about the pros and cons of those as we went along. That was working within the boundaries of the campus.

One of the other things that was very attractive about Cooper, Robertson is that it was clear from the way they talked about their planning and from what I heard from my counterpart at Yale, is that they didn't let their planning work stop at the boundaries of the property they were looking at. They also paid attention to the surrounds. As they were starting to know the campus, starting to know its setting, they did a series of drawings that illustrated various kinds of relationships between the campus and the surrounding community. There was one that showed the major transportation routes to and from the campus. There was one that showed—I guess TAPS, the Transportation & Parking Services office has data from the campus database on where student populations are heavy. So they actually had a plan that showed (and I remember this drawing very well because I've used it in campus planning presentations) in various densities of red, red fading to pink to almost nothing, the concentrations of student households, or student population, mostly around the city of Santa Cruz and south. I always thought of it as the map with the rash (laughs) because of the choice of red making it look like some kind of skin inflammation.

**Reti:** (laughs)

**Zwart:** Which is, I'm afraid often, (laughs) the way often that the community thinks of our student population. But all of that was very helpful. And the transportation planners talked a lot about moving back and forth and so on. So there were a whole series of quantitative studies, qualitative studies. We had done a lot of work back in the Growth and Stewardship days about the physical setting in the North Campus—the biology, the geology, the sorts of habitats. And all of this stuff came together to shape what ultimately became the land use map of the Long Range Development Plan.

I got distracted when I was talking about Cooper, Robertson taking the four enrollment scenarios, or four enrollment numbers and laying them on the land seeing what happens. So then there were several joint meetings of the Long Range Development Plan Committee and the Strategic Futures Committee at which Cooper, Robertson presented all of this stuff. Finally the recommendation that came out of the Strategic Futures Committee, and this became the initial target for the Long Range Development Plan work, was 21,000 students by 2020.

I talked earlier about the Framework for the Future Task Force, and I mentioned Charlie Eadie saying, “We need to work on building a campus constituency for this process, as well as an off-campus constituency before we start taking it public for review and approval.”

At about the same time the city of Santa Cruz was starting on an update of its General Plan. Charlie had actually worked for the city planning office in Santa Cruz. He was very much involved in the recovery efforts after the Loma Prieta Earthquake in 1989. One of Charlie's great strengths was his familiarity with the

city planning process and that world. He said it would be very helpful if the university could adopt the same time-frame that the city has. I think when we got started we had thought about doing a ten-year framework, but Charlie convinced us that we ought to look out to 2020 because we thought that was going to be the lifespan of the General Plan.

Well, as it happened, the city suffered budget cuts, it lost staff, it fell behind on its planning efforts. I don't think the city still has published a General Plan. But at least it got us thinking about coordinating the planning stuff with the city. And we did meet with them regularly. "Regularly," I guess, is somewhere between occasionally and frequently. So we met regularly to go over sorts of the things with the professional planning staff down there and see what they were thinking about doing. The two processes didn't inform themselves as much as we had hoped. But it at least got us talking to each other on similar kinds of problems, and developed some channels of communication that proved very useful later when things got a little more testy between the city and the university.

All of this led up to a completion of the Long Range Development Plan. We called it 2005-2020. I'm thinking that we had a pretty well-established draft sometime in about 2004, because we had set aside about a year for the preparation of the environmental impact report and Regental approval process. The Regents ultimately approved the document in 2006, because there had been a couple of hiccups along the way. I think the LRDP EIR was done from 2004-05.

### **The LRDP and the California Environmental Quality Act**

The CEQA process is very heavily prescribed within the California Environmental Quality Act, and then the University has its own implementation standards and guidelines and processes because we don't do anything or anything of much [consequence] without consulting with the Office of the President and the Office of General Counsel.

And so that process is, once the plan is established as the project, then the environmental impact report looks at—CEQA lays out, I think it's sixteen or seventeen topic areas within which a project, whether it's a building or a plan, might have an impact on the environment. It's everything from agriculture to geology to biology to traffic to housing to utilities. It's very well spelled out in CEQA. Any EIR will do an analysis of the impacts of a proposed project on each of those categories. There are attorneys who specialize in this stuff, so it gets very arcane and very elaborate.

Work started on all of that. We had done a number of the baseline studies that both informed the configuration of the boundaries of the land use map, particularly in the North Campus, where we hadn't built anything or hadn't built much yet, but it also became the baseline for the environmental analysis that the environmental impact report represented.

The Draft Environmental Impact Report, it used to be, we just did it on one side; now with duplex printing it's on two sides—the initial draft of the EIR was probably five to six inches high. So it's a pretty substantial document. We're required under CEQA and University policy to circulate it for public review and

comment. That's typically a forty-five day period. For something this big, we may have actually extended that to sixty days or longer. At one point the City Council asked us to extend the review period, and we actually extended it as a courtesy to the city. And during that period people can review the document and submit comments on it, either in writing (now we use electronic communication as well as letters) and then University practice is to hold a public meeting at which the EIR is summarized and at which public statements can be taken. That's all recorded by a court reporter. There's no significant give and take other than a discussion of process. But people can come in with comments. They can make suggestions, and so on. And then all of the comments—from letters, from emails, and from the oral communications at the public hearing or public hearings, are collated. And not surprisingly for something as ambitious as the Long Range Development Plan, the same question may be asked in two or three or six or twelve letters. But all of the questions are enumerated. Then we go back to work and respond to each of those questions. Sometimes that involves changing some part of the Long Range Development Plan. Sometimes that involves changing some part of the analysis.

The other thing (back to the baseline EIR [Environmental Impact Report] business). One of the things that an environmental impact report does is analyze the impacts and suggest mitigation measures. So if an impact is significant, then the environmental impact report may propose for adoption by whatever public agency will be approving the document, a mitigation measure that will mitigate that. So for example, if there's concern that building in a particular area will disturb the nesting habits of birds, the mitigation measure might be only do

construction during certain times of the year, or do a survey before construction starts and monitor. If that becomes adopted as part of the EIR mitigation measure, then in this case, the Regents or the University are obligated to do it. So the comments might suggest mitigation measures; the public agency adopting the document may add mitigation measures. And the intention is to mitigate as many of the significant impacts to what's called, "a less than significant level," to make it better.

So we had our five inches of what's called the Draft EIR. And then we had another three or four inches of responses to the EIR. As those were being reviewed in great detail with the consultant team, with the Office of the President, with the Office of the General Counsel, there were a couple of comments that suggested that we hadn't done adequate analysis. The one issue I remember was some off-campus traffic on Highway 17 and Highway 1. In a circumstance like that, we then did additional analysis and put that out again for a public review period of forty-five days.

**Reti:** Just that specifically?

**Zwart:** Just that specific section and that component with mitigation measures. And that's what happened here, and that was one of the reasons that we got delayed a couple of months. But all in all, I think we got to the Regents only two or three months after we thought we would.

So that's a very long process. At this point, although Cooper, Robertson, the LRDP consultant team, may come in from time to time, their work is mostly done, and the balance of the work, that year to year and a half, was handled by



members of our staff, members of the planning staff, and the Office of the President, and the Office of General Counsel. We also had outside counsel assisting us on all of that.

**Reti:** Now, I seem to recall that there were some public meetings before you ever got to the environmental impact part of the process.

### **The LRDP and Public Hearings**

**Zwart:** Oh, yes. There were. I don't remember the exact number. But we had identified on that big chart, that time schedule that I mentioned to you a little while ago, there were identified, I want to say a half a dozen (it might have been a little bit more or a little bit less) where the work-in-progress was presented to the public. And we would typically hold those in town at, I guess it's called the University Inn now.

**Reti:** Yes, I was at one of those.

**Zwart:** Yes. The work would be presented and comments would be taken, and, depending on what stage of the process, we would have somebody from Cooper, Robertson there, somebody from the university there, and for example, if we were focusing on traffic and transportation, their transportation consultant would be there, and so on. So yes, there were a series of those.

The other thing that happened was that there were public meetings like that, and then there were meetings with groups that we could identify on campus of particular concern. For example, one of the things I hadn't talked about in the whole planning process that grew out of the big schedule came out of

Framework for the Future, was that as chair of the Long Range Development Plan Committee, Vice Chancellor Vani set up four sub-working groups. If I remember correctly, there was Land Use and Environment, which I chaired. There was Housing and Student Life, which Jean-Marie Scott, as head of Housing and later Student Affairs, chaired. There was Transportation and Traffic, which Larry Pageler chaired. And the fourth one was Utilities and Infrastructure. Ilse Kolbus, as head of Physical Plant, chaired that one.

So Tom [Vani] set up those task forces and asked each of them to put together a white paper that would address issues for the LRDP. This was all part of that early process that was going to inform the process that Cooper, Robertson did. Those were the first four that Tom talked about. Two then grew up as we got started. There was a student who was very involved in this, Matt Waxman, who was just a live wire. Last I heard he was studying architecture at the Graduate School of Design at Harvard. A very enthusiastic guy, and he wanted a little work group of students working on Student Life. And then there was also a Campus and Community task force put together. I think it was jointly chaired by Emily Reilly, and I can't remember if she was mayor or vice mayor at the time, but she was a City Council member, and Ron Suduiko, who was at the time Vice Chancellor of University Relations and University Advancement. And that had a couple of public officials. I think it had a member of the City Council, a member of the Board of Supervisors, Mardi Wormhoudt. There were members of city and county, primarily city staff involved in the particular areas of interest, and that would be primarily planning and utilities. So there was somebody representing Public Works; somebody representing the Planning Department; somebody

representing the Water Department; members of campus staff; I don't think I was formally a member, but I attended some of those meetings; and then a couple of members-at-large. They would talk about what major concerns were.

So each of those six groups, it was four plus two, six groups—each of them published a white paper (that again, is available on the web)<sup>27</sup> of issues that needed to be addressed and possible directions to take. And that was all done, again, if I remember correctly, it was being done in parallel with the work of the Strategic Futures Committee. So that informed the work that Cooper, Robertson when it pulled its Long Range Development Plan together and looked at planning issues both on and off campus.

### **Enrollment Levels and the LRDP**

As this was going on, Denise Denton arrived as chancellor, and then a year and three or four months later was replaced by George Blumenthal.<sup>28</sup> And that was, again if I remember correctly the summer of 2006, I think. George's arrival on the scene as chancellor coincided more or less with the completion of the work responding to the Draft EIR. So when the Final EIR came out, George announced that as the new chancellor he was going to recommend to the Regents a reduced enrollment level. We had had a series of meetings with the city about what could

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<sup>27</sup> [lrdp.ucsc.edu/lrdpc.shtml](http://lrdp.ucsc.edu/lrdpc.shtml)

<sup>28</sup> Distinguished electrical engineer Denise Denton was UCSC's ninth chancellor. "Denton took the helm at UC Santa Cruz in February 2005 after serving nine years as the dean of the College of Engineering at the University of Washington in Seattle, the first woman to hold the post at a top research institution. It was one of many 'firsts' Denton acquired throughout her career, and she became a powerful role model and mentor for women and minorities in science and higher education." Denton served for sixteen months before her tragic suicide on June 24, 2006 in San Francisco. See <http://news.ucsc.edu/2006/06/896.html>

we do to mitigate growth. The message we thought we heard was that reducing enrollment would go a long way to resolving these problems. So based on that, based on what the impacts were, based on a look at what we thought the projections of growth were going to be, the campus realized it had the potential for giving up a little bit by giving up essentially 1500 students. George announced that he was going to recommend to the Regents that rather than have an enrollment level of 21,000 students that we have 19,500. That then affected, for example, the land use map in the Long Range Development Plan. So there was a document that was published. The Draft LRDP was a bound document of—since I've been measuring these things in inches—

**Reti:** (laughs)

**Zwart:** —maybe three-eighths of an inch thick, with a land use map. It essentially took the enrollment numbers, took the assumptions of the Strategic Futures Committee, translated those into how much building area we would need, translated that into how much land use area we would need, and infrastructure and so on.

So as part of this rollback from 21,000 to 19,500, the LRDP, the document that finally went to the Regents for their action, was that original [LRDP] document with a bunch of line-outs of numbers and reduced numbers above them. For example, the Long Range Development Plan map took some areas that were designated for a new college, say, and converted it into campus resource land. And campus resource land is a designation in the Long Range Development Plan that says, "The plan doesn't provide for us to build anything here. We don't

think we're going to need it to reach the enrollment level of, in this case 19,500." So essentially the logic behind that was, well, we thought we would need to put something there to reach 21,000. But if we're only going to go to 19,500, we can do without a certain number of facilities, and that piece of land we can reserve as a land bank for the future. And that's really what campus resource land is.

So the document that the Regents saw—really, you could go through it and see what the effect was going to be of the reduction of 21,000 to 19,500. And so again, if I remember correctly, there had been a series of meetings with the city, leading up to that when George became chancellor there was a series of last minute meetings before we went to the Regents about some last-minute discussions of reducing impacts and doing other things. But as it was, those negotiations didn't lead to anything other than get people used to the other side's position.

We went to the Regents. If I remember correctly, it was in September of 2006 that the Regents approved the Long Range Development Plan and adopted the Environmental Impact Report. George and I made a presentation to the Regents giving them the outline of it—one of the comments that came back from one of the Regents, was, "Well, why aren't you going all the way to 25,000 students? We think we're going to have that demand. Why aren't you making provisions for it?" And if I remember correctly, George did a very good job of answering that question, simply saying, "There are lots of reasons. This is a delicate balance. Growing that fast would be a challenge and it would be an undue burden on the local community, and that's an important part of the planning effort." I believe the Long Range Development Plan was approved unanimously by the Regents'

Grounds and Buildings Committee, and that was recommended to the full board of Regents and then they approved it the next day.

So after the Regents approved the project, under the regulatory structure of CEQA, opponents to a project can't file a lawsuit until what's called the decision maker, whether it's a board of supervisors or a city council, or in this case the Regents, take an action. And then there's a certain period of time, I think it's thirty-five days, within which they need to bring legal action. So not surprisingly, within thirty-five days of the Regents' action, the Regents found themselves sued by the city, by the county, and by a local group of slow or, I would say even no growth advocates, CLUE, the Committee to Limit University Expansion. Essentially it argued that the university's environmental analysis was defective (that's typically the basis of a CEQA lawsuit), and needed to be redone. Not surprisingly, in a lawsuit like that they challenge just about everything in it.

So this went to Santa Cruz Superior Court and was reviewed. The judge in his ruling—this was a process that wound up taking about seven months—heard arguments from both sides, read written pleadings from both sides, and in his decision determined that the bulk of the university's EIR met CEQA standards and was adequate and appropriate, and therefore rejected a lot of the lawsuit, and in fact rejected a lot of the lawsuit from CLUE because they had said that the environmental analysis on the North Campus, for example, was insufficient, and he felt that it was sufficient, so that the university did not need to redo it. But [the judge said] that in three areas of particular concern to the city and county the analysis hadn't been adequate. And the three areas were, not surprisingly

(because these were the three areas we knew would be a challenge in dealing with the local community) utilities, primarily water; transportation and traffic, and housing, housing for students. He felt that the analysis was inadequate in each of those. To get into the legal niceties of all of that you would really need to talk to an attorney, and attorneys don't always agree. CEQA law seems to be, to an outsider looking in, continually evolving and relying very heavily on recent court cases. And from what I can tell, there is always something going on in the CEQA courts that may affect something. And in this particular case, there had been a [recent] decision<sup>29</sup> related to water use in the level of analysis for future water use that the judge, Judge Paul Burdick, found wanting. So he said the university is going to have to go back and do those over again. And of course the university said, we did a great job. Look at all the things we've passed on. And the community said, no—bang, bang, bang. But in his address to the parties Judge Burdick also said, "This is a case that cries out for discussion and resolution short of a verdict. I urge you to take on mediation and I can recommend some mediators." Well, I'd had enough experience with the court system, mostly in construction law sorts of things in my career, that I knew that a judge's suggestion (laughs) is hard to ignore.

So the parties, through their respective attorneys, started discussions about picking a mediator and getting a mediator, and agreed on a mediator [Lester Levy] who was trained as an attorney. He was a very serious classical guitarist

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<sup>29</sup> Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova, S132972.

because when he came to town he would go to the Guitar Showcase. There was somebody who was a very fine guitar maker who sold his stuff at Guitar Showcase. And he had done some pretty tricky mediations, apparently. So he started a process.

This had to have been a tough job, in large part because it wasn't just the university and the city. There had actually been three—I think they call them appellants and not plaintiffs in this kind of action: the city, the county, and CLUE. And then nine individual citizens filing things together. And there was a big overlap between CLUE and the nine citizens. Somehow CLUE did something wrong and missed a deadline, so they were out of it. So we had those parties.

The mediator started setting up a series of meetings. Typically a meeting would include some period of time in which the mediator and all the parties would be together in the same room. Quite often that was Room 212 in Kerr Hall, since it was big enough. These meetings could get fairly large. Then he would want to break the parties up to hold individual discussions with them, and push a little further, and make suggestions, and sort of do shuttle diplomacy. So that meant we needed to have four rooms available—one for the university, one for each of the three other parties, and then one big enough for everybody to get together.

This was a long process. There was a lot of back and forth. The city had some ideas about what they would like. Some of this they had actually put on the table for us before the Regents approved the action. Essentially, the city's position, or the appellant's position is, "We don't object to the university growing. We just want it to pay for its impacts." And when we had some of these informal



discussions and negotiations (this was without the benefit of a mediator before the Regents approved the project), the city had put some formulas out there about payment and how they would expect payment.

I have to be careful about what I say because I know for certain before the mediation, the formally court-suggested mediation (and I think it also applied before the pre-Regents action negotiation), all of the parties signed a confidentiality agreement. So I can't get into a lot of details about what was said in there. But I do remember that in the negotiations before the Regents acted, when the city came in and made their presentation—one of the things that I remember about that (and I don't think I'm violating any confidentiality agreement by saying it) is that the city, in doing their analysis said, well, you know we run up into problems in all three areas—water, transportation and housing—when we get to a certain enrollment level, and I don't remember that number, it was 17,000 or 18,000—and then things start to break down. The university's position was, well, wait a second here. While there is a relationship between enrollment and impact for water, for housing, for transportation, that may vary from subcategory to subcategory. We're willing to talk about the impacts, but we really need to look at the impacts in that area, rather than just a magic number. That was our position. And in fact, it was that approach that got us through what then wound up being the court-suggested mediation. And there were a lot of mechanisms about what the impacts would be, what it would cost to remedy them, how things might be solved. And again, there must have been a dozen or more meetings. And then there were various sub-meetings, and there

was a lot of shuttle diplomacy, and a lot of phone calls, and a lot of correspondence.

But ultimately, all of the parties hammered out a very detailed settlement agreement<sup>30</sup> which was signed and authorized by the Regents, and by the city council, by the board of supervisors, and by the members of the public who had sued us, that gave very specific mechanisms under which the university agreed to provide more on-campus housing for students and the campus population [then called for in the 2005 LRDP]. But the big concern was students. I think the 2005 LRDP had said we would house fifty percent of our undergraduates and twenty percent of our graduate students. I think the agreement said we would make housing available for sixty-seven percent of all of our new students after an enrollment threshold of 15,000. And we would also make payments to the city water department using the same formula that the city charges regular customers. There are provisions in California water law under which a water district can declare a water moratorium or develop plans to reduce water use. We said we would follow those requirements, and we would cooperate with the city on all of those. We said that if we did not provide enough housing then we would limit our enrollment growth, which was something that the city and the county very much wanted. We made a significant up-front payment to the city for transportation improvements on routes that would serve the campus, intersection improvements and the like. And that was something that they delighted in.

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<sup>30</sup> <http://lrdp.ucsc.edu/settlement-agreement.pdf>

It was a difficult process. There was a lot of testiness early on. But by the end of it, somehow the mediator had managed to get people focused on the problems. Particularly when the professional staffs took over, they really were pretty creative in how to resolve this. And the attorneys helped, and the mediator helped.

You know, the university wasn't happy about writing those kinds of checks, but by the same token, I think the university understands that it is tough on a community the size of Santa Cruz to have an agency serving the state put into the middle of it. There are states where the state government sets in place a mechanism under which local communities can be funded for the impacts of a state agency. I don't know the formulas, but I know that in Florida (talking to campus architect colleagues from Florida), that the state makes payments to communities that house members of the Florida university system to offset some of these impacts. The state of Connecticut has something called the PILOT program, Payment in Lieu of Taxes, where the state government gives to local jurisdictions a certain percentage of the tax revenue they lose when a nonprofit institution is there. And in Connecticut it's not limited to public institutions. So, for example, because Yale University doesn't pay property taxes on what it owns, there is some mechanism in place under which the state pays the city of New Haven to make up for that.

It always seemed to me to be a very sensible way to approach these things, rather than to leave each campus to fight it out with the local jurisdiction. I mentioned this in several meetings with the Office of the President and Office of General

Counsel, but given California's budget circumstance—which wasn't as bad then as it is now, but was still not very promising—nothing happened.

### **Town-Gown Relations**

Nevertheless, these mechanisms were all put in place, and the agreement was announced. It was signed. There was a lot of good publicity and good feeling. I have to give an enormous amount of credit to George Blumenthal, who was the new chancellor and wanted to make a deal. I think one of the real advantages that the campus had there is that George has been in town since about 1972 or 1973. He lived in Santa Cruz for many years. So he was not seen as somebody coming in from the outside. Two things—first of all, he had some understanding of what the local problems were, *and* he was not seen as somebody from the outside.

The other person I have to give a lot of credit to was the then-mayor, Ryan Coonerty. He wanted to make a deal, but he wasn't going to do it just for the sake of a deal. And they held firm. Some of their initial positions, as I recall them, seemed to be pretty outrageous. And they ultimately backed off from them, as often happens in negotiations. George and Ryan really got everybody pointed in the right direction. I remember one night. We were meeting in Kerr 212 and this was getting late in the process and it was late in the evening. The NCAA basketball championship game was being played.

**Reti:** (laughs)

**Zwart:** So during the breaks, I guess they found a television somewhere in Kerr Hall, and (laughs) the parties who cared about (I don't remember who was playing who), but they were off watching the game as the other parties were meeting with the mediator. So those little things humanized the whole process.

One of the things that was set up in this was regular meetings of university staff and city staff to move this forward, and to report regularly to the public, to the city council, the board of supervisors, and to the court about how things had been going. I was involved in a little bit of that before I retired. It was really John Barnes and Dean Fitch who picked up most of that load. And the feedback that I've been getting has been entirely positive—that the city is as committed as the university is to making all of this work.

I think we were all hoping that we could see a turnaround. There was a time back in the mid-seventies where the university just got vilified. It's taken forever to get the university and the city out of that mindset. There were things that the university did over the years that make it understandable. There was a period of stiff-arming about not paying the local community. Some of that was that it wasn't happening anywhere. But as finances have become more stretched for municipalities across the state, I think there is more sensitivity to that. I hope we're at the cutting edge of solving that. I tell the story that often during the mediation I thought that what we needed was a marriage counselor, and not a lawyer to mediate between us.

**Reti:** Oh! (laughs)

**Zwart:** Because back when the campus was planning its first parking structure, the city was considering a lawsuit, a CEQA lawsuit. And the Regents had approved the project. The thirty-five days, or whatever it is, within which the city would have to file a lawsuit, was tick-tick-ticking. And so the city council was meeting in private, which they can do when legal matters are involved, down at the city hall, to discuss whether to sue the university or not. This was a council that was profoundly anti-growth. The council we were dealing with at the time of the LRDP was certainly for growth control, but they weren't anti-growth. This previous council had been pretty hard-line about it. So I was sent down to be on "lawsuit watch," as I called it. So I was sitting in the city manager's reception area as they were meeting in the city manager's conference room. As I sat down, there was a corner table with a lamp on it and a little bit of reading material. And at the top of this little pile of magazines and local publications was the *UC Santa Cruz Review*.

**Reti:** (laughs)

**Zwart:** I thought, they're in there deciding whether to sue us at the same time that they've got the *UCSC Review* out here boasting about us. So that's an interesting conflict.

**Reti:** Yes. And of course there are so many graduates of this institution who have gone on to be leaders in the community in many ways.

**Zwart:** That's right. And of course none of us want the place to change at all, so we sometimes are the worst as far as campus growth goes, both for the campus and the impact on the community. As all of this was playing out, I went to a

conference of university architects that was jointly hosted by the University of Cincinnati and Miami University, which is in Oxford, Ohio. Most of the meetings were at the University of Cincinnati [but] we did take a trip one day to Oxford, Ohio to see Miami University. Whatever bus we were on got there a little bit early, so we were walking around in town. I don't remember the exact population of the university. I think it's fairly comparable in size to the Santa Cruz campus, if I remember correctly. But the town itself is 10,000 people. It's much smaller than Santa Cruz. And yet, as we were walking up and down the main street waiting for everybody else to arrive and for our tour to get started, I saw a public works truck parked there, and on the side of the truck was painted: "City of Oxford, Ohio. Home of Miami University." I thought, now that's something to aspire to, where the university's presence was boasted about by the city.

I really hope that things *have* turned around, that the city and the university can move productively. There's no question that the character of the town has influenced the campus. UC Santa Cruz is not like any of the other University of California campuses. But the fact is, that *each* of the University of California campuses takes on characteristics of its surrounding communities, and vice versa. The university has really shaped what Santa Cruz is. And would those of us living in Santa Cruz have as wide a choice of movie screens to see, or as wide a selection of restaurants to eat at—I mean, it's just little things like that—or bookstores, if it weren't for the university? So the fact is, it is a symbiotic relationship and we do need to get along. The university is not like a private enterprise that if the city treats it badly, you can just say, well, we're going to

move to Arkansas or worse—to China or somewhere else. We can't offshore. We're stuck. But by the same token, because we're a public agency, the city council can bang on the university and then say, well, we tried. They don't really have to accomplish anything because we're the big guys. So it's a funny and a weird relationship. But I think it can be turned—

**Reti:** I don't quite understand that last statement that you just made.

**Zwart:** Well, the city council can't make the university do anything, because we've got constitutional autonomy. So they can't pass laws that will affect us. So they can beat up on us and make us look like they're no growth, and then give up responsibility for doing other stuff that would be of benefit to the community. The university is too convenient a whipping boy. But, by the same token, if the city council started to whip on—of course we don't have a lot of big private enterprise here— There's us and the Boardwalk, and we and the Boardwalk are anchored where we are. We can't go somewhere else. But if they were to beat on a private enterprise, Plantronics, for example, could say, "We're leaving."

There was an article in the paper this morning. As part of the agreement between the university and the city, county and the private citizens, we agreed, with some reluctance, to apply to the Local Agency Formation Commission to allow water service to be extended into the North Campus. That now has created a fuss. And there are people who are saying, "That shouldn't be allowed." But the city council last night approved that study. We expect another bit of litigation. But the opponents of campus growth seem to be saying that the university is going to use all the water and nothing else is going to happen here. But I've never heard a



satisfactory answer to the question: what are you saving the water for? The fact is that the university has been part of this community since the early 1960s. Are you saving it for somebody who is going to come in from the outside? We're already here. And the university has agreed to what the city asked: that we would pay to develop the water system; that we would pay, just like everybody else does, to develop alternative sources of water, to abide by water use restrictions and regulations. But we also said, we've got to get the water if you want us to build housing on campus. A part of the agreement between the city and the university is, you have to agree to give us the water that we need and we will build the housing. But if any of this blows up, we're off the hook for providing the housing. I think one of the very useful things about that settlement, as painful as it was to get to, is that both the city and the university have something at stake in making it work. I think that's the best kind of settlement. I'm pretty hopeful that that will happen. We'll see how things play out.

### **The Dynamic Nature of Campus Planning**

Now, not surprisingly, this seems to happen after we finish a Long Range Development Plan. The one thing I say early in the planning process, is that the one thing I can guarantee you about the projections that we're using to base this plan on is that they're wrong.

**Reti:** (laughs)

**Zwart:** (laughs) I can't tell you how they're wrong, but clearly with the change in the University administration in Oakland and with the budget woes that both the

University and the state have hit, at the moment we don't think that the enrollment projections that we based the LRDP on are going to play out, certainly not on a straight-line basis. They already haven't. We've already seen a little bit of a decline in enrollment, and we anticipate a much slower growth rate than we used in preparing the document. But the same thing happened after the 1988 LRDP, as I talked about last time or the time before. That was based on a straight-line projection, which was as good as a projection as we could make at that time. But, in fact, in the early nineties things slowed down and the curve got flatter, and then all of a sudden it took up and it got steeper. So there's no way to know what's going to happen there.

So essentially, there's a lot of question—well, is the LRDP still valid? It calls for this enrollment. But the fact is that the LRDP isn't a time-sensitive document. Although we talk about that and we do the environmental analysis based on certain assumptions with regards to the rate of growth—the fact is that the configuration of the campus isn't time-specific. It may affect the phasing. Let's say the campus is going to reach 19,500 some day. Whether that happens in 2020, as originally anticipated, or in 2025, the validity of the land use plan remains the same. I think that where things might change would be rather than if there was a change of numbers, if there was a major change in academic orientation, which, again, there's no way to project. And again, this is more outside the boundaries of the campus than inside, if the growth of the surrounding community changes in some way, those effects will change.

But that's why, as I said a few minutes ago, you don't just finish a long range development plan and say, "Whew!! Glad we don't have to do that again for

another fifteen years!" You have to stay on top of it and keep checking back and monitoring it.

**Reti:** So it's dynamic.

**Zwart:** So it's a dynamic process. Yes.

If you go back and look at the campus's long range development plans, the very first one—its land use map shows building footprints on the land—but subsequent ones were all much more general documents. There are a couple of reasons for that. One is that if you make the plan too specific and go into way more detail that you can possibly know at some particular moment, then you're also going to make the task of environmental analysis much more detailed than it needs to be, based on assumptions that are certainly going to be incorrect. Circumstances might change. And then you have to go back and redo all kinds of things and go back to the Regents. So quite consciously, the University's planning process has long range development plans that are at a fairly general level of detail. And then we do, again depending on what the particular question or set of questions is supplemental planning studies that are more focused, are based on a closer look, usually a narrower time-frame and a more detailed look at what actually might happen within an area of the campus that then guide individual building decisions. But each document is a guide to the next one.

So for example, one of the planning studies that we worked on well before the 2005 Long Range Development Plan process got started, was what we called the Core Capacity Study. We had a series of large projects coming our way, many in the sciences and engineering, some for the arts, and what wound up being the

Humanities Building. So we worked with a planning consultant from San Francisco, Sasaki Associates, which grew out of a landscape architecture firm founded by a very well-regarded landscape architect named Hideo Sasaki. They do campus planning all across the country. We had some assumptions working with the Office of Capital Planning about what kinds of facilities we might be needing over the next, I don't remember the time-frame of that was, ten or fifteen years, and in what disciplines they might be, and how big those buildings might wind up being. And in working with Sasaki they said, "Okay, you're going to need so many tens of thousands of square feet in the sciences and engineering, and if those are buildings of 800 to 120,000 gross square feet apiece, of four to five stories apiece, then there are these footprints, and here are some places to put them within the existing footprint of the campus, taking into account existing facilities, terrain, tree cover and the like. And so we actually looked at what the 1988 LRDP called the academic core, just to see how much it could hold comfortably. We didn't go and talk to all of the departments and all of the divisions to say, what's going to go in each of these buildings. We just wanted to get our arms around what kind of density the campus could accomplish before we had to go build somewhere else or find another site.

That then led into two different types of studies. The work that we did with Sasaki for that study was very useful when Cooper, Robertson and Partners wound up being engaged to do the LRDP, because they looked at that to say, okay, how much more space do we need for core for these kinds of facilities. Second, that became the basis of a Science and Engineering area plan. And we did an Arts area plan. And in those circumstances, we did actually sit down with

the division and the departments, and we did have a planning committee that would then look in more detail. So the core capacity study was at a fairly abstract level—generic space for laboratories, generic space for arts facilities, generic space for other humanities or social sciences disciplines. Where can we put them, and how might they arrange themselves, and what might that suggest about circulation through the campus? But when we got into the Arts area study, for example, we worked with members of the administration of the Arts Division, the dean and the assistant dean, and then people from each of the departments within the Division of the Arts to say, how do you see your growth spelling out; what kind of facilities are you going to need; how does that turn into buildings? So we took a much more detailed look. And that was actually done to help site what became the Digital Arts Facility, or what's now called the Digital Arts Research Center.

I think I talked earlier about the fact that we do a five-year capital plan that goes to the state, but that is part of a ten-year snapshot of what we think is coming. So we can see what's coming down the road, and as we see a project getting closer and closer to—I say the project is getting closer and closer to us. I guess as we think about moving through time, what I ought to say is we get closer and closer to the time when we're going to build that project, we know we're going to have to face a siting decision and where are we going to put the building? You don't want to do building too far in advance when you are based on guesses rather than estimates. So what we try to do, is as a building is coming along—in the instance of the Arts area plan it was the Digital Arts Research Center. We started some work on area planning for Science and Engineering Hill, first when the

Engineering Building was coming along, but that accelerated so we set that aside. And then we had to take a closer look at it as we saw the Biomedical Sciences Building coming our way. We had to find an appropriate site for that. So typically, an area plan will be triggered by a specific project, because that way you are not planning too far in advance and you know enough about things to make both good assumptions and good conclusions.

So those typically come into play and then inform individual siting decisions. But we structure it in such a way so that we don't take it back to the Regents; we call it a planning study rather than a plan so there's no formal adoption of it. It's just a study. It's loose. In fact, once you get into the design of a building you learn even more. Or you face other constraints. So, for example, on the Digital Arts Research Center, there was a particular configuration proposed in the area plan that made a lot of sense in the general abstract, but once we got into the particulars and were working on the building, the building was being designed at a time when construction prices were just going through the roof. And the design in the area plan simply wasn't going to be affordable. So we had to reconfigure the building, and now we are going to need at some point to see what that does to the rest of the area plan when we go to do another Arts area plan. So these things always inform the next step, but it rarely locks them in entirely. So the Science and Engineering area plan helped inform the site selection for the Biomedical Sciences Building, but it got tuned up as we got into the design of the building itself. So there's always something like that going on.

One of the things that the campus was working on at the time that I retired was a plan to help determine a site for a new Social Sciences Building. We're looking at

areas and doing some area planning related to that. Each of these has its own peculiarities, and its own demands and so on. But that's why we say that planning has to be a continuous operation because you can't just pick it up and just—you need some sense of momentum as you go forward.

The other thing about having that continuity going is that it keeps things alive in people's minds, in people's consciousness. You don't have to re-educate them every time. I think I talked last time about feeling pretty good about how we get the word out about how we do planning, and in the *Physical Design Framework*, bringing into people's consciousness how we think about the campus. And it's all part of that. Just getting into good habits. I was talking to some group, one of these planning things, and I remember reading a review years and years ago of a book called *Habits of Being*, which is a collection of correspondence from Flannery O'Connor. And Flannery O'Connor used to say, she used to just sit down, and I don't remember the particulars, but she said you just have to get into certain habits to get your mind working the right way. I don't remember whether it was every morning or every afternoon that she sat down and wrote. That's what she did. Your "habits of being" make it possible to do things. I think about that as habits of planning. You have to keep your planning chops up if you're going to do a good job of developing a campus.

### **The LRDP Implementation Program**

**Reti:** Today is August 6, 2010 and I'm here with Frank Zwart. This is Irene Reti. This is our sixth interview. We're at the UCSC Science & Engineering Library.

And we're going to start today by talking about the LRDP Implementation Program and its implications for the planning process.

**Zwart:** Yes, we were talking last time about the fact that over time University of California long range development plans have become fairly general. There are specific guidelines and directions and land use maps in them, but they're generally written at a fairly high level of generality. Since they have to live fifteen years or so, they have to have some sort of life. And there's a big gap, a big planning gap, between the guidance that a long range development plan would provide for siting any single facility, or any single series of facilities, and making, say, a siting decision about where a building is going to be. So there is a need to have planning studies and planning documents to bridge that gap, that go into a more detailed look at the campus and where the campus might be going. I think I talked last time a little bit about a couple of area plans that we've worked on recently—

**Reti:** Yes.

**Zwart:** —the Science and Engineering area plan and the Arts area plan, both of which were triggered by the need to find sites for particular buildings, but wanting to do it in such a way that if we're looking at buildings numbered for Natural Sciences 1, 2, 3, 4, and 5, and you're looking to site Number 5, you also want to be thinking about 6, 7, and 8. So those were area plans.

But I think the first broad campus look at this intermediate level scale of planning was broader than the relatively limited geographical areas of the Science and Engineering area or the Arts area. It was looking at the whole



campus. But it came out of a time in the early 1990s when the campus had gone through the challenges of doing the 1988 Long Range Development Plan and getting that passed. That was a big effort for the campus (and I think I talked about this several interviews ago), given that its planning structure, its planning staff had essentially been decimated during the 1970s and early 1980s, when there was almost nothing going on. If you look at enrollment charts, or if you look at the amount of construction activity, say between 1976 or 1977 and 1984, 1985, it really dwindled to almost nothing. And there really was a lot of deterioration in the on-campus ability to tackle those kinds of things. So this was a matter of rebuilding that practice within the campus.

Karl Pister arrived on campus in the early 1990s facing a major controversy about extending Meyer Drive, a roadway across the Great Meadow and the way the Music Building was going to be sited. Up until then a lot of the planning had been handled in the Office of the Vice Chancellor for Finance, Planning, and Administration, Wendell Brase. And he [Pister] heard the need to do this intermediate level planning. So he brought in a former colleague. Pister had been the dean of engineering at UC Berkeley. And he brought in the past dean of the College of Environmental Design at Berkeley, an architect named Richard Bender, who then associated with the San Francisco architecture firm Skidmore, Owings, and Merrill, and undertook a two or three-year process to put in place what was then called the LRDP Implementation Program<sup>31</sup>—how the campus would implement the 1988 Long Range Development Plan in more levels of

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<sup>31</sup> Available at <http://ppc.ucsc.edu/cp/planning/lrdpip/>

detail. They met with a lot of campus groups. That was handled by a separate office. Our office, Physical Planning & Construction was involved, but part of it was handled out of the vice chancellor's office as well.

They looked at particular areas of the campus, and they came up with a plan that has proved to be extremely useful and extremely helpful. It laid out five or six general principles of the campus, several of which I used frequently in doing presentations on campus planning to help people understand the campus. For example, their first big idea is that the campus has different, I believe they used the term, "vegetation zones," different kinds of physical characteristics. And buildings in each of them need to respond to that general characteristic. The areas tended to be: the meadows, which are the lower third or forty percent of the campus; the forests, which are the upper sixty percent to two-thirds of the campus; what's called the ecotone, or the forest edge, where the two come together; and then the major and deep ravines that carve their way north and south through the campus. Once you start looking at the campus as a combination of those kinds of land types or vegetation types, you start to see it in a very different way. Then they went on to talk about the use of clusters within the forest, to leave pieces of that spectacular landscape effectively untouched, or at least less developed. It talked about the desire to densify rather than jump into the North Campus, to fill in before pioneering new land. And then it used the term "a ladder of roadways" mainly east-west roadways that would provide vehicular access from one side of the campus to another. And then the term that people often continue to joke about: "a warped grid" of pedestrian paths that knit all of this stuff together.

**Reti:** They joke about that.

**Zwart:** Because of the use of the word “warped.” And in fact as we’ve talked about that and looked at it, it’s been a good model to get a visual, mental image of the campus. It [the Implementation Plan] made some recommendations for siting particular buildings and particular types of buildings. In fact, there were a couple, one in particular, that I thought never would happen within my time as campus architect. It proposed, for example, in the Science Hill area to do a major addition to the east end of Natural Sciences 2, the second Natural Sciences building. It was a very, very tight site and I thought it would be one of the last sites to be used on Science Hill. But as we got started with the Interdisciplinary Sciences Building, the architects we were working with, Moore Ruble Yudell, looked at a site immediately south of Natural Sciences 2 and a site to the east, and they made a very strong case that the building programmatically, for what was planned in the building, really wanted to be seen as an extension of Natural Sciences 2 rather than as a separate structure. They argued, successfully and correctly, I think (well, in retrospect) that the connections between the two buildings would be much stronger if it was done as an addition to the end of Natural Sciences 2 rather than as a T-shape coming down out of the middle. So the design proceeded that way, and it took a lot of attention to actually get the thing built, to really shoehorn it in there. But it did work and it did what it was intended to do.

The Implementation Program really had a lot of ripple affects. It also suggested a site across from the original bookstore building, what came to be called Quarry Plaza, for a new and expanded bookstore. And that also became a very

important social destination for students. I wasn't sure that we would ever actually get that one done. So—

**Reti:** Why?

**Zwart:** In the 1988 Long Range Development Plan there had been a proposal for what was called the Community Access Area. The Community Access Area is the area we now think of as the Arts area, because it had a series of performance spaces; it had the potential for gallery spaces; the University House is there. So a lot of facilities and functions that would draw people from off campus. And it was thought that the bookstore was also a possible source of off-campus traffic. That was the site I was leaning toward early in the discussions about building a new bookstore, [since] it also would put a student bookstore facility closer to the colleges on the west side. Because the east-west balance of facilities, given that the east side of the campus developed first—the bookstore is there, the Office of Physical Education and Recreation Sports (OPERS) and the Fieldhouse are there—there's often a feeling on the west side of those colleges being neglected. So the notion of trying to rebalance things, in my mind at least, pushed it to the west. I think in retrospect, as we took a look at that area, and looking at what growth plans for the division of the arts wound up being, I think it's just as well that the bookstore wound up where it is now and strengthened an already strong student space, and preserved the space in the Arts area for future arts facilities. So I think it all worked out well.

But the other thing that Bender's study did, the Implementation Program did, is it took a look at some traffic and transportation alternatives and studies, both on

and off campus, and got the campus thinking in a very serious way about alternative transportation, something that it's [the campus] done a good job at.

### **Design Advisory Board**

But it said, it's not enough to have a physical plan for a campus. You also have to have a process in place where planning decisions come to the surface, are evaluated, refined, and implemented. That was the name of Bender's document. I don't remember all of the specific suggestions about a process that the LRDP Implementation Program made. I don't remember whether or not it recommended a specific administrative structure or committee structure to review these things, but the thought got carried out. And I'll talk about that in a few minutes, about how the campus planned its buildings.

But one very strong recommendation that it made was the creation of some of sort of design review body that would evaluate the designs of buildings for suitability for the site, conformance with the plan, potential for future expansion, and the like. Richard Bender had set up similar bodies at the Berkeley and at the San Diego campuses. As part of putting this all together, I paid a visit to the San Diego campus and sat in on one of their meetings, which was quite illuminating. It also was structured in such a way—there has been for many years (I'm pretty sure it was in place when I first came here in the mid-eighties) a requirement that capital projects that are large enough to require review by the Regents' Grounds and Buildings Committee require independent design review. A qualified design professional, an architect or a landscape architect, who was not part of campus staff would review individual projects. Each campus had done that in a different

way. When I arrived, when I became campus architect, one of the great figures in Bay Area architecture, Joe Esherick, whose firm had done a lot of work on campus, who had been involved in the original 1963 Long Range Development Plan, and who designed Stevenson College, served on a campus-wide committee which I believe was called the Campus Physical Planning Committee, and he also served as an independent, design reviewer for buildings. So he would often make comments about that in the review process with the Campus Physical Planning Committee, but there were also occasions when we would just review design with him in preparation for (the Campus Physical Planning Committee was known as CPPC) before a CPPC meeting we would review things with Joe.

Other campuses—I believe it was the Davis campus—would select a separate design reviewer for each project, depending on the character of the project, and the nature of the project, and the expertise they wanted to bring to bear. So the policy as written, the Regental policy as written, left the campuses a lot of leeway as to how they would implement it, how they would put it in place. But what became the Design Advisory Board at Santa Cruz (and this is true of, I think they call it the Design Review Committee at Berkeley, and maybe the Design Review Board at San Diego) all three of those are structured in such a way to meet the [Regental] requirements for independent design review.

The sizes vary slightly; the compositions vary slightly but we started moving things forward to put a design review process in place. I didn't see the big necessity of it, because I was pleased with the eye that Joe Esherick was casting on things and the kind of advice that we got from him.

But the chancellor [Pister] decided that that was something he wanted to move forward with, and so we moved it forward. As I said, I visited the San Diego campus and watched that in place. They had the luxury of a very senior architect providing full-time staffing to the review committee, and I knew we weren't going to have the resources to do that. San Diego and Berkeley both were also closer to large areas where there were large concentrations of a really solid design professional community. There's an architectural community in Santa Cruz, but it's fairly small. Most of the big projects are done by outside firms. So we were wrestling with the idea of our distance [from the Bay Area]. And I remember writing a memo to (I think he may have been acting vice chancellor at the time) a man named S.N. Choudhuri, who was also my immediate supervisor—with some possible candidates, both among design architects and architects, some of whom I knew personally and had worked with—Richard Fernau, for example—who was an alumnus and had been one of the architects for the Student Center, or the Academic Resource Center, as it's now known. There were several others that I'd heard about or met very briefly.

So I wrote a brief description and nomination of maybe three or four architects and three or four landscape architects. And as I understand it, they were reviewed by Chancellor Pister and Richard Bender, and Bender advised Pister on the final selection. The three design professionals that were named were Richard Fernau, who I just described; David Rinehart—David is an architect who practiced in Los Angeles with a firm at the time called Anshen and Allen. He had a very, very distinguished architectural pedigree. He was trained at the University of Pennsylvania and worked in the office of Lou Kahn, a Philadelphia

architect who is one of the great architects of the modern era, and had done a lot of work on university campuses. Several people I had known had worked closely with David. I think I had met him just once at a conference, but the people that I knew who knew David spoke very highly of him and what a fine critic he was and what a wonderful person he was. And the third design professional member was a landscape architect named Tito Patri, who I had never met, but who I again had heard good things about from lots of people, including Joe Esherick and Joe's partner, Chuck Davis. And I think probably went and talked to Tito about some of these things, probably to David as well, and they all seemed to be interested.

So that became the Design Advisory Board. And then once it started moving there were some questions about, well, shouldn't the faculty be represented on the Design Advisory Board, so a position for a faculty member was created. And Virginia Jansen who was a professor of art history, or history of art and visual culture I believe they now call themselves—her particular field was medieval and gothic architecture and art, but she had always had a real interest in the planning of the campus and in campus planning in general. So she joined as the faculty representative. That became the core of the group.

We did several things in putting the structure of the group together. First of all, rather than calling it a Design Review Committee, while they were going to review designs, Design Review Committee in the minds of some architects, including mine, can often mean a red light-green light process. You do a design, and do they pass it, or don't they pass it? I wanted more interaction between these very skilled design professionals who were looking out for the immediate



and the long-term interests of the campus with the design team working on a particular project. So we used the term “advisory.” And we modeled it in the way that we did things—I think I talked several sessions ago about the value engineering process, where we would bring together a bunch of disciplines early in the process and talk about how the design would evolve and things to be taken into account. We used that as a model. We found the idea of having conversations even before the project got started, whether it was the complete design, meaning all of the engineering pieces and the architectural integration of them, or just the architectural and siting issues, having that conversation so that expectations and limitations and constraints could be understood by everybody, was very valuable.

So right from the start we got in the practice of, as a project was getting started, meeting with the members of the Design Advisory Board. When the architects had done very little work, or on some occasion, just after we had selected the architect, we would meet on the site, before any real design work had been done, to come to a full understanding of where the project might go and what some of the possibilities might be.

I think our original intention was to rotate members through the Design Advisory Board. I know at UC San Diego, for example—I don’t know what the term of each member is, but they have a rotating term for each membership so it’s not the same. Our idea is that we would drop off a member every year or two and replace them. But this was a body, this was a group that was finding its own way and putting in place the best way to work and so on. After the first year it was really just sort of still feeling its way and getting to know things. And by the

time we got into the third or fourth year it was pretty clear that this was a really quite remarkable group of talented people. They didn't always agree. Tito would bring a landscape architect's design; the architects would bring an architectural perspective. But they could talk about that. They were an extremely compatible group, and I probably need to add Virginia into that mix. I focus so much on the design professionals. But she was an important part of the mixture as well because she had a lot of history of the campus and a lot of concern for the campus.

So after we got three or four years into it, we said, "Well, aren't we supposed to make a change? Shouldn't we rotate somebody through here?" But there didn't seem to be a pressing need to make a change. They were doing a really good job. They were adding good comments. I think when we started David was still in practice. I think he retired from active practice somewhere along the line. Tito's practice was slowing down. But they all enjoyed doing it. They enjoyed getting together. They were willing to do it. And I couldn't answer the question of who do you ask to step down first. (laughs) I didn't want to give up any of them. Because, again, their insights were all different, but all valuable and all good.

I have to say, in retrospect, that my interactions with the Design Advisory Board were one of the most pleasurable aspects of my job. The project managers didn't always like it, or the design architects didn't like it, because sometimes architects would have to go back and rethink something. But all in all I think they have added an enormous amount. I'll mention a few stories about that in a minute.

One of the questions that came up was could any of them pursue work on campus? As I was talking to architects who we thought might be candidates for this, one of the first things they would ask was, “Well, if I’m on the board can I pursue work on the campus?” I didn’t want to scare people away. So the way we resolved that is to say, yes, since the Design Advisory Board didn’t have a role in the selection of design consultants that was not going to be a problem. If one’s firm was selected to do the work, then they would have to step down from the board and we would replace them. That would have determined who stepped down first. As it happened, I think Tito wound up doing a fairly modest planning study for us, but it didn’t rise to the level of service that we felt we had to take him off the board permanently. I think the board first met in 1991. It is getting close to twenty years of meeting with them and they have really done a good job. We would set up monthly meetings and we would bring projects of all size to them. If we didn’t have anything to bring forward we would cancel the meeting.

The other thing we started doing—we really tried to have some sense of interaction and dialogue between the design architect and the Design Advisory Board. We had conversations going back and forth. It was also clear that sometimes that wound up being a little confusing. So we got in the practice that we would ask the architects to step outside so that the board could convey fine points of its message to the design team, and then give them formally at the end of the meeting about things to look for next time.

Some of the particular contributions that I remember—probably the most notable one was the campus’s one and only parking structure. It had been a very

controversial project. As the city—I think I talked about this a little bit the other day—the city was lined up to oppose the project and was even considering the possibility of a CEQA lawsuit against it. The city had conveniently overlooked the fact that it had four of its own parking structures and was building a fifth as all this little drama was playing out. As then-Chancellor Greenwood said, “The city feels that when they build parking structures they repel automobiles, but if we build a parking structure it would attract them.” She said, “I don’t understand that. I’m going to have to get the physicists to work on it.”

**Reti:** (laughs)

**Zwart:** (laughs) So it was a very controversial project. People weren’t too crazy about it. But we picked a good site. We worked with the TAPS [Transportation and Parking Services] office, and the building committee picked a firm that specialized in parking structures. Watry Design designs nothing but parking structures throughout the United States. They [Watry Design] brought in as a design consultant, Chuck Davis, from Esherick, Homsey, Dodge, and Davis, since he had a lot of experience on campus. Chuck was quite a master. He’d been through the design advisory process as well. He’s an old pro. If criticisms come up, he knows how to take them back, process them, and get them integrated into the design process. So there was one meeting, and the initial designs for the parking structure were sort of feeling their way around the site. But it was a classic airport parking lot. It was a two-bay parking structure, so there would be four rows of parking with two driving lanes, set up next to each other. One of them was going to be flat, perfectly level or horizontal, and the other one was

going to be the ramp that moved you up to the next level. It really was not a very inspired way to sit in the redwoods. The Design Advisory Board was pretty critical about it. And the story goes, I heard this second or third-hand afterwards, that Chuck Davis was there and afterwards he met with Nick Watry and said, "Don't worry about it. We'll get through it. We'll make it better." And working together, they came up with the solution that actually got built.

There were the Design Advisory Board's comments and then there were also the soil problems. The soils on the campus, particularly the geology of the campus, is very tricky; it's very unpredictable. There's karst, which is a marble formation that tends to form voids. And you don't want water running down into it, because that can widen the voids and threaten building collapse. The geotechnical engineers who have worked on campus over the years have developed a series of strategies to contend with that. And for this particular site, which is at the corner of Heller Drive and McLaughlin Drive right on the west side of the Science and Engineering area, in addition to concerns about the geological structure, there were also some expansive soils on the site. And there's a tendency with expansive soils if they're not treated properly, when they get wet, to expand and crack foundations and move buildings around and so on. So the geotechnical engineers, after they looked at their soils borings and explored the geology of the site, recommended that once the building was sited and designed, that as part of the construction process that soil underneath the bottom of the footings of the buildings be excavated five feet below the bottom of the footings and fifteen feet on all sides of the footings. And then once the soil was removed, be put back in, treated with chemicals to solve the problems of

expansive soil and to make it extremely dense, and then compact it to what's called a ninety-five percent compaction rate, which if you were to go out there with a shovel you just couldn't put the shovel into it. It's extremely dense dirt. And then the foundations would go up from there.

Well, nobody wanted to see a swath fifteen feet wide cut around the whole perimeter of the building, because it was a forested, wooded site. And Nick Watry, who does nothing but parking structures, said, "Well, we can solve that problem by moving the foundations of the building in fifteen feet and building columns there, and then cantilevering the last fifteen feet of parking area out into the forest. That way the area that we over-excavate will line up with the exterior perimeter of the building. Because it will be fifteen feet beyond the column line, but it won't be fifteen feet beyond the exterior wall. The cost of cantilever construction is greater, but in this case some money was saved because we didn't have to excavate as much. Furthermore, it gave Nick Watry a lot more leeway in the way he was to design the configuration of the building itself. So once the Design Advisory Board said, "You know that business of a horizontal one side and a sloped other is pretty awkward"—and then the idea of pulling the columns in—then Watry made the conceptual breakthrough.

The building is more or less a rectangular in plan (there's a little offset to account for the site and the configuration of trees) but it's roughly a rectangle. In thinking about how the building was to be organized and designed, he divided it into quadrants. And given the clearances that were needed in a parking structure of this kind, the floor-to-floor height is eleven feet throughout the building. He divided eleven feet into four equal sections. Eleven feet divided by four is two

foot, nine inches. He then essentially thought of each of the quadrants—as you drive into the building, let me visualize it from above. I think you’re going counterclockwise, if I remember correctly. I was just there this morning. He configured it in such a way that each level would be two foot nine above the previous one. In that way the lines on the exterior of the building would be purely horizontal. You wouldn’t see any of the slope at all. Once you got to the midpoint that divided the quadrants of the building, when you got to the midpoint of each side, the next one would be two feet nine higher than that. Then the inside became a spiraling ramp that corkscrews up to take that up into place. If you go into the building and look at it, the fact that the exterior lines, the top of the handrails, for example, aren’t sloped, is taken up by the cross slope of the driving surface. So it was a very clever and sophisticated geometry, but it worked out very, very well. And the other really nice feature, when you pulled the columns in, there are no exterior walls to block your views out into the forest as you move through the parking structure. So you really have a sense of climbing in the forest. And if you want to get metaphorical about it, the columns are tree trunks, and all that kind of stuff. But it really became quite a very sophisticated and nice, thoughtful design. A lot of it came from the Design Advisory Board and the kind of input that they gave.

We knew the kinds of questions, the kinds of concerns that would come from the Design Advisory Board members. And as we did our architect selection process we looked for architects who were going to be able to work well with the Design Advisory Board. I remember doing some work down at Long Marine Lab, doing some master planning work and some building work. There had been a firm who

had not done on any work on campus, the SRG Partnership from Portland, Oregon. They had come in on a joint venture with a San Francisco firm, Ripley Associates, for what at the time was Natural Sciences Unit 5, then became the Chemistry Building, and then over time morphed into the Physical Sciences Building. But we were in an architect selection process (I think this was back in the early 1990s), and although we didn't pick Ripley and SRG for the Chemistry Building, SRG's portfolio had several marine research facilities in Oregon. And we kept them in mind for work at the Long Marine Lab.

So when we were looking for a firm to do some master planning and work at the lab we kept them in mind and let them know about it. They wound up, I think, being the alternate firm in that selection process, but we wound up not having a terribly good relationship with the selected firm. So then we went to them and they became the architects who finished up the master plan and designed what became the Marine Discovery Center. But Jon Schleuning, who did his design training at Berkeley and actually worked in San Francisco before going up to Portland to open his practice—was extremely good in the Design Advisory Board meeting because he talked very much about the context, and his analysis of what the site was and how that affected what he might do in the design. We saw the same thing as Moore Ruble Yudell worked on the Physical Sciences Building, or as Anshen and Allen worked on the Engineering Unit 2, or with the various projects that EHDD did. It became a very interesting give and take. I would say that the Design Advisory Board was the one time a month when I really felt like an architect, being part of those conversations. They've added in very big ways to the physical fabric of the campus and really improved it.



That was the specific process recommendation that grew out of the 1991-93 Long Range Development Plan Implementation Program. But we also saw other changes in process over time, since the time I joined the staff and became campus architect, and now. I think the other one that we always worked for, was to work very hard for an integration of the various phases of development of a project. When I first started working on campus and in my early years as campus architect, there were two major pretty high-level committees that were involved in the capital project development process. One was called the Space Committee, and one was called the Campus Physical Planning Committee. And if there was any overlap between the two, it wasn't very significant. There was very, very little. But they each had a key role in moving a project forward. The Space Committee would review everything related to the space needs of the campus. So they would review space plans. They would review the five-year capital program that was put together and continues to be put together by the Office of Capital Planning and the Office of Planning & Budget. And they, in theory, again—I don't remember the composition of the Space Committee because the campus architect only went to that occasionally, at least early on. But they were very much involved in the early phases of the project. So it was their job to see and to determine that the use of capital resources was in line with the academic intentions of the campus. There were a number of academics on it. There may have been several deans on it, or representatives of the deans. That was the body that said, yes, this project reflects an academic intention of the campus; yes, this is where we want to spend our money; yes, this is what the plan looks like. The Campus Physical Planning Committee tended to have members who were

interested in the physical development of the campus. I know Lan Dyson was on it, the former University Librarian, because he had that interest. Jim Pepper, a professor of environmental studies for many years, often was on the Campus Physical Planning Committee. Virginia Jansen, who I mentioned earlier as a long-term member of the Design Advisory Board until her retirement a few years ago, was often there. Joe Esherick, the outside consultant to the campus. Vice Chancellor Brase. If it wasn't chaired by Vice Chancellor Brase, he was often there. They were interested in the physical development of the campus, and so it was up to them to oversee individual projects or developing plans, to make sure that it was in keeping with the Long Range Development Plan.

But one of the things that we found was we would get into that body, or we would take a project to the Design Advisory Board, and someone would say, "Well, who says the campus needs this project anyway?" (laughs)

**Reti:** (laughs) Yes, I could imagine the bifurcation there.

### **Campus Physical Planning Advisory Committee**

**Zwart:** So that was a difficult question. Furthermore, every now and then we'd get a dean not quite understanding why some physical decision was made. One of the things that I thought was important, and we moved toward and actually got there, was to figure out a way to have the same people talking about the capital planning and see how it was going to be implemented. So in a series of evolutionary changes we wound up making—there was the Campus Physical Planning Committee, and then when Karl Pister came in, since everything was advisory to the chancellor and the chancellor made the final recommendations to

the Regents, it became the Campus Physical Planning Advisory Committee.

Again, I don't remember the exact chronology of this, but again, that bifurcation was still there with the CPPAC.

And so, somewhere along the line, I asked if there wasn't a way that we could get the Space Committee to include the deans as the prominent academic officers, and also have that committee look at the physical plan as they develop it, even if it's a matter of reporting back. And in fact, that's what happened. It's a big portfolio for that group, but it is a forum within which both the five-year capital plan and the way it's being implemented can be discussed. Typically, over time—then there was the Capital Improvement and Space Advisory Committee, and then it became the Advisory Committee on Facilities, and now Stewardship and Sustainability are being added to its name. But despite the changes in name and the slight change in focus, the focus of it is really facilities. And that includes the budgeting part, the design and construction part, and now the operations part, particularly with sustainability coming in. But it's a forum where senior officers can see how all of that is done.

One of the concerns that we've always heard about through the Office of the President from the Regents is, the Regents want to be sure that when they see a project it's in keeping with the academic intentions of the campus, with the academic goals of the campus. And one of our strongest responses to that, or our arguments to that, is—these things all get discussed with all of the deans. It's all there. They all have a say in the process. I think that's been a very important step.

One of the small steps that we took towards making that happen is that a number of years ago Tom Vani, the Vice Chancellor of Business and Administrative Services and I, and members of the Physical Planning & Construction staff, and occasionally members of the Physical Plant staff would have a standing, weekly meeting with representatives of Planning and Budget and Capital Planning. We would coordinate what was going on and we would talk about issues of shared concern. I know that's not a model that's followed at all of the campuses. Quite often the facilities people and the budget people are throwing rocks at each other. I know when Peggy Delaney assumed the role of Interim Vice Chancellor of Budget and Planning a few months ago, after her predecessor, Meredith Michaels, moved down to take another job at Irvine, we continued that practice [of weekly meetings]. I was at a meeting shortly before I retired at which she said that when she goes to the budget vice chancellors meetings and she hears the way they talk about the facilities people, she just felt we were light years ahead in the fact that we get together and work together and can understand this and wrestle that. We've really tried to make that happen at all levels, to integrate those kinds of activities every step along the way. Because where you can really get tripped up in a university's administration is at the hand-off point, where people who finish their piece of it dust off their hands, say, "I'm out of here. I don't have anything left to do." And then it's all somebody else's problem. So that's why, while Physical Planning & Construction always took the lead in design and construction, we tried to keep Capital Planning involved and informed as we went through it so they would know what was coming. And we try to bring the people ultimately who were going to have to

operate the building, members of Physical Plant, into the design process so they would know what was going their way. Again, we can't always afford everything the Physical Plant wants, and there's rocky stuff, but we are talking to each other every step along the way. I think that's a very important result of the way we thought about putting together an administrative infrastructure to make things happen on campus.

**Reti:** So, for example, let's say you are designing the McHenry Library Renovation project. You would involve the people who were going to have actually have to take care of the building and the landscape.

**Zwart:** We work with them. We have a set of campus standards that we give to architects, saying this is what we expect. Those documents reside in different places on different campuses. That's something [at UCSC] that's been under the safekeeping of Physical Planning & Construction. They're always a little bit out of date and they're always evolving. But as we put them together we make sure that Physical Plant has an opportunity to review them, whether it's an issue of grounds and grounds processes, or building processes. There have been more times than I care to imagine or admit where a building is finished and Physical Plant isn't happy about access into important valves to turn off plumbing systems, or turn them on. And it's really hard to get every one of those because our buildings are so complex now.

Most recently, in a building that's under construction right next door, the Biomedical Sciences Building, for the first time the campus is using some electronic tools that really have been developed in a big way in the last five or ten

years. The acronym is BIM, Building Information Management, where a series of different tools that are used to electronically lay out the plans of a building, the elevations of a building, the plumbing and mechanical systems of a building, all get integrated. So again, as we had awarded the contract and were just getting started [on the Biomedical Sciences Building], this technology has come a long way in the last couple of years so our project manager worked closely with the contractor and the architectural design team to actually build an electronic model of the building, as foundation work was going on on campus. And in theory at least, and at the presentations about BIM that I've gone to, the big selling point is that conflicts of—there are times when, for example, in the set of drawings that an architect puts together, because these things are so complicated and they come out of different offices—you could have a plan that runs a duct into a beam. And when you discover that in the field it can be very disruptive.

**Reti:** (laughs)

**Zwart:** Well, by building an electronic model, all of that stuff can be worked out before the fabrication actually starts. So in theory at least, you are going to be able to greatly reduce the number of those conflicts and therefore increase the efficiency of the contractors, get things built faster, more effectively, and, we hope more cheaply.

I went to a meeting where a first version of this model was being shown, and a lot of the Physical Plant people were there. And in fact, part of the model showed access panels where Physical Plant personnel, ultimately the maintenance people

or the engineers who were going to operate a building could see where the access panel was. The design team—the contractors, the architects and the engineers—put in a certain diameter opening to allow room for a mechanic's body, and then make sure that the various valves and so on are within reach.

So involving Physical Plant early on is something that we've tried very hard to do. And again, there are inherent conflicts because our budgets are rarely big enough to solve every problem in advance for Physical Plant. But I think we really try to minimize them.

To that degree, I know I talked earlier about the lifespan of the development of the campus, where there was booming growth in the late sixties and early seventies, almost no growth from mid-1970 to mid-1980, and then booming growth after that. And in that period of retraction, from about 1975 to 1985, what had been two different offices—Physical Planning & Construction, and Physical Plant—had been merged into one and known as Campus Facilities and worked under one head. And then when things got busy again in 1985, when my predecessor, Jack Wolever, was hired as campus architect, they became separate units again. But during that period, probably by an accident of space, we wound up occupying the same building. And for my entire career at Santa Cruz, Physical Planning & Construction and Physical Plant, or at least a good part of them, were in Barn G down at the foot of the campus. I've talked to colleagues [at other campuses] who work in separate buildings from [their] Physical Plant [counterparts], and the fact that we [at UCSC] saw each other every day, we have—not all design and construction staffs in the UC system have engineers on their staff. We do. So our engineers really see part of their job as being advocates

for the needs of Physical Plant as we plan things. I think the fact that we just were tripping over each other all the time really helped in making things work together well. And in recent years particularly, I think Ilse Kolbus during her short tenure as Physical Plant director really did a lot to strengthen those bonds. She was great to work with and I think we had a pretty good working relationship. That sort of integration has really benefited the campus, and as I said before, that's not the same on all the campuses.

I was talking a few minutes ago about the higher-level planning stuff on these various committees. The other thing that we've had to do as we've set up those structures, is that they also need to respond to systemwide administrative structure and academic requirements and statewide requirements. So that gets into the whole question of working as one of the smaller campuses in a big system.

### **Working with the Office of the President**

And the other thing is, that as much as we talk about changing the way the administrative structure on campus works to make things better, one of the things that you always have to remember at any University of California campus, but particularly at its smallest one, is that there are a lot of outside factors that influence you as well. You are not always master of your own fate. In our case, there's the Office of the President and its policies and practices, which then get interpreted and carried out in nine or ten different ways on the ten different campuses. But what we do on campus needs to be ready to respond to that and to work with it as well.



And it's both one of the great blessings and one of the great curses of being part of the University of California system, particularly one that was set up to be somewhat different. If you look at the general structure of the University of California campuses, they are very discipline-oriented, division-oriented, and the like. Santa Cruz was going to be college-oriented. I think we talked about this four or five sessions ago when I talked about the challenges of Colleges Nine and Ten, that the University's overall administrative structure and the way financing worked just didn't lend itself to the development of colleges in a way that, had we been working on a university campus that was a single entity, those systems, those processes could have been crafted to make doing a college the way you did business. It would have been different if we were a private school. We've always had to fit within much broader policy guidelines, process guidelines, and the like.

We've also, working with the Office of the President, they'd also faced the challenges of the funding side and the implementation side. Probably in my time here, the biggest frustration I had is that those two sides didn't always get along up in Oakland, first Berkeley and then Oakland. You often had the sense that they were at war with each other. I think that's changed recently. There was a woman named Katie Lapp who was the Executive Vice President for Business Operations. She made some remarkable moves to bring those together. I think the campuses probably did a little bit better than the Office of the President in those sorts of conversations, maybe simply because we were smaller. But whenever we would have frustrations with OP, at the root of it was often the fact

that there wasn't well-integrated activity between the budget side and the implementation side.

That said, I always tried to express a considerable amount of both sympathy and appreciation. The budget people didn't have an easy job because they were dealing with Sacramento all the time, and that can't be easy. And the politics of bond measures and that sort of thing. Likewise, and I only got some glimpses of this relatively late in my tenure, the implementation side often had to deal with the making of public works law. And I know that can be pretty strict.

A couple of years ago the Office of the President asked for representatives of the campus to be available to go on what essentially was a lobbying expedition to Sacramento to argue about some changes in the law that the University was supporting. At the time, the University could negotiate construction contracts up to \$50,000 but had to go through a public bidding process for contracts larger than that. And that \$50,000 figure had not been changed for, I don't remember, fifteen, twenty, twenty-five years. So in fact with inflation, it had really shrunk to significantly less than it originally was. The University was just asking for it to be adjusted to something closer to inflation. I think they were trying to get it up to \$100,000. And OP, who was spearheading this effort, was trying to get people who had firsthand experience of the operational advantages that something like that would bring. I wound up being the only campus representative able to go on this particular day.

I guess systemwide has an office in Sacramento and that's where we met. Then we walked over to the Capitol Building for a meeting with a legislator. I think

she was a member of the Assembly from Southern California. The University had its government relations people there and the University's lobbyists there, shock! shock! shock! And some of the parties in this meeting were—I could understand why they were there. But the representative of the laborer's union was there. I thought to myself, whether we negotiate the contract or whether we bid the contract, having the work in the contract is it's all the same—what are they doing here?

It was a pleasant meeting. It was an interesting meeting and there was a lot of back and forth. The law ultimately got changed not quite the way the University wanted, but it was improved. But I was talking to a colleague, one of the attorneys in the Office of General Counsel that we work closely with, who had done a lot more of this than I had. He said, "They [the laborer's union] really didn't have anything at stake in that legislation, but they knew that they could help pass the legislation by supporting it. And they were going to want something from us. It was, all 'let's make a deal.'" I'm taking a long time to tell a story to illustrate why I had both appreciation and sympathy for what the Office of the President did and the battles that it had to fight in Sacramento.

That could often be frustrating but we did work with the Facilities Office up in OP, and particularly with the Office of General Counsel, with some very capable, dedicated people. It's hard to imagine having accomplished what we accomplished without them. But OP is subject to the whims of the Regents and the president as well.

So, for example, as things got busy again, as construction activity took off in the late 1980s and early 1990s, someone up there actually managed to convince either the president or the Regents to make an investment in personnel within the Office of the President to monitor legislation, but also to put together a program to train project managers on campuses, and to provide professional development opportunities. They set up something called the Project Management Institute, where they would offer courses a couple of times a year on things like how the public works law is changing, or [construction] schedule analysis, or the like.

Sometimes they would just do one [session] for the whole system. Sometimes they would do one for northern campuses and one for the southern campuses. Sometimes they'd come to the campuses and talk about things. And that was enormously useful on two counts. One is, it was just good professional development for me and the project management people on our staff. But it also was a terrific networking opportunity. It let people know that they weren't in this alone, and by just knowing people on other campuses, to get on the phone say and say, "Have you ever seen this?" Or, "Do you know that contractor? Have you ever faced this problem?" It was an enormous, enormous resource. It was one of the great strengths of the University.

OP did a lot of remarkable stuff. When I joined the staff in 1985, for a major construction project there was essentially one form of construction contract, under which an architect or engineer or team would put together a set of construction documents, contractors would bid on it, and low-bid would get the project. Design-Bid-Build, it's called. Over time, as the construction industry has

become more sophisticated, a number of other contracting mechanisms have come into place. And OP, again, I think quite sensibly, because you don't want ten different sets of contract documents running around on ten different campuses, put together contract documents that would make—whether they call it Design-Build, or Construction Manager, or Construction Manager at Risk—they would put together a set of construction documents available to any of the campuses to use, that would reflect appropriately State Public Works Law and University policy, so that we could put all of those together.

To have to sit down and do that campus-by-campus would have made no sense at all. I think they did really quite a remarkable job. We used some of them quite successfully on campus. The Engineering Building, for example, the second Engineering Building was one of UCSC's first examples of Construction Manager at Risk, where we managed to pick the contractor before all of the drawings were done, and they had valuable input into the design of the building. And we were able to go on an accelerated basis from really the beginning of the design to completion of the building on a 45 million dollar engineering building in about 39 months, which in the University of California is pretty remarkable. So a lot of that is attributed to some of the very, very good staff work that we saw up at the Office of the President in getting those kinds of contracts in place, and the support we had from them and from the Office of General Counsel has been quite invaluable.

## Different Kinds of Construction Contracts

**Reti:** Construction Manager At Risk. Can you please explain briefly what that means?

**Zwart:** Under the original method that I described—Design-Bid-Build—contracting is typically done by a general contractor who signs a series of contracts with subcontractors, typically each in a particular discipline: steel, mechanical systems, plumbing, drywall, paint, roofing, and so on. So when we issue a set of documents for bid under that scenario, the architect and engineers draw these all and don't divvy up the work. We rely on general contractors as bidders to come in, review the drawings, decide which subcontractors to use, get bids from all of the subcontractors, put them all together and then submit bids to the university. And we then open the bids. There is a deadline. Any bids that come in after the deadline you have to reject. You open the bids and under state law the contract is awarded to a responsible contractor with the lowest responsive bid. There's one contract that the University holds with the contractor, but at the time that the University awards that contract the design is complete and the contractor is in a position to issue a series of subcontracts with its subcontractors.

In a construction management scenario—and how this done depends in part on whether you are in the public sector or the private sector, construction management is a fairly broad term—but the owner selects a construction manager, typically before the design is done. So the architect may still be working on the design. And there are various mechanisms under which you can

pick that. Now, if I were at a private institution or working for a private company, I could just get on the phone with a contractor who I know to be qualified, "We're building such-and-such. Will you serve as construction manager for me?" Or I could call four of them and interview four and pick one. Under the University's scenario, there are a couple of ways to do it. One way is that you could do that but you have to go through a competitive selection process. There are two ways. The University can either hire a construction manager as an advisor, or a construction manager as a general contractor.

If you hire a construction manager as an advisor, you still have to go through a selection process but the process is similar to the one you use to pick an architect or another consultant. You advertise. You interview. But you don't have to take in low price. But if you've done that, unless they've gone through the full-blown bidding process, the contract you hold with them is simply for their services as an advisor. Then they will assist you in putting the bids together, and typically what will happen is on a major project is there might be twenty to thirty subcontracts. The University would enter into those twenty to thirty contracts directly with the subcontractor. In that circumstance what we normally call subcontractors becomes known as a prime trade subcontractor and the contracting mechanism is known as "Multiple Prime Contracts." That's how we built Colleges Nine and Ten. So sometimes there are reasons to do it. Some campuses have done it quite well. We did it once. The outcome was okay but the road getting there was pretty rocky. The only other time we used it was when we were in a big hurry and there were some advantages to doing it when we were

trying to repair some significant fire damage after a fire in Sinsheimer Labs.

So we did Multiple Prime.

The other way, CM [Construction Manager] at Risk—under public contract code you have to make the selection based on a low price. So in that circumstance we go through a bidding process, where again, the drawings aren't complete. And you can do the selection process at several different stages along the way. The way you do it is tuned up to match where in the design process you are. So you can do it with very general design drawings or you can do it with almost complete construction documents. Typically what we've done is to ask contractors to state their qualifications. So they will submit answers to a series of questions and some work experience and so on. Then those are graded. We have a grading system. Let's say it's a one hundred point scale, and anybody who gets above seventy is qualified to move on. Then typically we would do a series of interviews where we would interview the contractors and their staff, and again grade that. Anybody who meets a minimum threshold then can submit a bid on the process. What they bid on, since the full drawings aren't done and since they can't turn drawings over subcontractors, is we put together a scope of services that we expect a general contractor to provide, and that's his job—job trailers, telephones, cleaning up, fencing and all of that kind of stuff. Those are called the general conditions. Plus a fee. Now, contractors normally call fee overhead and profit. That's where they make their money and it's usually based on a percentage of everything else. So typically we get a price and we assume that the value of all of the subcontractors is going to be a certain amount of money. So let's say it's 40 million dollars. So if somebody bids 6.2 percent of 40 million



dollars that gets calculated. And then the lowest bidder there becomes the CM at Risk. They work with us and the architect to finish the drawings.

Once the drawings are done, the construction manager working as a general contractor supervises getting the bids from the various subcontractors. And then the lowest of each of those prices is taken. Those all become subcontracts between the subcontractors and the construction manager/general contractor. That determines the final price of the contract. That and the fee that the contractor quoted is used to calculate the value of the contract that the University then signs with the general contractor. The University is just holding one contract, rather than twenty or thirty.

**Reti:** I see. Thank you.

**Zwart:** So what that lets you do, if you can figure out a way to identify the construction manager early on, you can get input from the construction manager as to constructability and so on. So, for example, on the Engineering Building, the design that the Regents saw and approved—it's a long east-west building, so the south face of the building is exposed to a lot of sunshine during the day, and the architects had designed a series of horizontal louvers to shade that face of the building. As the design was moving forward, the architects and the mechanical engineers started calculating what the depth of those louvers had to be, what it was going to take to hold them up. Given the sun angles they wanted to protect from, that was going to be a pretty substantial piece of construction all by itself. At this time, the construction manager, DPR, had already been selected. And they knew because the bottom had fallen out of the construction market in the

Silicon Valley, they knew that there was lots of what's called curtain wall, window-manufacturing capability being unused in the general Silicon Valley area. They also knew that because Santa Cruz is a relatively small community, often procuring laborers, workers on the site, was a challenge. And finally, they also knew that there was high-tech glazing available now that could shade the inside of the building without having to do the louvers. So they suggested to the design team, "Well, if you use high-tech glass we can have it prefabricated offsite, and you can save money and speed erection. We have less work to do in the field."

So the architects took that and ran with it and came up with a very clever and sophisticated modular system of semi-random patterns of colors and shapes and so on. But essentially, if you look closely at the south facade of the Engineering Building you will find—I don't remember what the exact dimension is—but a repeated module of size of windows, all of which were made in a factory. So when the building was under construction, once the steel frame had been erected and window installation started, they were just trucking these prefabricated units over the hill and there was a crane on site that would lift them up and hoist them into place and they'd be fastened to the building. In fact that erection process went so smoothly that they had to stop it so that the factory could catch up and finish making all of the windows. But by having the input from the contractor early on it affected the design, the cost, and the appearance of the building in a very favorable way. We were able on that project, for example, to start work on the site even as the architect was finishing the drawings for the rest

of the building. So there were some real advantages that we've been able to exploit for that building.

We've had good luck. We did Construction Management at Risk for the Humanities and Social Sciences Building, and also for the McHenry Library Addition. It's proved to be a very good mode of contracting for us.

**Reti:** Great, thank you. That's very clear.

**Zwart:** But it also means that early in the development of the building you have to think about not just what is the design going to look like but how are we going to build this thing? What contracting mechanism makes sense for this kind of building, for this dollar value? It probably doesn't make sense to do Construction Manager at Risk for a four million dollar project in Santa Cruz. It really only suits itself for larger buildings. So that's the kind of discussion that we got in the habit of having early on in a project as we evaluated the process and looked at a schedule and looked at all the pros and cons. So in that way the design and construction business on college campuses has gotten a lot more sophisticated and a lot tougher.

**Reti:** In the interface with systemwide, and this providing of training for project managers and these kinds of templates for different types of construction agreements, were there any ways in which UCSC's unique qualities posed a challenge, where we didn't quite fit the mold?

**Zwart:** Not really. That really is more on how budget resources get allocated. Because we are a state agency and part of the University of California we need to

follow public contract code. And secondly, even if we weren't, even if we were able to use—there are other organizations that have standard forms of construction contracts. The Association of General Contractors has a set; the American Institute of Architects have a set that are commonly used within the design and construction industries. We would have to play within those rules anyway just because that's how the business is done. So even if we were Reed College, as an example, we would have to have some form of construction contract. There's a body of law that governs construction contracting. It's complicated in our case because we have California's public contract code to deal with. So whether we're organized by colleges or by divisions and departments, the design and construction business is independent of that, other than the decision that we make about what we're going to build and when we're going to build it and how we're going to fund it. I think the kinds of influences that had us being out of sync were probably best illustrated by the Colleges Nine and Ten example I talked about a few interviews ago.

### **Funding the University of California**

I remember (and in fact I was just telling this story over the weekend), when I set off to become an undergraduate at Santa Cruz in the late sixties, one of the best high school teachers I had was our high school math teacher. I went to a Christian Brothers high school in Pasadena. He was a Christian Brother. Our class, our freshman class in 1963 was the first class he ever had, and we had him several times after that. He went on to get his master's in mathematics and a PhD in mathematics and has been on the faculty of St. Mary's College in Moraga for many years, with some time off at other institutions, including setting up a

teacher's college in Kenya. But he said, probably about the time I came as an undergraduate, he said, "That college idea at Santa Cruz is a nice idea. But it's never going to work because the University of California won't let it. [UC] Berkeley invented departments. And the pressure of departments and powers is really going to affect the development of Santa Cruz." That, in fact, is what we've seen over the forty or forty-five year history of the campus. That's how business in the University of California is done. That said, I think we've done a pretty remarkable job of keeping the colleges alive. But I don't know what it's going to look like in ten years. There's just no way to know that. But that's a little bit out of my line of work.

**Reti:** (laughs)

**Zwart:** The head of the state-funded capital program in the Office of the President would often say at meetings, to the campus architects and planners, "We're moving from a state-funded to a state-assisted institution." And my response to that was, "Okay, but I'm not sure we're the ones you need to tell that. You need to be conveying that to the chancellors." I think the chancellors are probably perfectly aware of it. The difficulty is, and people in the budget office can give you the figures of how the percentage of state support has declined over the years. But even as it shrinks, the University is still very tied to the state funding cycle and to the state public works contracting code. I don't see that changing anytime soon. There have been some little tweaks to it over the years. But unless we pull away and do something completely independent, at least on the design and construction side, I don't see any big changes.

There's a lot of talk systemwide and at the Regental level, as I understand it, about pursuing more public-private partnerships. But that's something that the Santa Cruz campus has done very little of. The closest to it may have been a couple of buildings built down at the Marine Lab, where the UC Santa Cruz Foundation took the lead and held the contracts and got those things built. On the one hand I guess legally that's a distinct entity from the university, but it's so closely affiliated with it, that's a pretty blurry line between the two, and it's not something that UCSC has done. I saw an architect last week who was involved in a project at UC San Francisco where a private company is planning to build a facility that will then be leased back to the campus. But we just haven't gotten there yet, and we may, but I don't see it coming in the near future.

**Reti:** Also, Frank, I know you had wanted to talk about the importance of bringing other campus properties like NASA-Ames and Mt. Hamilton into the planning process. I know that's backtracking a little bit.

### **More on the LRDP Implementation Program**

**Zwart:** Oh, I'm glad you—Yes, and I want to go back even further, because that triggered something else that I wanted to say about the Implementation Program, that I started this morning's conversation with, that I meant to conclude with, and then we got distracted off into the administrative and process questions.

Going back to the thinking about the campus that grew out of the Implementation Program from 1993, and I mentioned Richard Bender; I mentioned Skidmore, Owings and Merrill. At the San Francisco offices of

Skidmore, Owings and Merrill at the time was an architect and urban designer named Phil Enquist, who really took the lead for them in putting that [Implementation Program] together.

Just moving forward into the more recent past, the Regents have asked each campus—actually this is an interesting blending of design intentions and process questions. Part of the process challenge that the University has faced is that officially speaking, any capital project of more than ten million dollars with exterior impact (a renovation project wouldn't be subject to this, for example) needs to go to the Regents Grounds and Buildings Committee for design approval. And given that they only meet every two months, that creates some scheduling problems and so on. So there's been a lot of talk, really at all of the campuses, about, can't we get more authority delegated to the chancellors? The Grounds and Buildings Committee has pretty much lasting impact on the University. It shapes the University for years to come. It was reluctant to give up that kind of oversight without some reassurance. So the Office of the President put in place what they called a pilot program, under which—if each campus were to prepare a ten-year financial and capital plan that shows its capital aspirations, its facilities aspirations, how it ties to the academic program, and how the resources would be available, and what the University wound up calling a *Physical Design Framework*, and present them<sup>32</sup> to the Regents' Grounds and Buildings Committee—then Grounds and Buildings would delegate to the chancellor of that campus authority to approve projects up to sixty million

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<sup>32</sup> The financial and capital plan and the physical design framework.

dollars rather than ten. So these have been rolling out [from the various campuses] for the last two or three years. So really, the last concerted effort that I worked on before I retired was the campus's *Physical Design Framework*. At the heart of the *Physical Design Framework* were those original guidelines that came out of Bender and Enquist's report. Because it does so clearly say—"here's how we think about the campus." And that really wound up becoming a very useful tool to bridge that gap between a general Long Range Development Plan and not just building siting, but building design and how we thought about things.

I worked with John Barnes and Dean Fitch on putting that together. We're hoping—we talked about it [UCSC's *Physical Design Framework*] being a legacy document that explains to our successors how we thought about the campus and how we got to that point. That's a piece of work that we felt really good about.

**Reti:** And then was part of that framework making sure that these other campus properties were included in the planning process?

### **The Marine Science Campus**

**Zwart:** That's right. So, as we talked about it, the Implementation Program from 1993 focused on the main 2000 or 2030-acre campus that we think of as UC Santa Cruz. But there's also the possibility of having facilities at some of the other places around the Monterey Bay. And one of the things that the campus has tried to do is to extend its geographical presence and geographical reach, probably most obviously at the Marine Lab, and that's a whole different story in itself. Our other facilities include UC MBEST Center—the Monterey Bay Education, Science and Technology Center at the former Fort Ord; the Marine Lab, I mentioned; Lick



Observatory at Mt. Hamilton; and then a series of Natural Reserve areas that are part of the University of California Natural Reserve System. And while we hadn't done frameworks for those, we included them as a chapter in the *Physical Design Framework*, first to remind people who operate those that they are affiliated with the UCSC campus, but also to stress the importance of the general principles of trying to understand what you're about, what your academic program, your academic intentions are. Try to understand the physical characteristics of your site and then do planning in a way that takes advantage of the uniqueness of the site to meet the needs of the academic program. We will do that quite differently at Long Marine Lab, or as we're now calling it, the Marine Science Campus, than we would at the main campus or at any of the research stations that are part of the Natural Reserve System, or up on Mt. Hamilton. But we also wanted to make the Regents aware that those were parts of the campus and part of our influence.

The biggest of those and the most challenging of those is the Marine Lab. I don't remember when the original research buildings at the Long Marine Lab, at the fourteen or seventeen acres down there were done. I think it was in the late seventies or late eighties.

**Reti:** Ken Norris was involved with that.<sup>33</sup>

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<sup>33</sup> See Randall Jarrell, ed. *Kenneth S. Norris, Naturalist, Cetologist and Conservationist, 1924-1998: An Oral History Biography*. (Revised Edition, University of California Press, 2010) Available at: <http://www.ucpress.edu/book.php?isbn=9780972334334>

**Zwart:** Yes, Ken Norris and John Pearse were very much involved. EHDD were the architects. And in fact, I know Chuck Davis has often said that it was his work on the marine lab that then was his entrée into the Monterey Bay Aquarium, which his firm went on to design.<sup>34</sup> And as a result of that, they [EHDD] did aquarium projects all around the world. Then there had been a series of unsuccessful development efforts of the property next door. It was old Brussels sprouts farms. I don't know the exact history of it, but some subsidiary of Wells Fargo Bank had tried unsuccessfully and never gotten approval for some housing projects down there. And if I remember correctly (this was fairly early in the coincident tenures of MRC Greenwood as chancellor and Tom Vani as vice chancellor), the university was able to acquire about 100 acres down there from Wells Fargo on a discounted sale, and began master planning for additional facilities down there. This growth was the vision that Ken Norris and one of his successors, Bill Doyle, had.<sup>35</sup>

So over time, we did a series of master planning efforts down there that culminated a few years ago in what's called a coastal long range development plan. A coastal long range development plan is distinct from the long range development plans that we develop for the campus, although the terms are the same. "Coastal long range development plan" is a term that's used in the California Coastal Act for UC or CSU campus lands within the coastal zone.

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<sup>34</sup> Work on the Monterey Bay Aquarium began in 1980.  
[http://www.greatbuildings.com/buildings/Monterey\\_Bay\\_Aquarium.html](http://www.greatbuildings.com/buildings/Monterey_Bay_Aquarium.html)

<sup>35</sup> See William Doyle's 2011 book *UC Santa Cruz: 1960-1991; Campus Origin, and Early Program and Facility Development in the Sciences, with Special Emphasis on Marine Sciences*. The book is available at [www.lulu.com](http://www.lulu.com).

Those actually get prepared under the direction of and collaboration with Coastal [Commission] staff to meet the standards of the Coastal Commission. They are much more detailed than the long range development plans that we do. In fact, they get to a level of detail that's even greater than many of the planning studies that we put in place.

So it was a long process that the campus went through to develop a master plan for the Marine Science campus, to flesh it out in an area plan down there, to work with Coastal staff. John Barnes in our office and Steve Davenport, who is the assistant director of the Marine Lab, Marine Science campus, spent endless meetings with Coastal staff going over every semi-colon and comma and period and use of phrase. There was a long environmental review process down there.

But as a result of all of that, we got a coastal long range development plan that had been approved and certified by the Regents and certified by the Coastal Commission. So we do have a separate long range development plan for that campus, that then gets referred to in the *Physical Design Framework*. But it will guide very strictly what goes down there. And in theory at least it will mean that as we develop there, provided that we follow strictly the guidelines in the Coastal LRDP, that the amount of Coastal Commission review will be greatly reduced. We'll see how that goes. And in fact work is underway now on the design of some initial facilities. We have a project coming down the line in a state-funded facility for our Coastal Biology Building that would be built down there. I think that after I retired the campus made a decision in hopes that there will be some money available in the state capital program to at least move

forward into the earliest phases of design so that we are ready to go when funding becomes available.

### Teaching Architecture Classes at UCSC

**Reti:** Today is August 26, 2010 and I'm here for the seventh interview with Frank Zwart. So Frank, today let's start by talking about the architecture classes that you taught at UCSC.

**Zwart:** Well, I only did it twice, and it was during a period when there wasn't a lot going on in the design and construction world, a dip in our activity. Virginia Jansen, who was a long-time art history professor and had long interest in the development of the campus and in campus architecture in general, would teach courses on modern architecture from time to time. Her period was Medieval and Gothic. And back in the early to mid-nineties, whoever was teaching modern architecture for art history was away and they didn't have anybody to take their place. Virginia was serving on the Design Advisory Board at the time and I said, "Do you need somebody to teach modern architecture?" Within a week or two I had it approved and I had a letter of appointment from the dean. And since the division or the department wasn't going to pay me, it was very welcome. (laughs)

**Reti:** (laughs) Oh, I see.

**Zwart:** I agreed to do a one-quarter course in what is called modern architecture, and it really wound up being the late-nineteenth and early twentieth century architecture. It probably went up to the 1950s or so. It didn't get into what

became post-modernism or anything that developed after 1960 or 1965. It was really focused on the transformations in the way that architects thought about architecture that grew out of the industrial revolution. That's where the course started. The education that I had at Princeton was very historically oriented with a lot of courses in architectural history and theory, modern architecture in particular. I had a decent library built up about that, and I had kept all of my lecture notes. Even some of our design courses got into architectural history. It was a challenge. I put together a course outline and passed it out the first day. Virginia gave me some tips about dealing with the students. She suggested handing out a little form to get some background on the students. These classes were, I would say, on the order of thirty-five students.

So I did sketch out a fairly traditional progression of lectures. This was pre-PowerPoint so I spent a lot of time in the Slide Library. The campus had a really quite a good collection of slides of modern architecture. So it was very helpful. It was a lot of work. I had forgotten how much work it takes to put a class together. There were some mornings where I had the alarm clock set for four o'clock to get up and finish up my lecture notes to be able to deliver the lecture that afternoon. But I got through it and it was interesting. Because, as my wife said, most of my work at the university was problem-solving on the administrative and design and construction side of things. And that meant most of my days were filled with problems. She said, "You had an opportunity to see something other than the pathology of the university. You got to see it doing what it does."

So I did it twice. I think it was 1993 and 1994, or 1994 and 1995—something like that. And then we got busy again and the campus hired somebody with a PhD in

architectural history who really was more qualified to teach. But it was really quite enjoyable. The kids were interesting. Following Virginia's advice, I did hand out a little sheet that said, "Who are you and what's your college? What do you know about architecture? What's your interest in this class? What's your major?" I was struck both of the years that I taught it about the interesting range of interests that students at Santa Cruz have. I don't remember the particulars of double majors, but you would see things like anthropology and economics. There's the practical major and then there's the major that the student is really interested in. I found that that was all very good.

For some of the students it was kind of tough because a lot of training in architectural history is identification. They had to learn how to tell one building from another. And there were slide IDs as part of both the midterm and the final exam, and that can be a challenge for people who aren't used to working visually. But it was fun. I had them each do a paper or a project. It was enjoyable and it helped me appreciate the depth of my own architectural education as well.

**Reti:** Did you cover UCSC architecture?

**Zwart:** No. We might have talked about it, used it as examples to make certain points, but this was really the masters of modern architecture, as I said before, starting more or less at the industrial revolution, moving through the Arts and Crafts period, and William Morris and the Craftsman movement in England, how that spilled into Art Nouveau and then that led into the Bauhaus. And of course then the flight of so many European architects to the United States during World War II, and then how the International Style and modern architecture

came to the United States that way. And of course another parallel path with the American developments, the Chicago Columbian exposition, and then Frank Lloyd Wright and all of that sort of thing. I would say from about 1870 to 1950, 1960 was the time period that I covered.

**Reti:** And I seem to have come across something about you leading an architectural tour with Virginia Jansen?

**Zwart:** Oh, that was just a one-day thing. Virginia is very active in the Society of Architectural Historians. Two or three years ago, the Northern California chapter had a meeting and a tour of the Santa Cruz campus on a Saturday or a Sunday. She and I each gave a little bit of a talk about the [campus] history. She put it in the overall planning context, and I talked about some of the recent work that we'd been doing, and how we thought about planning the campus and what the results were. Then we did a walking tour. That was a lot of fun.

I remember particularly the reaction of somebody who was from the city of Berkeley but I think also had some tie to UC Berkeley. We were standing in the courtyard of the recently completed Humanities and Social Sciences Building. They were just knocked out by it, such a nice piece of design. I took several lessons from that. They've got some really first-rate buildings at Berkeley too, especially recently. But one of the things that characterizes the Santa Cruz campus is that the funding that we've received from the state to build buildings leads to fairly modestly sized buildings. So there's always been a relatively comfortable scale of the buildings here. We don't have any real, real behemoths. And even the big buildings that we have, like what we now call the Baskin

Engineering Building, that started its life as the Engineering Unit 1 and then became Applied Sciences Building for so many years—I think that may be the biggest building on campus. Its floor plan is just dumb as dirt. It's just an elongated rectangle. And yet there's enough variety to it and the fact that is that it sits in the forest—the trees really break it down and make it really quite a manageable and pleasant building. We can talk about that one a little bit more later.

### **Association of University Architects**

**Reti:** Okay, sure. You have been part of the Association of University Architects and have been the head of that organization. Would you talk about that, please?

**Zwart:** Yes. It's an organization that started in 1955 by ten or a dozen campus architects from around the United States. One of them was a man named Bob Evans who had been—at the time there was a position in the Office of the President at Berkeley called University Architect, who oversaw all of the design and construction activities on all of what were then becoming nine campuses. It's my understanding that Bob Evans was actually in the room when the particular boundaries of the Santa Cruz campus were drawn in the negotiations with the Cowell Foundation as the Regents were acquiring the land that became UC Santa Cruz.

I don't remember all of the campuses that were represented. I know that Bob Evans was one of the charter members. The University of Michigan was represented. As I said, it was about a dozen people. I learned its history well after getting into the organization. But I know both of my predecessors, Chuck Kahrs



and Jack Wolever had been members, and they encouraged me to join. They said it was a very worthwhile organization. I became campus architect in the summer of 1988, which made it too late to join in 1988. The Association holds an annual conference in June of each year, and you need to attend one of those before you are formally admitted to membership.

So my first exposure to the AUA was at its annual conference in June of 1989, which was hosted by UC San Diego. It's an interesting organization, in that its membership is limited to the campus architect from each campus. So it's not like the American Institute of Architects or the American Library Association, where anybody who was a university librarian at whatever level can join and attend conferences. It quite consciously keeps itself small in that regard.

What struck me about it right from the first meeting that I attended was the degree to which this group of people had shared problems. We had similar building types to build. We had similar faculty members to please. We had a student population to please. We were all wrestling with similar problems. And as a result, there is something about it—and new members today still talk about it, that people who join, and the incoming members in recent years have been anywhere from eight to twelve to fourteen people [each year], so again, it's a manageable scale of things—everybody feels how immediately welcome they are felt. I think a lot of that has to do with the scale and the size of the organization.

When I joined it was almost entirely men. There may have been two or three women. That has certainly changed over the years. Four or five years ago I think we finally had enough female members to have a calendar of the women of the

AUA. We got a dozen. Now it's higher than that, and in fact I think the president this year is a woman, Mary Cox, who is campus architect at Virginia Commonwealth University.

It has an annual conference. Its bylaws require active participation on the part of the members. And active participation includes attendance at the annual meeting. So if you miss too many meetings your membership can be terminated. The organization takes that very seriously.

It's been a very useful resource for me. The real resource is the individuals involved. Back in the early days it was phone connections; now it's phone or email connections. If we're considering an architectural firm, for example, that may have worked on another campus, I can drop an email or get on the phone. Likewise, I will get queries saying, "We're looking for an architect for such-and-such a kind of a project. Who do you know who is good, or what can you tell me about so-and-so?" That one-week conference a year develops a fair amount of trust, so you get to know these people and you get to know who to call about certain things.

Just as one example, one of the long-time members who is now at MIT was the head of campus planning at Yale for many years. And Yale had had several master planning studies done by a New York firm called Cooper, Robertson. It's a firm that I knew by reputation but they hadn't done much work in California. I had heard very good things about them. And as we were starting to look for consultants to do our most recent Long Range Development Plan, I knew about Cooper, Robertson and I wanted them to know about it, although I didn't know

how they would fit into the campus. Well, they did submit; I think I told the story a few interviews ago. They did a terrific job for us. I think a lot of the fact that they were here was because I had heard about them through the AUA. So it's just a very valuable professional network. The idea of campus architect as a distinct professional niche I think is growing. More and more campuses have them. Not all of them do.

I got active over time, more active in the leadership of the organization. It probably started when somebody proposed an awards program. This was in the early to mid-nineties. I wrote a letter saying, "If there's anything that architects don't need it's another awards program. What's the point of that going to be?" And so, what did the leadership of the AUA do but put me on the first jury for the awards program.

**Reti:** Oh, no.

**Zwart:** It was an interesting experience, because there was a lot of talk about what we would be awarding, or what would we be giving prizes for? We didn't want it just to be a beauty contest. The submissions were going to be evaluated on lasting value. We wanted something that had been around for a while and [had demonstrated] how it worked for the campus. The first year I think there were three or four proposals, submittals, and we weren't very pleased with any of them. So we didn't give an award. That annoyed the membership a little bit. The second year there were a handful and we felt better about them.

And one of the awards that we did give also proved to be controversial. This was from Purdue University and it was an animal facility for their agricultural school

that had been designed in house by the university architect's office. There was a lot of grumbling about that as well. I felt very good about making the award, for reasons that I'll get into in just a minute. But there were a lot of concerns about it—that it wasn't glamorous enough; it wasn't showy enough; it wasn't beautiful enough. Yet I felt pretty strongly that it really was a good example of thoughtful design specifically related to the needs of a university and a university's academic program. But it also had a tie-in to the overall link of the history of university development in the United States. Purdue is a land grant school, and the impact of the Morrill Act<sup>36</sup> and the agricultural programs and so on. Those of us at campuses like Santa Cruz don't think about that too often, but it was huge in creating what the American university is today.

As the program evolved, I think it wound up moving away from the term "awards" and I remember some fairly lively discussions at the annual meeting about them, where the program evolved from being called an awards program to being called a case study program. I think the term "case study" came from a guy named Duke Oakley. Duke was then the campus architect at UCLA. He's left that job and has been in private practice for about ten years. But he's a very perceptive, astute and sharp guy, really a good friend and a real mentor. And he suggested the term "case studies" to make the point that this isn't about: this is great or this is good; or it's pretty or it's not pretty—but what can we learn from

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<sup>36</sup> The Morrill Acts of 1862 and 1890 created the system of "land grant" colleges and universities by providing grants of federal lands to each state to support the establishment of public institutions of higher education.

it? Are there lessons to be had here? So typically it's proved to be a very popular activity for the association.

This year I think they had more proposals than ever and I think they picked six to do presentations. For the first time I submitted for a case study award, and got one. I did a presentation at last June's conference about the project that is adding floors to the two residence halls at Porter College, to talk about a really unexpected set of circumstances that led to really a pretty happy outcome.

So again, the case studies don't always directly apply to the Santa Cruz campus, but there were enough of them that did, and I'm certainly encouraging John Barnes, who is taking over my responsibilities, to look into the AUA and get him to join, because it's really a good organization. It's an opportunity to give something back to the broader professional world of campus architects.

**Reti:** When did you become head of the AUA?

**Zwart:** I was the president in the 2002-2003 academic year. That year we had our conference outside of the United States for the first time. It was in Vancouver. Typically the rotation was (I guess it's not an unusual rotation) you [first] become the secretary-treasurer; the next year you're the vice president, and the next year you're the president, and then the last year you're the past president. So I would have been elected to the board as secretary-treasurer, I think, in June of 2000. There's a nominating committee that consists of the immediate past president plus two or three other past presidents. Now it's been expanded to include several regular members who review possible candidates and then nominate somebody to the committee. Another of my heroes is Gordon

Rutherford, who for many years was the campus architect at the University of North Carolina, Chapel Hill, a very practical, astute, pleasant guy. He was the past president that made a phone call to me and asked if I would be willing to be secretary-treasurer. I hemmed and hawed because I didn't know what amount of work it was going to involve. It involved a fair amount of work, but not an overwhelming amount. And Gordon just said to me, I think this was the clincher, he said it was one of the most rewarding things that he'd done, having been able to do that. So I accepted and spent the four years on the board.

After I had been off for a year or so, the then-president asked me to chair a task force to refresh the constitution and the bylaws. So I did that with a group of past presidents and members and that was interesting. The year that the AUA met in Austin, Texas, they awarded me their distinguished service award for all of that stuff, which was very pleasing and moving. But it was particularly moving because it was about a week after then-Chancellor Denton had committed suicide. So it had been a pretty tough week. I had actually learned about the suicide in a phone call from my brother as we were driving to Austin on a Sunday morning. It was a pretty tough week and we had a lot of conversations about it at the AUA. The timing of that was pretty interesting.

**Reti:** I understand.

### **A Chronological Oral History Tour of UCSC Campus Buildings**

So now we shall dive into our oral history tour of the major buildings on campus that you have worked on during your tenure. We've already talked about some

of them, but we're going to try to do this in a more comprehensive way. So you're going to start with the earliest building.

### **Cowell and Stevenson College Expansions**

**Zwart:** Yes. And maybe we could talk a little bit about some that I worked on even before I became campus architect. The model of the campus was to grow large while remaining small, and the original idea was to have the colleges at 400 to 700 students. That turned out not to be entirely feasible. The colleges grew and they needed facilities. For a while, about the time I arrived on the staff in the mid-eighties, the Office of the President was making available to each campus chunks of money for modestly sized capital improvement projects. This campus used a series of those allocations to do small additions to the existing colleges. The one that I worked on—gosh, I don't know what it's called now, but it's a faculty office wing immediately next to the Cowell College library.

**Reti:** Yes, we talked about that some.

**Zwart:** Likewise, at Stevenson College we filled in a—in fact, the conference room was done even before I came to work on the campus. It was probably done in the late seventies or early eighties by Richard Peterson and Associates, a firm I worked for out in Aptos. I didn't work on that particular project that created what's now the Silverman Conference Room. And then we did a couple of other—

But we worked very hard to make sure it felt like the additions were fitting into the architecture and the architectural style of each individual college. It's a real

lesson in the degree to which a certain set of assumptions tie you down. While we could add maybe ten or a dozen or fifteen faculty at a time, there wasn't a simple way, given the assumptions from the early days, to easily double the size of a college. Because [according to the original campus plans] we were going to grow in discrete increments. Also, one of the vice chancellors I worked for, Jim Sullivan, who had a long career in the university both at the Riverside and the Davis campuses, said to me once, "You know, you always have to leave something for your successors to do."

**Reti:** (laughs)

**Zwart:** The notion that a university campus is never complete. There's always going to be something. I suspect that in 1965 and '66 and '67 and '68 when those colleges were first built, there was a feeling that that each college was complete, and they would build new colleges to add additional growth. But that proved not to actually be the case.

So when I was hired and joined the staff in May of 1985, the three projects I was assigned to were: the Student Center, which now is known as the Academic Resource Center, overlooking the Great Meadow; the University Center, which was never built. It was the euphemism for a faculty club that would have been on the site of where the Music Building is now; and a major addition to the East Fieldhouse—a swimming pool, locker room complex, renovation and addition of some tennis courts, and so on. Up until that point I'd been doing some fairly modest renovations around the campus. But these were three stand-alone projects, very different client groups, very different architectural firms, very



different approaches. So it was a real—throw me into the swimming pool and see—

### **The East Fieldhouse Facilities**

**Reti:** (laughs) Literally!

**Zwart:** (laughs) In fact, there was a swimming pool. I think I talked a few weeks ago about the geotechnical challenges we encountered with the swimming pool.

**Reti:** Yes.

**Zwart:** That was a project the utility of which I never questioned. I think OPERS, the P.E. people have found it very useful. The swimming pool gets an enormous amount of use, to the extent that just last summer when they had to empty it for a few months to re-plaster it and make some improvements, do some maintenance work, there were a lot of cries of pain about the pool being out of use for that period of time. And so it was a very good [addition to the campus].

But the architectural quality of the building was always a disappointment to me. I remember walking into Chuck Kahrs' office, who was the head of Design and Construction at the time, and just shaking my head saying, "I don't see the building getting any better." As it happened, Richard Peterson, who was the architect I had worked for, who had been on the staff in the late sixties and early seventies, was sitting there. He said, "Chuck, do you mind if I jump in?" I knew Richard and Chuck both very well, so Chuck said, "No problem." He said, "Well, let me tell you what would have happened in the old days. Jack Wagstaff, the founding campus architect, if he was having problems with the design he would

call Ernie Kump.” (Ernest Kump was the consulting architect to the campus, and at the time each campus had a consulting architect to advise on such things.) “And Jack would say, ‘Ernie, you know the design on the P.E. project isn’t going along very well. Can I bring it over and can we talk about it?’ And so Jack would go over to Palo Alto and have lunch with Ernie and unroll the drawings and look at them. Ernie would say, “Yes, you know you’re right, Jack. Let me talk to Ron (Ron Brocchini, the architect)” And so a little conversation would be had. I mean, that’s how design review was done in those days.” Richard said, “You don’t have a tool like that to work with.”

It was a real lesson because we didn’t have one. The building got built. It was the first project I actually managed during construction. I think it was during its construction that I became campus architect. The swimming pool contractor was way behind schedule and the work had not been satisfactory. So we got lawyers involved. I don’t think we ever got to a lawsuit, but we actually—for the first time on that project—withheld what’s called liquidated damages. The University’s construction contracts are written in such a way that there’s a phrase in there that says the contractor and the owner (the University) agree that if the building is not completed or if the project is not completed on time there will be economic consequences, and for purposes of this contract we value that at  $x$  dollars a day. If the contractor is late, then the contractor owes to the University the number of days that it’s late times that amount. That’s known as liquidated damages. The University had not really ever collected much in the way of liquidated damages, but on that one, because the swimming pool was so late we managed to collect liquidated damages. That was my first glimpse into the world

of—I don't think we got into litigation—but into working with attorneys just like we work with engineers. So that was a lesson, but it [the OPERS project] worked out fine and it's been very serviceable and we've done some nice additions to it over time.

**Reti:** Now, I confess I'm not enough of a jock that I've actually been in the locker room building. What is it about it that you felt critical of?

**Zwart:** There's just not a lot of grace to it. It was just a diagram that got built. It's just sort of heavy-handed. Essentially, I think I told the long story before of discovering really bad soils in the original site plan and having to move everything around. Well, in that moving around—I learned in architecture school that buildings tend to be site specific. So you would think if you moved a building from one place to another there would be some changes to it. Well, this just—we moved it from one site to the other and it didn't really change [the building plan] very much. It wasn't very well worked out. It's serviceable. It's fine. It works okay. People use it. I use it. I enjoy using it. It just could have been better, that's it.

### **Student Center (Academic Resources Center)**

The Student Center was quite a different story, because Fernau and Hartman are very thoughtful and design-oriented architects. And it was really a pleasure working with them on that one, although it also ultimately wound up in litigation.

**Reti:** We did talk about the tile, yes.

**Zwart:** Yes, when the slates fell off the roof. But Richard and Laura quite consciously—I mean, their office was in the Berkeley hills at the time—and they quite consciously are an architectural firm and were at the time, that looked to historic precedent. I know Richard said that one of the models that they looked at were the Canadian Railroad hotels that were built throughout Canada to attract people and took advantage of the view and took advantage of the space, and created what Richard called an outdoor room, that courtyard near the building.

**Reti:** It's a beautiful space, one of my favorites.

**Zwart:** Yes, it's a very nicely scaled, very thoughtful building. It's a project that was badly under-budgeted to start with. Fernau and Hartman did everything they could to keep the budget modest. They used a few tricks of the trade. But we took advantage of the fact that enrollment was growing, and went back [to the student government] and actually managed to get the budget augmented a couple of times. Since it was a student-funded project, and since enrollment was growing, we were able to take the revenue that was going to be generated by that increase in student population and apply it to the project. And much to everybody's surprise—because it's a fairly elaborately detailed building, there's a lot of variety to it, and that's not the cheapest way to build something, and we were at a time when construction prices were pretty inflated (although not as bad as we saw in subsequent years)—the low bid was something like ten or fifteen percent below the estimate, which was shocking to us.

We were concerned on a couple of counts. We didn't know if the contractor was going to be able to afford to build it for that much money, but he said he would

stand by his price, and they did. And we didn't know how it would weather. How would it age, given the low budget? But it's weathered remarkably well. It's hard to imagine that it opened just before the Loma Prieta Earthquake in 1989. And that's now twenty-one years. I was there a few months ago and it's held up pretty well.

**Reti:** It's lovely.

**Zwart:** Yes, it's really a nice building and a nice space.

### **The University Club**

And then the University Club was also designed in a similar spirit, although it was never built. It was designed by an architect in San Francisco named Chester Bowles. It was going to take advantage of the great views over the meadow and be very flexible. It was nicely done. It would have been a nice building.

But—and I may have talked about this a few weeks ago—when Robert Stevens arrived as chancellor, there was some opposition to the idea of a University Center, and some faculty members approached him, so he put its development on hold. And then it morphed into what happened on Nine and Ten. In retrospect, I'm happier to see the Music Building on that site. It's such a prime site. Having a more intensely used facility, I think, is an appropriate use of the site. I also think, from everything I can tell, the decision to put we now call the University Center at Nine and Ten, above the dining hall of Colleges Nine and Ten, has been a very, very good one. I know as that was being discussed there was a lot of concern about would it work, is there enough parking, and so on.

But it's close enough, I think, to the population density of the campus—and that's really Science and Engineering Hill—I know on occasion I've tried to have lunch there and it's been sold out!

**Reti:** Yes, you have to make a reservation.

**Zwart:** Yes. So that's a really nice thing. I think what a lot of people didn't realize about the University Center (going back to the planning of the one that wasn't built between the University House and the Student Center) is that there had been talk about a faculty club going back to the early sixties. I saw some correspondence from Dean McHenry about a faculty club, back in 1968, and the notion of having a place where people could get together from different colleges or from different departments. I think it's really serving that function extremely well.

### **Sinsheimer Laboratories**

Sinsheimer Laboratories<sup>37</sup> I wasn't the project manager on. That was a colleague named Tom Contos, although it was starting in design just after Tom and David Tanza, another then-young architect and I were all hired. We all got involved in the value engineering process for that. I think I talked about that a little bit earlier. It was a very good introduction to a young architect to see in front of me the process of reconciling a building's program and its budget and its appearances. ED2 International, I think, was a very receptive and responsible architect. Again, it's not the most sophisticated or fancy design in the world, but

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<sup>37</sup> Sinsheimer Laboratories was originally known as Natural Sciences 3.

it was done very, very thoughtfully. I think I told the story at a previous interview of walking into the atrium lobby there and actually seeing a little bit of science because of the interaction that goes on there. It's become a good model.

One of the interesting things about the building, I think, and a good one, is because of the emphasis that Vice Chancellor Brase put on getting interaction into that building, and because of the fact that the building actually achieved that, it really became a model for subsequent, not just laboratory buildings, but buildings in general on campus. I think there was growing awareness on the campus of the importance of that. I think when we talked about it before I mentioned that it [Sinsheimer Laboratories] was the first laboratory building that the campus had built since what's now called the Baskin Engineering Building. If I had to guess, I'd think that Baskin probably opened in about 1974 or 1975, and the design of this was starting in 1985. So this was a ten to fifteen-year gap in designing these kinds of facilities. I'm really glad that it came out so well, because it set a model and a standard for subsequent ones to follow. I think they followed it pretty well.

### College Eight

**Zwart:** And then also in design at the same time was College Eight. Now, interestingly enough, College Eight had been designed in the mid-seventies, and it was a design, I think I talked about this before—

**Reti:** Yes.

**Zwart:** —north of Kresge College. And that program actually wound up being my [master's] thesis at Princeton in 1976. But when it came to life again, the site on the west side of campus was chosen in theory to help bring Oakes College into the center of campus. Oakes College had been designed as College Seven. When it started its life as College Seven, before it became known as Oakes College, before funding had been secured for it, the idea was to have it focus on—at first the Black experience, and then that broadened to more multicultural diversity themes and topics. But there was a lot of talk about naming it Malcolm X College. I wasn't around when the siting decision was made to put Oakes where it was, but I know a lot of people, myself included, felt it shouldn't have been—I mean, it was really all by itself out on the edge of the meadow, on the west side of campus. It really wasn't close to anything and then there was always a feeling of incredible isolation. So when it came time to site College Eight—

**Reti:** Wait. I'm just going to interrupt you for a second. Are you saying that there was at least maybe an unconscious desire to isolate the college because of its radical African Americans?

**Zwart:** No. I wasn't saying that at all. No, in fact, I may have talked earlier about the decision that I heard about from Richard Peterson about on the east side of campus, the first four colleges, Cowell and Stevenson were developed as a pair, back to back; and Crown and Merrill were developed as a pair. And then when development moved to the west side, the idea was to create freestanding colleges in an attempt to give them more autonomy and their own identity. So I had the impression (and again I wasn't involved in it), so I don't think it was a matter of isolating them or putting them out in the boonies at all. In fact, quite the



contrary, I think there was pressure from the planning committee for that college to take that site because it was a nice site, and again, to have that kind of autonomy and self-identity.

**Reti:** Okay, that's completely different—

**Zwart:** At least that's the impression I have. I don't know that. It would be interesting to see if there are any documents about that. But no, it wasn't a matter of—put them out in the boonies because they might embarrass us. I had the impression that the selection of that site came from the planning committee itself.

I've heard one criticism repeated about the overall plan of the Santa Cruz campus—it's that it's too suburban. The original 1963 Long Range Development Plan was too spread out over the 2000 acres. I think over time we *did* see the advantages of compactness on a college campus. Subsequent long range development plans did call for compactness. Had the campus been thinking about compactness as it thought about the siting for what was then College Seven, it probably would have picked a different site.

So back to College Eight. Then the idea was to make Oakes feel less isolated. I remember an interesting meeting where this was being discussed, an internal meeting, where Lou Fackler (who was the head of Campus Facilities for many years), he had a long history with the university, simply said, "You can build all you want there on the College Eight site but it's not going to move Oakes College one inch closer to the center of the campus by doing it." (laughs)

**Reti:** (laughs)

**Zwart:** I thought that was a point. But the site was selected. I think it's worked out okay over time. There had been a long gap, or a long hiccup between Oakes College and College Eight, but it was the first college that right from the start was planned to have both residence halls or dormitory accommodations *and* student apartments. The first five colleges were all built with all residence halls; Kresge College (College Six) and Oakes College (College Seven) were built with only apartments. Over time Housing realized that they needed a better balance, and ideally a college would have residence halls for lower-division students and then apartments for sophomores and upper-division students, to try to keep them on campus. So we've actually managed to go back, and now each college has both residence hall accommodations and apartment accommodations affiliated with it.

Again, I wasn't involved in overseeing or even being involved in any of the site planning for it, but it involved relocating Heller Drive. The original alignment of Heller Drive was a little more direct, and as part of the construction of College Eight it created the swoop out to the west to go around to College Eight. I think it was felt, and I think it was felt correctly that there probably wouldn't be room for all of the academic facilities, all of the residence halls, and all of the apartments all on the site that had been selected east of Heller Drive. So the site essentially had to be expanded and it was expanded by moving Heller Drive to the west.

What I don't know was whether anybody looked at the possibility of, say—since the apartments were going to be built in a separate phase from the residence halls and the academic area of the building—I don't know whether anybody looked at the possibility of just building residence halls and academic and dining

facilities on one side and then maybe bridging across and building the apartments on the other side. That's something I would have liked to see pursued, but it didn't happen.

SMWM—Simon, Martin-Vegue, Winkelstein, and Moris of San Francisco were the architects. Cathy Simon had been the designer when she worked for Marquis Associates of the Baskin Visual Arts Complex. The sense that I have about College Eight is that I think it could have been a little bit more compact, although I will say that there was a lot of attention in the design phase with the building committee about creating a “heart” for the college. That big courtyard plaza there was called the college “heart”, and it works very effectively from what I can tell. Moving through it, it's really quite a spectacular place. I also have never been terribly fond of the particular architectural vocabulary that Cathy Simon picked. In one conversation she had with me she talked about Martha's Vineyard. And my California roots are showing, I suppose, because my first reaction (although I bit my tongue and didn't say it to her), was, “But Cathy, that's the wrong coast.” (laughs)

As it was being built it had a lot of criticisms as being “Fort College Eight.” It looked like an air force base. I think it could have been handled a little bit more sensitively. But I do think it does have some merits. The “heart” is one. I think the way they broke the residence halls down into small courtyards and the scale of the buildings there is nice. And then, the apartments were built on a Design-Build proposition and so they picked up some of the design themes from Cathy Simon's residence halls and did them in a less expensive vocabulary. I know John Chase in his comments about the campus in his *Sidewalk Guide to Santa Cruz*

*Architecture* has some really unkind things to say about the apartments, something about a low point in architecture.<sup>38</sup>

**Reti:** Yes.

**Zwart:** I think they are serviceable. They are not distinguished but I think they work well. I know the contractor who was part of the Design-Build team was also the contractor who built the Student Center that I was talking about a few minutes ago. One of his arguments about using Design-Build is that by having the contractor who knows what it takes to put a building together working with the architect, certain dimensional decisions can be made. For example, if floor joists come in twelve-foot segments, don't use 10'6" as the dimension. Take advantage of the twelve feet. There's an economic intelligence to that which can give you more space, which is welcome to the users. What that often winds up doing, though, is removing the opportunities for any kind of elegance or refinement or proportioning. The buildings can be a little clunkier with that perspective. But they do okay.

I think the other lesson that the College Eight apartments taught is—some of them are fairly tall, next to some other fairly tall buildings, and fairly close to each other. But they don't feel overwhelming. I think it let us know that we could actually build buildings a little bit closer together and do it comfortably without

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<sup>38</sup> See John Leighton Chase and Daniel P. Gregory, Judith Steen, Editors, *The Sidewalk Companion to Santa Cruz Architecture* (Santa Cruz, CA: Museum of Art and History, 2005). Architectural critic, writer, and urban designer John Chase died just a few weeks after this interview. See [http://www.santacruzsentinel.com/obituaries/ci\\_15823597](http://www.santacruzsentinel.com/obituaries/ci_15823597)

having to spread out all over the land. So it was another step towards compactness, and I think a favorable one.

I was talking a little while ago about the AUA [Association of University Architects]. One of my roles in the AUA (this would have been probably in about 1992 or 1993)—one of the officers was a guy named Chuck Powers. Chuck had been campus architect at UC San Diego for a long time and then he moved to UC Irvine. There had been a [AUA] conference here in the early seventies, back when I was still a student. And he really wanted to come back to Santa Cruz. So he started putting the screws to me to host a conference. So I called back to the campus from the conference and said to my assistant, “Are you up to hosting a conference of a hundred campus architects in a couple of years?” And she said, “Oh, it will be fun. Let’s do it.” So we hosted the conference in 1995. The conferences are always hosted by a campus. But it was not uncommon for the conferences to be held on the campus and student accommodations to be used for the campus architects. So we used the College Eight apartments for the campus architects.

**Reti:** In the summertime?

**Zwart:** In the summertime, yes, as part of the summer conference program. So they did that, and they were very serviceable and they were very good units. It was some pretty nice real estate. So I feel okay about College Eight.

### **Science & Engineering Library**

The Science Library I think I talked about earlier.

**Reti:** Yes.

**Zwart:** That will always have a fond place in my heart. I think it really is one of the buildings that does what architecture at Santa Cruz does at its best, and that it meet needs in a way that's uncompromisingly modern. It's not phony. It's not woodsy. And yet there is a level of comfort. When the construction fences for that project rolled up—really, it was like it had been there for years.

**Reti:** Yes.

**Zwart:** We're here now. And just as I was walking through this morning, I mean it's hard to imagine that we will be coming up on the twentieth anniversary of the building next May. It opened in May of 1991. So it's actually weathered extremely, extremely well. I'd have to look to a librarian to talk about how flexible it's been over those years. I know the map collection was moved up here and a few other changes were made that weren't contemplated in the design of the building. But I think it's been a very serviceable building and it's really been a lynchpin for the Science and now the Science and Engineering Hill area. I think it's a terrific, terrific accomplishment.

**Reti:** And that building was also nationally recognized with several different awards.<sup>39</sup>

**Zwart:** It got some local awards for use of concrete and so on. But probably its most prominent award was a joint award from the American Institute of

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<sup>39</sup> The Science Library won the 1993 Gold Medal award from the American Institute of Architects/ American Library Association, among other accolades.

Architects and the American Library Association sometime in the early nineties. It was actually a nice opportunity for me because it happened that the award was going to be presented at the ALA convention in New Orleans. That was the week after the Association of University Architects had its annual meeting in Chapel Hill, at the University of North Carolina. So I wound up going to Chapel Hill and going to a conference there, and then stopping in New Orleans on my way home to go to the ALA convention and get that award.

That was my first visit to New Orleans. My second visit to New Orleans coincided with my honeymoon. It also happened that (and this was not coincidental) that the American Institute of Architects' Committee on Design was having a meeting in New Orleans. So Julia [Armstrong-Zwart, my wife] and I attended that. We were standing in line to get lunch served by Dookie Chase. Dooke Chase is an old-line New Orleans restaurant. It's got roots in the Black community in New Orleans going back for, well, probably not generations, but certainly for years. And I was talking to an architect in line with me about where I was from, and UC Santa Cruz, and so on. He said, "You know, we're not supposed to talk about this sort of thing, but—" (One of the activities of the AIA Committee on Design is to give design awards every year.) And he said, "I was on the jury the year that the Science Library was up for a national AIA award. I don't understand why we didn't give it one. That was really a spectacular building." It really is. It's a jaw dropper, a comfortable jaw dropper. It's up there. I try to avoid saying—which is your favorite building on campus, but the Science Library is certainly one of my favorite buildings on campus, just like everybody else's.

**Reti:** (laughs)

### **Earth & Marine Sciences Building**

**Zwart:** Then that was followed shortly thereafter by the Earth & Marine Sciences Building. It was done by a Portland firm, Zimmer, Gunsul, Frasca, which has gone on to open offices in Los Angeles and Seattle, and maybe even east of here. It was the first of the projects they did for the University of California, if I remember correctly, and I think they've gone on to do a lot more on lots of different campuses. And it tried, in a very different way (and I think—I don't spend a lot of time in that building so I may be wrong about this), in a less successful way, but it also tried to create opportunities for interaction.

**Reti:** You mean that big courtyard—

**Zwart:** Two things. One is the lobby, the interior lobby. One of the differences between Earth & Marine Sciences and Sinsheimer Labs is that Earth & Marine Sciences had a lecture hall and two major classrooms, where Sinsheimer was really built as a catch-up facility that was focusing mostly on research needs. So it does have some conference and seminar rooms but it doesn't have classrooms and it doesn't have a lecture hall attached to it. So ZGF—Zimmer, Gunsul, Frasca—was asked to do a design that had, I think it's about a 200, 250-seat lecture hall and a couple of 40 or 50-seat classrooms, as well. Those three gathering points then feed into a tall lobby that links the rest of the building together. Maybe I'm being unfair to the building, because I have been there at class change time and that is a lively place. I know they set up a coffee cart there and so on. So I think it does get that kind of interaction. One of the nice things



about that building is because it has the two classrooms and the lecture hall, there's a lot of opportunity for student-faculty interaction.

When you are designing laboratory buildings, one of the first questions that the architect and the user group wrestles with is, where do the faculty offices go? Do they go adjacent to the labs, or are they separate from the labs? Different disciplines have different answers to that question, but for both Sinsheimer and for Earth & Marine Sciences the answer was, they can be separate. What that allowed us to do, or allowed Zimmer, Gunsul, Frasca to do, on Earth & Marine Sciences, was to use a less expensive type of construction for the faculty offices than for the very intense labs. Laboratory space is about as expensive a space as we build because of the requirements for lots of air movement and for what we call wet services (plumbing of water, water and various kinds of gasses), as well as often requirements for stiff floors to allow microscopy to be done successfully. That often requires a pretty heavy concrete structure. So in Earth & Marine Sciences the faculty offices were pulled out and put into a separate wing or couple of wings; there's an exterior courtyard in between, and the two concrete wings house the laboratories.

I think it's been a serviceable building. I always have the sense that that the pulling apart may have pulled things too far apart, because the faculty office quarters often feel a little bit lonely. There just doesn't seem to be the kind of intensity of activity that you like to see in an academic building.

I also know that we've had some problems in the faculty office wing there with offices overheating. There's a west exposure. It's one of those stories. It was a real

lesson for subsequent buildings. We now pay a lot more attention to comfort in the building in areas that we were not going to air-condition. I think the problems were compounded by the fact that, for reasons of temperature control for research, the laboratory wings are air-conditioned but the faculty offices are not. It would be one thing if the labs were at 85 degrees and the offices were at 88 or 90. That transition wouldn't be as shocking, as to go from a 70 or 75 degree air-conditioned space into a 90 degree office space. That adds to the psychological impact of overheating. But it's got west-facing windows. The shading devices I think were probably cut off as a cost-savings measure. It's got ducted air that blows air into the offices. Again, a lot of that stuff was moved up to the roof to save money. There is the potential to air-condition that retrospectively, although I don't think that's ever going to happen. But when the weather gets really hot, instead of relying on cooler air to cool the offices off, in fact the sun is baking the ducts on the roof and warm air is being piped into the offices. Each decision that was made had its own logic. But you put them all together and it wound up creating all kinds of technical problems. We paid a lot more attention in subsequent science buildings to making sure that right from the start the building is designed in a way that we're not going to have that problem. I haven't heard any of those kinds of complaints from Physical Sciences or any of our successive laboratory buildings. So we've done that pretty well and we're pretty happy about it.

### **More on Colleges Nine and Ten**

Colleges Nine and Ten I think I talked a lot about in one of our earlier interviews. But I know that John Chase, again in his comments about the campus, talked

about the newer colleges being more interchangeable. I think that's a fair criticism of the fact that there's very little distinction between the architecture of College Nine and the architecture of College Ten.

**Reti:** You can't really tell when you've moved from one to another.

**Zwart:** You can't really tell. You have to know where the design is. As I said in that earlier interview, I was the project manager for that project before I became campus architect. And what I would have liked to have seen happen would have been to have master-planned the entire thing and then picked a separate architect to design College Ten to create a distinct architectural identity from College Nine once they moved forward. But that just didn't happen. I approached Vice Chancellor Brase with that suggestion and he said he was worried about the cost impacts. He said, "I don't think we have time for it." So that was shot down. I think that accounts for it. I think EHDD did try to create some distinction based on color and so on. But in fact, the same floor plan was used for the residence halls at Nine and Ten. And there was some economy of scale there. I think there's no arguing that. I think John's criticism, John's assessment, is fair. And it's entirely a response to economic circumstances. I think that's really what we were faced with there.

### **Music Building**

The Music Building was a project that's generated some controversy. It looks sort of foreign. It's not what people expect to see on the Santa Cruz campus. People don't understand it. It's so concrete. It's so angular, rocky. Antoine Predock, the architect, was selected before I became campus architect, but there was a lot of

thought given to that selection. He's an architect who practices out of Albuquerque, New Mexico. I know he has said to me on one or two occasions that his background was actually in landscape architecture before he pursued architecture. So he pays lot of attention to the site. And again, that's a project that faced some real budget challenges. I mentioned a minute ago that laboratory buildings are very expensive space to build. But so is music space. The acoustical requirements are varied and very stringent in any kind of well-thought-out music facility. There were some pretty stringent acoustical requirements written into the program for that, and Predock and the acoustician, a guy named Ron McKay, I think did a very good job of meeting that challenge.

For example, in the rehearsal rooms downstairs there have to be extremely solid walls between those rooms, so that if you are practicing the flute in one room and electric guitar in the next, there's sound not going back and forth. So in addition to having pretty dense walls in between them, when the electrical wiring is done, the electrical outlets in Room One don't connect to the electrical outlets in Room Two or Room Three. They connect three [rooms] down the floor so you don't have sound waves moving through the conduit that connects electrical outlets. So there's attention paid to that. In some of the rooms—the piano rehearsal, the three and four instrument rehearsal rooms, or more critically, the drum and percussion studio room—in those rooms they actually poured a floor slab on the ground, let that concrete cure, and then poured a second slab on top of it with little jacks embedded in the concrete. And when the second [concrete] pour was cured, then that was jacked up to create an airspace

between the two floor slabs so that sound wouldn't go down through the ground and up into the rooms next door.

**Reti:** My goodness! I had no idea how much was involved.

**Zwart:** So there are lots of costs there. The campus chose to put money there rather than into some of the architectural ideas that Predock had.

Maybe I should back up a little bit. When work got started on the Music Building, the siting of that facility was a major, major discussion. I know Vice Chancellor Brase had a site picked out in his mind, maybe a hundred yards east of the Student Center, all by itself overlooking the Great Meadow. Just imagine going to the east over there. That was a site I had some real problems with, for reasons of isolation. There were lots of arguments for siting it there, and in fact the music faculty had favored that as a site. One idea was, "Well, we need sound isolation. We need to be away from everybody else for sound isolation, so we need to be away from everything." I remember Joe Esherick's response to that. He said, "Well, under that argument Davies Symphony Hall would have been built in the middle of Golden Gate Park."

**Reti:** (laughs)

**Zwart:** There are ways to deal with [acoustical challenges] even in a city. That's not it. The other—

**Reti:** It's not a garage band. (laughs)

**Zwart:** (laughs) The other argument [of the music faculty] was, “Well, we don’t have anything to do with the other Division of the Arts faculty, arts or theater or any of those people. So we can be off by ourselves. It doesn’t really matter.” My own perspective is that that’s contrary to the intention of a university. I thought that was a little bit short-sighted.

So we did some early planning studies looking at what the implications of putting a building in the site out there were, versus, we also looked at some sites immediately east of what’s now called the Theater Arts Complex, what started its life as Ralph Rapson’s<sup>40</sup> Performing Arts Complex. Pros and cons were weighed and there were a series of meetings of the Campus Physical Planning Committee. Planning people were sent back to take another look at it and somebody talked about it splitting the difference and putting something in the middle. The site that somebody pointed to on a plan, I don’t know whether that was sort of halfway in between or whether they had [considered] some merits of the site.

So we went back and looked at that. And I became convinced that that was a good site for the building. I didn’t like the isolated site to the east because it was isolated. And you would have needed to build a road to get there. It could have been Oakes College all over again. You want people near each other. I didn’t like the site that we were looking at immediately east of Theater Arts because there’s

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<sup>40</sup> Ralph Rapson, FAIA, was executive architect for the Performing Arts Complex, which opened in 1971.

really quite a spectacular grove of mature oak trees there. The impact on that would have been pretty awful.

As we looked at the site that got ultimately selected, the one that looked like it was splitting the difference, it had some real virtues. First of all, it was close enough to the Arts area to really create an Arts area. Second, the 1988 Long Range Development Plan talked about this area of campus as the community access area because it had a lot of functions that would draw people from town to the campus. Right away you have to deal with parking. And I was concerned that the parking lot that's there, the Performing Arts parking lot. My guess is, (I don't know this for a fact) but my guess is that it had its start as paving over a construction area that was used to build Performing Arts or the Theater Arts complex and then that got formalized. I was worried that that [parking] would spill its way down the hill and out into the meadow. But by putting the Music Building there it becomes a guardian or a protector of the meadow and the possibility of going on and building below it is significantly reduced. It put a bound to the development of the parking area.

So once that had been settled on as a site, then we put together a couple of days' planning workshop to talk about growth in the area in general. We pulled out all of the studies that we had done siting the music complex. We invited Predock and members of his design team. We had Fernau and Hartman taking a look at the Student Center. I think we invited [San Francisco architect] Chester Bowles<sup>41</sup>

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<sup>41</sup> Bowles had been executive architect for the University Club that was never built, as discussed beginning on page 287.

because at that time we thought there might still be a University Center in that general area. And we did a workshop that would think about how we would develop that area of the campus. It was at that workshop, or one of those workshops, that Predock came up with the general configuration of the building now, which has an enormous amount of sense.

One of the concerns I had about the site either east of the Student Center, or the site that was ultimately chosen, is that much of what you do—I mean, given that we were building a five hundred seat recital hall—typically you go in there and sit in the dark. Why put a completely enclosed building at the edge of one of the most spectacular views on the campus? I mean, that just seemed to be completely crazy to me. Nevertheless, the programmatic links back into the Arts area were undeniable.

So the other thing about a recital hall—it's not just that you've got five hundred seats and a big footprint of enclosed space—you also, for the purposes of musical reverberation, you need a lot of volume. So it was automatically going to be a very high structure. Predock understood, I think quite well (he really has a very good nose for sites) that that had the potential for blocking views and not doing things sensitively. He moved the biggest and bulkiest piece of the building, the recital hall, as far to the southwest as possible. There's the little hill on top of which sits University House. That sort of bounds the Great Meadow and bounds the Arts area. So he actually moved the recital hall as close to that hill as he could get it. That made a world of sense. So the big bulk, which was probably the equivalent of a three or four-story building, got pushed over to that hill, and then he buried one floor of facilities on the site. Imagine the walk up the access road to



McHenry Library—there's only one story of space above that and then there's another story below that. Then he carved down some viewpoints out in between. So he came up with, I think, a very clever site plan, which you really appreciate as you go up on the hill to the Baskin Visual Arts Complex where Digital Arts is now, or further to the west up the hill in the oak grove over to Performing Arts—you don't have to go very far up those hills, to where you can actually see over the whole complex and see the meadow and see the city beyond. So by tucking it down, rather than just putting a building there—I mean, so much of architecture is putting stuff in the right place—and I think Predock really did that with the Music Building.

Furthermore, he created that plaza where you go in and it becomes spill-out space for the recital hall, but that's the entryway out to a new plaza that gives you a view to the meadow and out to the city beyond. As you walk out with the recital hall on your right, you have to your left the second phase of the Music Building, the Gamelan Studio, and then you continue on, you cross the bridge over the little ravine that I'll come back to in a minute, and then you come out on to a roof deck, which is actually the roof of rehearsal rooms below. You can come up to the edge and look out over the meadow. So yes, some views were blocked from the access road to McHenry, but he created another platform for views. And then into the left you move into the academic and faculty offices and rehearsal room space of the music facility.

And then that ravine—again, in some of the early sketches that Predock did—he took a very different view of the campus. It's a very accurate view of the campus that he used metaphorically in designing the building. Most people come to the

campus and see redwoods and think it's forest and think we ought to do everything in cabin-y, redwood-loggy style. Predock always talks about—I've heard him do this talk several times—where he has to have the feeling of the site come up through his feet. And what came up through his feet at Santa Cruz were the ravines of the campus, which are a very distinguishing feature of the campus, as distinguishing as the redwood forest, just not as obvious. So what he actually did was, in laying out the rooms of the building, carved another ravine through the middle of the building. When you walk across the bridge to that platform, you are actually going across the ravine which is Predock's re-creation of, or homage to, the ravines that go north and south through the campus. And then likewise (and I think we have talked about this a little bit earlier), concrete is really—I mean, everybody thinks well, redwood is the indigenous building material of the campus. Well, it is *an* indigenous building material. But given that the Cowell Ranch and the Henry Cowell Lime and Cement Company made lime that went into cement, so is concrete.<sup>42</sup> Because cement is an important component of concrete, so the notion of cast-in-place concrete as an appropriate building material for the campus is right on. The first Long Range Development Plan called it out as the favored building material for the campus.

So now we get back to New Brutalism. Predock's designs are too idiosyncratic, and too geometrical or angular, and too Expressionist to be called New

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<sup>42</sup> See Frank Perry, Robert W. Piwarzyk, Michael Luther, Alverda Orlando, Allan Molho, and Sierra Perry, *Lime Kiln Legacies: The History of the Lime Industry in Santa Cruz County* (Museum of Art and History, Santa Cruz, 2007). For a history of the lime industry on the current site of UCSC see: Elizabeth Calciano, ed. *George Cardiff: Santa Cruz and the Cowell Ranch, 1890-1964* (UCSC Library Regional History Project: 1964).

Brutalism. But the notion of unpainted concrete typically doesn't find favor with a lay audience. I think that's what people feel with the Music Building. That was my mother's reaction when she saw the Salk Institute building in San Diego. The Salk Institute is all cast-in-place concrete that took weeks, if not months, to get the color decided on. She said, "It looks like it could use a good coat of paint." There's something about a concrete wall that people want to see painted. John Chase used some unkind words about it. Was it bunker, or—

**Reti:** He called it a "maximum security prison for music." And wasn't there supposed to be a sod roof?

**Zwart:** I'll get to the sod roof in a minute. But well, I think that's inherent in the nature of, you go in the dark to hear a performance, or the fact that the building materials are so hard-edged.

**Reti:** I walked out on that big deck platform last year during a hailstorm. (laughs) There was a beautiful view of rainbows and clouds out over the bay. I was going to walk down the hill, but then I realized it was going to start raining. So I thought, oh, I'll take shelter at the Music Building. And I proceeded to get blasted with hail because that is such an exposed space where you are standing out there.

**Zwart:** And the wind probably comes right up the meadow.

**Reti:** Yes, the wind comes right up the meadow. I've had that experience before concerts too, waiting to attend something. "Oh, let's go look at the view." And

then it's just so exposed. I don't know if there's something that could have been done about that.

**Zwart:** Yes, that's a good—I hadn't thought about that but that makes a lot of sense.

But again, this was one of those projects where the budget was very tight. John Chase is right. Predock originally did want a sod roof on the Arts area side of the building. And his original designs would have had meadow grass continuous going up onto the roof of what is now—I think it's a couple of rehearsal studio wings. It's the wing—as you walk up towards McHenry Library to your right you see an area of gravel roof on one of the music facilities that are down below. That would have been terrific. We just felt that we could not have gotten it through the state budgeters and we had concerns over the long-term maintenance questions of putting a sod roof on something like that. But that would have made a big difference. In fact, I think one of his early sketches actually showed sheep grazing on the roof of the building, or something very poetic like that.

**Reti:** So when you say a sod roof—would this have been like the green roofs that we're hearing about now?

**Zwart:** That have become more popular now, that's right, yes.

**Reti:** It pre-figures the Green building movement.

**Zwart:** It does pre-figure that. We figured we couldn't afford it. We figured it would have been just shot down right from the start. And we had maintenance

concerns. It was rejected for pragmatic reasons. That's one of those things where poetry is the victim of pragmatism. It would have made a big difference. It would have made it feel like the building fit in the site a whole lot better. So it's a thing, in retrospect, that I'm sorry we weren't able to do.

The other thing that we weren't able to do was—his original design, if you go to the plaza overlooking the meadow and as you're facing the bay go into the left in the little lobby area that leads into the faculty offices and so on—there's a little raised structure on the roof. Predock originally wanted that to be a lantern, a geometrically designed—I don't know exactly what he had in mind—but a sort of glass lantern that would have glowed out over the Great Meadow. That would have been really quite spectacular. But again, this was a project that was facing budget problems, and the cost estimate for that alone was, as I recall, in probably 1993 or 1994 dollars was on the order of sixty or eighty thousand dollars, and we just said we can't afford to spend that. I think that would have made a big difference in how the building was perceived as well.

We bid the building once and it came in way over budget. So we had to go back. In fact, the early designs of the building had not been well received by the Board of Regents. I remember a plane flight to Albuquerque to Predock's office with Vice Chancellor Brase, where we worked with Predock and he came up with some ideas. One of them was to clad the faculty office wing in wood-siding. That was actually bid that way and proved to be unaffordable. It would have been a very different feeling had that been the case. The problem was because of the acoustical requirements of the building we had to build a concrete or a concrete block building anyway, and then we'd put the wood on the outside of that, just

as a cladding. Where, with what was ultimately built, the walls of the building are both the exterior finish material and met the acoustical and structural requirements as well.

When we went out to re-bid we had to do some stripping of the building. So things like the wood siding fell to the side. That, again, would have made a big difference, and I think would have changed people's perception. This was a project where there was continual cost cutting going on. But when the first set of bids came in high and we went back to re-design, there were two things that we didn't want to compromise on. We didn't want to compromise on the way that the building sat into the site. We could have moved things around, or moved things up and down and so on. But we didn't want to have any more visual impact on the site than we did. And we didn't want to compromise on the acoustics, because that was so critical to the functioning of the building. So we re-bid it. I think the project still came in over budget, but little enough over budget that the campus decided to fund the difference, and I'm glad they did.

Had we had all the money in the world it would have been a very different building. But I remember coming back to my office as construction on the building was wrapping up (I must have had a first thing in the morning meeting or something like that). As I pulled into the parking lot down at Barn G where our offices were, I saw Ron McKay, the acoustician there. And the look on his face—I guess he had just done some acoustical tests that said that everything was working the way it was supposed to. He looked like a new father. He was so proud of what was going on. The reviews of the building have been terrific. I know Alan Hess wrote a very favorable article about it for the *San Jose Mercury*

*News* shortly after it was done. And it's my understanding that the users are just delighted with the acoustics. Having gone to a number of performances there—there's a lot of tuning capability. Different kinds of music require different reverberation times. So the recital hall was designed with chambers on the side that can be covered by heavy curtains to expand or reduce the volume of the area, because reverberation time is related to volume and reflectivity of the sound. There's also a reflector over the stage that can be adjusted to change reverberation time and reverberation characteristics. And I think as the users of the facility learned to tune the hall— Well, Ron was very pleased because his measurements in the space confirmed what he had predicted, how the space would perform. Everybody is always nervous about that until it's actually tested.

I know shortly after the building was built they had a student opera production. They were singing this opera in English; I think it was Mozart in English. And once I got my ears tuned to the space, with no amplification I could understand the language very, very clearly. They really did a terrific job.

The other thing that was very funny just came home to me recently. Ed Houghton, who was the chair of the building committee and a music professor himself, said, "We want the acoustics right, but we don't want you to seal up everything. When you walk down the hall it shouldn't be silent. You should know you're in a music building." A few months ago, after I retired, the new dean of the arts came up with some money to videotape me doing a campus tour. On the tour we took the student video crew into the Music Building. As we walked down the hall, nearly every practice room was in use and you could hear music coming out the door. You know you are in a music building. I think

maybe users with John [Chase]'s reaction who feel like it's in a prison need to go indoors when the building is in use and just listen. I think it sounds very different than a prison. Or see a performance there.

The other thing I wish was different—this goes into the whole formula for net to gross space. Net space, or assignable space is space that's actually assigned to a particular use. Gross space includes things like lobbies and corridors. When we do performance spaces that are funded by the state, we always have lobbies that are undersized. If you look at a floor plan of a serious recital hall—I mean, look at a floor plan of the Paris Opera House. The lobby space is as big as the hall. All those people have to go somewhere. Well, we just can't do that in state-funded performance spaces. I'm sure that's why, for example, in theater arts, what they call the Main Stage Theater now, has essentially nothing in the way of a lobby. It's really an outdoor space.

**Reti:** Right. You are outside in the cold.

**Zwart:** Under that big overhang. I'm sure it's the net-to-gross thing. Likewise, the lobby space in the Music Building ought to be three times as large to really be a proper lobby. So that's one of the economic pressures that the campus works under when they do that kind of space. But all in all, I think Antoine did a good job on siting the building. And again, late in the building's construction or early in its life, one of Ron McKay's associates, another acoustician, named Bill Doane, came by to check something out. He had gone to architecture school at Cal Poly, San Luis Obispo. David Tanza, who was colleague of mine, and our project manager, had also gone to Cal Poly. We were walking around the building,



Dave, and Bill Doane and I. Bill was checking things out and was happy with things. And he and Dave started talking because Cal Poly had built a very fancy, very elaborate performance space. It was designed by Arthur Erikson. It's really a very handsome hall. But it is lush. It was a community fundraiser. I know my sister and her husband, who lived in the area at the time made a contribution. Their name is on the donors' plaque and so on. But they didn't have enough money to finish it. So they wrote letters out raising money for the acoustical curtains. And what Bill said, "You guys got ten cents worth of value out of every nickel you put into the building." Which I took as a real compliment, because we made some hard choices. The building is very hard-edged and it does use the same building materials as you'll see in prison construction. But that's because we didn't want to compromise on the site and we didn't want to compromise on the acoustics. I think we put the money where it mattered and where it counted. So we're pleased.

### **Seismic Upgrade of Natural Sciences 2**

The Music Building opened in about 1996. The next project that wrapped up was the seismic upgrade of Natural Sciences 2, which reminds me that I don't think we've talked very much about the Loma Prieta Earthquake. So maybe I'll talk a little bit about the upgrade of Natural Sciences 2, and then we can go back and fill in about the earthquake and its impact on the campus, and my role in that.

Natural Sciences 2 was a building designed by Anshen and Allen from San Francisco. They were involved in the development of the first Long Range Development Plan and they also designed what we now call Thimann Labs,

which started its life as Natural Sciences Unit 1. I'm not sure who the structural engineer on Unit 1 was, but the structural engineer on Unit 2 was a very prominent, very skilled structural engineer named T.Y. Lin. T.Y. Lin had a reputation for really designing things to the edge. In fact, in the aftermath of the earthquake and the damage that we saw in Natural Sciences 2, I was talking to an architect who had worked for many years at UC San Francisco. He's the one who said, "Oh, Lin was notorious for just cutting it to the razor's edge." Because apparently [the UCSF architect] he had been involved in a hospital project of some sort that was under construction and somebody in the field—this may have even been a firsthand story—had some concerns about the construction of a canopy over the ambulance drop-off area at the emergency room. He had some questions to ask about how things were going to go together. So he called the engineer's office and explained what his question was. And the engineer said, "Well, let me do some calcs [calculations] and get back to you." When the callback came, Lin's engineer said, "Is there built-up roofing on that canopy?" The architect said, "Yes, there's built-up roofing." And the engineer said, "Well, how many plies of building paper are there?" He said, "It's three-ply roof. It's specified." The engineer said, "Well, can you make it a two-ply?" Which meant that he wanted to reduce the weight of the roof. (laughs)

**Reti:** Oh, my goodness.

**Zwart:** In the aftermath of the Loma Prieta Earthquake we had a protocol for going around and inspecting buildings. I was visiting a number of the buildings with a structural engineer from San Francisco named Bob Wildman. We'd actually closed off all of the buildings on Science Hill and were, as we inspected

them, opening them back up for use. And as we looked in, there were areas of Natural Sciences 2 where there was a lot of glass on the ground floor. As we looked inside, there was a little bit of concrete on the floor, just not very much. My first thought was, well, that doesn't look too bad.

**Reti:** You mean there was concrete that had fallen off.

**Zwart:** Fallen off. But it was just a very small amount. The quantity under each column was probably about half or less the size of a deck of cards. It was a very small amount of concrete. But as we went through the building, Bob Wildman saw that where the concrete had fallen off was absolutely critical. The structure of the building is pre-cast [concrete] T-beams. These are long beams that are built in a factory, brought here on a truck and then erected. They actually were done in such a way that they would form the structural element plus the floor. So if you put a beam in, that created the floor surface of the floor above. And they actually sat on little shelves on, again, prefabricated columns. So they would have erected the columns, and at each floor level, or at each beam level there would be this little shelf. And the building had moved in such a way that the beams started rocking and spalled off some of the concrete from the shelf. So what might have been designed as a four or five-inch bearing area had been reduced in some cases to two or three inches.

**Reti:** Uh-oh!

**Zwart:** Yes, exactly. Uh-oh was what— So Bob Wildman said, "Keep that building closed until I get back to the office and give this some thought." So we sent him back to San Francisco with a set of plans of the building, and they gave

it a lot of thought and they came up with a scheme that allowed us to shore the building with heavy timbers and then re-open it. But all that would do would be to strengthen the building in a vertical way. Both earthquake loads (seismic loads) and wind loads are horizontal loads. You normally think when you design a building you design for gravity. That's the first thing you design for. But you also have to design for lateral loads. That's usually seismic or wind. What you need to do is create stiffness in certain areas to avoid lateral shaking. Well, this building, Natural Sciences 2, just didn't have enough lateral resistance. So while the vertical shoring, the heavy timber would allow us to use the building—if a big earthquake came along there would probably be enough time to get out of the building but the building might ultimately go to catastrophic collapse. But they felt it was fairly safe and the risks were pretty low.

Wildman and Morris started looking at ways to introduce lateral resistance. They looked at two schemes. One would have put them [new walls] all inside the building; one put them outside the building. Well, one of the reasons that the building wound up being so flimsy in the north-south direction is that if you look at the original floor plan, one of the things that laboratory architects like to have is lots of uninterrupted floor space, because that gives you lots of flexibility in the way you lay out your floors—both from floor-to-floor and also over time. So the building was designed in such a way that these prefabricated T's spanned from a vertical wall in the center of the building to these pre-cast columns at the outside of the building, and there were no intervening columns. So there were no structural elements in between. As you looked at the floor plans of each of the four floors of the building as you went up through the building, the walls that

subdivided each of the floors didn't line up. So to go in and build what are called shear walls within that would have meant completely space planning the inside of the building from scratch. It became pretty clear early that the solution ought to be on the outside. The initial schemes that Wildman and Morris came up with added concrete fin walls outside the building. At one point we tried to see if we were to build those in concrete whether we could actually enclose some space and maybe get some additional offices around the outside of the building. But that proved to be pretty expensive and we couldn't convince the Office of the President or the state to fund that for us.

So ultimately as the design evolved, Wildman and Morris—I pushed to see whether or not they could do it with steel rather than with concrete just because I didn't want people in the building to feel like they were looking out through blinders, just looking straight ahead into the woods. So Wildman and Morris did come up with a scheme that had some pretty heavy steel tubes in a triangulated framework at four points, two on the north side and two on the south side of the building. But it's not enough just to build that stuff on the outside of the building. There has to be what the engineers call the load path, a way for those lateral loads to be transferred into the structural elements outside the building. So even though we weren't building and completely disrupting the inside, there was still a lot of structural work to do inside the building.

So a couple of interesting things happened. First of all, we went back and forth and back and forth and back and forth with FEMA [the Federal Emergency Management Agency], trying to get support to strengthen the building. And every time we appealed their decision (and we think we had good grounds for

the decision), they came up with a reason to take more money away from us. They came up with a million excuses, and finally Jim Sullivan, the vice chancellor at the time, said, "This is a losing proposition. They're not going to fund it. We need to find some other funding." And we managed to get some funding from the Office of the President and the state to do it.

The other thing that happened, though, was that as we thought about doing the structural work on the outside we thought that would minimize the impact and that we could keep the building occupied as we did the work. But as we started looking at the full extent of the work it was clear that we were going to have to vacate the building to do the work.

The building housed at the time primarily physics and astronomy. So the physicists and astronomers were moved over to Kerr Hall in the short term. There wasn't a lot going on in Kerr Hall because College Eight had moved to new quarters. College Eight had been established in the mid-seventies but didn't have its own buildings until 1989. So that had freed up some space in Kerr. And it turned out when the physicists got into Kerr they liked it better because there was a big lobby space and the offices were bigger and so on. So they put down their heels and they didn't want to move back, which ultimately led to the construction of the Interdisciplinary Sciences Building which proved to be successful as well.

We took the opportunity, since the Natural Sciences 2 building was going to be vacated, to solve some fire code related issues. I think we upgraded the building's wiring, the data wiring in the building, in particular. It wound up

being a very successful project. What people don't realize when they look at the steel buttresses on the outside of the building, is that each of them sits on a concrete foundation tube that's thirty or thirty-six inches in diameter and goes twenty to thirty feet into the soil.

**Reti:** Oh, my goodness!

**Zwart:** All of that load needed to be transferred down to the earth and into the soil to avoid any kind of overturning motion from the top. So that was really quite a structural element. I had to be very careful what I said at the time we were working on the planning of this. Karl Pister had just been made chancellor. He'd been dean of engineering at Berkeley. And given that T.Y. Lin was a faculty member at Berkeley, I had to be very careful about what I said about the structural adequacy of Lin's design on the building. (laughs) But we got through it and I think the building was improved as a result of it.

But it was a real lesson in federal bureaucracy. I know I took one trip back to Washington, D.C. to meet with Sam Farr, who was our congressman, and to meet with some FEMA people. It was just an exercise in frustration. They had just decided they weren't going to fund it. The frustrating part was—I think it was the Northridge Earthquake of 1991 that badly damaged the Los Angeles Memorial Coliseum. Again, it was an old building that needed to be strengthened to new codes. Somehow FEMA came up with the eighty million dollars to strengthen the Los Angeles Coliseum. But they wouldn't come up with the three or four million dollars to strengthen Natural Sciences 2. It confirmed for me what one of our consultants who knew about FEMA said, "Lots of FEMA

stuff is a political proposition. And given that the population in Los Angeles has a few more votes attached to it than the population in Santa Cruz—there you go.” So that was a lesson.

### **The Loma Prieta Earthquake**

But the earthquake was, I think, a moment that nobody living in Santa Cruz at the time is going to forget, for lots and lots of reasons. I was in my office. Everybody in Northern California at the time knows that it was 5:04 p.m., October 17, 1989. We just don’t forget that. I was in my office down in Barn G and I was meeting with one of our architects, Bill Taber. I don’t know what Bill was working on at the time. It might have been the Music Building. Bill was the project manager for the Music Building early in its life.

I had felt earthquakes before but this was like a big hand had taken the end of our building and was just shaking it back and forth. I heard some glass breaking. Bill and I looked at each other and said, “Wow! What was that?” We and everybody else hustled outside. But as we walked through our building we didn’t see a whole lot of damage. I think the glass that I’d heard was a drinking glass or a vase or something falling off an upper shelf. There was a little bit of disorder, but nothing catastrophic at all. So I had no real sense of the extent of the damage. Now again, Northern Californians of that moment also know that the Giants and the Oakland A’s were playing in the World Series that night.

I went downstairs and was looking around. By chance, I had read the campus disaster plan not long before then, and saw where I was supposed to gather, where people would be told what to do. I went there and there was nobody



there. It was just outside of our building, but nobody ever showed up there. So I went out to my car and turned on the radio. My radio was tuned to the station that was broadcasting the World Series game. [They were playing] a Budweiser commercial. I thought to myself, well, gee, if they're doing the game and it's a Budweiser commercial it can't be too bad. So then the broadcasters came back on and talked about the fact that they'd felt it in San Francisco.

That night my wife and I were scheduled to have dinner with friends in one of the faculty housing units right next to Barn G in the Cardiff Terrace development. The director of labor relations, a guy named Bob Bickel, had just accepted a job at Harvard and there were some farewell celebrations for Bob. And in fact Julia [Armstrong-Zwart], my wife, was at a farewell reception for him at the University House at the moment of the earthquake. So she and I were to meet there and I kept checking where we were supposed to check in. Nobody ever showed up. So I figured, well, okay. This was in the days before cell phones. I should mention that.

**Reti:** Yes, I was just thinking that.

**Zwart:** People weren't carrying cell phones in those days, or texting, or any of that kind of stuff. We had agreed to meet at Gary Lease and Dorothea Ditchfield's house. I just walked over because it was a hundred yards away. People were gathering there. By this time, I think all of the electricity was out. But Gary was cooking with gas and had candles. So they were fixing a nice dinner.

Julia came down from—I don't remember what the exact chronology was—somehow she had gone home. Her kitchen was just a complete mess. I guess I got home as well. I was living downtown and I saw some stuff out of cabinets and on the floor. My house was fine. There was stuff all over the kitchen, but nothing like Julia's. Anyway, we all wound up back at Gary's house, with an increasing awareness of how serious this situation had been for a lot of people. Somebody had a battery-powered radio at Gary and Dorothea's and we were listening to reports of the Bay Bridge collapse and fires in the Marina and so on.

At some point there was a phone call to Gary's that was tracking me down. They'd actually pulled into place the Emergency Response Center at the [UCSC Campus] Fire Department. So I went up there and actually wound up spending most of the night there. A lot of people spent the night in tents outside, and we went around inspecting various dorms. I don't remember who all got involved in the various inspections. I know I did a little bit, but a lot of people got involved. Over the next few days, we had engineers and architects coming in from other campuses, and coming in from throughout the state just to make sure to give clearance to all of the buildings. And it was really there that the usefulness of the UC system came into place. Because I know that Hazmat teams came up from UC Santa Barbara to assist. The protocol in the laboratory buildings was to shut them down, get everybody out, and not let anybody in until skilled Environmental Health and Safety Hazmat [hazardous materials] teams had gone through to make sure there weren't any hazards resulting from spilled chemicals. First, it was the Hazmat investigation, then it was the structural analysis, and then it was all clear. That took several days to get those all back online.

I remember a series of meetings at the conference room in the Fire Station where all of this stuff was being coordinated. I remember some people saying, “Oh boy, it’s a good thing it wasn’t any worse. We really would have been in chaos.” But the simple fact is that you can’t write a script to react to something like that. It was really a matter of improvisation. And what really got us through is that because the campus was a relatively small campus community, people knew who could do what and called on them and they did it. So we got through it.

The campus didn’t suffer very much damage. Natural Sciences 2 was badly damaged, as we talked about a few minutes ago. There was some concrete spalling and concerns at some of the residence halls over at Stevenson. There was some pounding of concrete building parts at what was then the Applied Sciences Building, [now called] the Baskin Engineering Building. But as we went through the campus—given that we were only eight or ten miles from the epicenter, we did remarkably well. The biggest damage that I saw, the biggest concern was really to contents and furnishings. Some of the photographs that I saw, for example, of the shelving at McHenry Library where it just buckled—<sup>43</sup>

**Reti:** Oh, yes.

**Zwart:** —was really quite frightening. There were photographs of some of the faculty offices in Kerr Hall, where pretty flimsy shelving had been attached to the wall and it came down in a heap. I think one of the most serious injuries was in a

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<sup>43</sup> Allan Dyson’s oral history contains a detailed discussion of the damage done by the Loma Prieta Earthquake to McHenry Library’s stacks.

lecture hall (and I've seen videotapes of this happening) in Kresge College where a ceiling-mounted light fixture came down and hit somebody in the wrist.

But all in all, the campus did remarkably well and it was a real tribute to a couple of things. One is to the skill of the engineers who designed the buildings in the first place. And second, to the fact that the campus had taken seismic safety really quite seriously, and in fact it had completed a series of retrofit projects. For example, in summer of 1988 they had done some strengthening of the Cowell and Stevenson dining halls and the Cowell College residence halls. There had been a number of those kinds of things that had gone on. In fact, at the time of the earthquake we were in the middle of a major seismic upgrade project on Thimann Labs. They'd actually weakened the building in order to strengthen it. But the building didn't sustain any further damage, so we were able to complete that project as originally planned.

It was also real evidence of the increasing effectiveness of structural design in succeeding years. I don't think it's an accident that the buildings that saw the damage—I mean, looking at McHenry Library, McHenry was built in two phases. The first opened in 1966 and the second in the mid-seventies. I think during that time, the structural design criteria for library shelving was strengthened so that later shelving had lateral bracing and was stiffer. The damage to the shelving tended to be more extreme with the older shelving. Likewise, later buildings seemed to come through better than earlier buildings. And that's one of the sad facts, that a lot of seismic design theory comes from evidence gained painfully from previous earthquakes. As soon as there's a major earthquake, structural engineers descend on the site to learn what they can and

see what they should be doing with their codes, and that's certainly been the case.

The other thing that we were fortunate with is that, while our geology is awful, our soils are very good. We have very stiff soils. We didn't suffer the kind of damage that downtown Santa Cruz had. Downtown Santa Cruz is on an old riverbed. And the unreinforced masonry buildings downtown (as a geotechnical engineer said to me), were subjected to shaking of low frequency, high amplitude. So it moved slowly, but it moved a long way. That led to more damage than high frequency, low amplitude. We had good stiff soils to build on. We had qualified engineers doing the work. Our inspectors did a good job of making sure things were built as designed. So we came through it pretty well. And one of the examples I would give about that is that in the immediate aftermath of the Loma Prieta Earthquake the Regents issued a fifty million dollar bond measure for seismic safety. Of all ten campuses we got the least amount of money out of that even though we were closest to the epicenter. I think that was a testament to what we did.

It also got all of the campuses, and us too, to pay more attention to issues of disaster response. There were increasing drills. Now, the one negative part of that is that disaster planning tends to focus on the last disaster that you had. So when we were doing disaster planning we were looking mostly at seismic response. We had to keep reminding ourselves, well, that an earthquake might not be the only kind of disaster that we have to deal with. But I think the campus is in better shape, and in fact it now has—I don't know what his title is, he's in the fire department, Chris Gaylord is charged with—I don't think they use the

term “disaster preparedness,” but it’s preparedness. That’s his profession [emergency preparedness—Editor]. So I think the campus is in better shape than it’s ever been to deal with something like that.

You could probably chart on a graph aftershocks—which were intense in the immediate aftermath. These are always charted moving left to right with time. They got less and less frequent as you move further away from the event. The thing that I think would chart out the same way was frequency of conversations about the earthquake. (laughs) Now it’s twenty years on and we just don’t talk about it a whole lot anymore. That would change tomorrow if we had another big earthquake.

**Reti:** Yes. Although I have to say that in almost every oral history that I do, even ones that you wouldn’t think have anything to do with the earthquake, such as organic farming—the earthquake is a defining event in Santa Cruz history. It’s interesting how often it comes up.

**Zwart:** Oh, no doubt about it. The other thing that was so interesting was that in the immediate aftermath of the earthquake, the campus was seen [by the community] as a benefit. That came at the end of a whole period of anti-university growth, and oh, “we hate them,” and so on. And in fact, afterwards—Jim Pepper, the environmental studies professor, put together a series of public sessions. He called on his resources at Berkeley’s College of Environmental Design and so on to come down and talk about rebuilding after earthquakes. It was a real impetus to help the city and the county get back up and going again. I mean, it was absolutely key. That just wouldn’t have happened without the

university here. Likewise, the campus was seen as a stable economic base. I mean, shortly after the earthquake there was an economic setback in the early 1990s, a slowdown.<sup>44</sup> But its effect was much less pronounced in Santa Cruz than it would have been had the university not been here.

I also remember—this was a shocking event and even more shocking in retrospect. Among the buildings that were severely damaged in the earthquake, was the old JC Penney's, which was on the corner of Cathcart and Pacific Avenue in downtown. And that ultimately became the site of the University Town Center. Well, a local developer, Barry Swenson, was proposing to—

**Reti:** JC Penney's or Leask's?

**Zwart:** Both. I think it was both. For a while you could walk through the site of JC Penney's and see the old tile checkerboard floor that had been there, in the ruins, where I had gone to buy my underwear when I was an undergraduate.

**Reti:** Yes, me too!

**Zwart:** (laughs) Barry Swenson wanted to redevelop that corner and did a build-to-suit that was going to work with University Extension, particularly their English as a Second Language program. Dean Fitch from our office and I, went to a city council meeting. The city was still struggling to rebuild before a lot of things came up. We sat in the city council chamber where the redevelopment director was talking about this possible project. We heard things about the

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<sup>44</sup> Zwart is referring to the U.S. recession of 1990-91.

campus that I don't think we would have ever heard before or after, which were things like: "This is why we're glad we have the university here. The university is a good neighbor. They're here for the long haul." And boy, Dean and I said to each other, "Enjoy it while it lasts, because it won't last forever." (laughs) And it didn't. But the fact was that the university really did play a big role in helping the city get back on its feet.

**Reti:** So today is August 30, 2010 and I'm with Frank Zwart. We're going to begin by talking about the improvements to the arts buildings. This is a continuation of our oral history tour of the campus buildings.

**Zwart:** And doing it more or less chronologically.

### **Baskin Visual Arts Complex and the Arts Area Master Plan**

The improvements to the arts facilities project was an interesting one because we had actually picked a different architect. A piece of the improvements to the arts projects was to add on to the Music Building. The money that was available in the state capital program wasn't sufficient to build all of the Music Building at once. So the campus put together a group of projects, additions to arts facilities that included completion of the Music Building that Predock had designed along with the original construction phase. And then, if I remember correctly, there were two painting and two sculpture studios, plus some other technical facilities to be built as an addition to the Baskin Visual Arts Complex. Then there were two major facilities for what at the time we called the Performing Arts Complex—a black box or experimental theater, and a media theater equipped for high-quality video and film projection.



I think our original assumption was that Predock's office would do the expansion to the Music Building. In the capital planning process it took a while for all of these pieces to come together. So we had actually picked two separate architects for the Performing Arts piece and the Baskin Visual Arts piece. [For] the Baskin Visual Arts piece, the recommended architect was an architect from San Francisco named Dan Solomon. And the expansion of Performing Arts would be a New York firm, Jim Polshek. Polshek and Partners was a long-standing firm in New York. They had opened up an office in San Francisco and had a lot of experience. Unfortunately, as we started our negotiations for appropriate fees for those two projects [we faced a problem] because the projects were relatively small—typically, as a percentage of construction costs, architects' fees go down the larger a project is. It's an economies of scale question. And the University's recommended fee scale and the budgets they put together don't entirely reflect that. So we simply weren't able to come to a fee agreement with either Dan Solomon or Jim Polshek and Partners. They were both very good firms. We would have liked to have worked with both of them very much. But that just wasn't going to work. We didn't have the money to meet their fee expectations and it's unrealistic to expect an architect to take less than what they think it's going to take to do a job, because you're not doing them any favors and everybody's going to be unhappy in the long run.

So in both of those selection processes, as it happened, the second firm recommended by the selection committees was a firm from Portland, Boora Architects. I think they had done some work on the campus before. Once we put everything together and they took responsibility for the working drawings for

the addition to the Music Building—putting all of that together, we were able to reach a fee agreement for them and they worked successfully to do that project.

If I remember correctly, we had gone far enough along with Dan Solomon's office and with Jim Polshek's office to do some master planning. I think I talked in one of our earlier conversations about the fact that I was pleased that the Music Building wound up where it did, to create an arts village, to get the arts disciplines working together.

**Reti:** Yes.

**Zwart:** And one of the things we very much wanted to do was to knit back together the Visual Arts Complex and the Theater Arts Complex. Years before, when we had interviewed Cathy Simon (who had been involved in designing the Baskin Arts Complex) for the Student Center project, she had showed a diagram where quite consciously the Baskin Arts project turned its back, or least turned its side, towards the Theater Arts Complex. And we really wanted to knit those back together. The master plan that Solomon and Polshek developed required re-routing the road between Baskin and the Theater Arts Complex in order to make space for what wound up being four teaching studios right along the road.

**Reti:** Is that the accordion-looking building?

**Zwart:** Yes, that's right. The road was re-located and that made enough room to add those four studios. They were developed in an architectural vocabulary, a concrete block that repeats what was used down at the Music Building. And then

the Theater Arts Complex with the black box theater and the media theater used the same vocabulary. I remember quite well that in some of the early planning conversations for that project, one of the building committee members was a member of the theater arts faculty, Norvid Roos, who is a set designer, but he also had done some industrial design, and so he was very sensitive to these kinds of questions. I always liked the idea he had about creating the space that would link together Baskin and the Theater Arts Complex. He talked about having “faculty traps” there where students could sit on a bench and lie and wait for faculty and trap them as they walked back and forth, and pounce on them.

**Reti:** (laughs)

**Zwart:** (laughs) So when I go through there I always think of it as a faculty trap.

It’s all paved in asphalt, so if you go there today it looks more like an extension of the roadway system, a space that vehicles could move through. It would be terrific to think that someday there might be some money to turn that into a plaza. If we could come up with a circulation route (it’s pretty important for the campus shuttle circulation), but if we could come up with a circulation scheme that would really reduce the vehicular traffic through there and turn that into a more articulated space, I think that’s a real potential.

But the notion of actually getting arts and theater arts near each other, and looking back and forth, I think was a successful thing. The recent completion of the Digital Arts Facility, in fact has all of those disciplines right in it. There’s electronic music in it; I don’t know if there’s theater arts space in it or not. But there are conventional painting and drawing studios, sculpture studios, faculty

offices, and then all of the digital high-tech stuff that really brings it together. We're happy that the physical setting of the Arts Complex really made that happen and made that worthwhile.

### **Seymour Marine Discovery Center**

Looking down the chronological list of projects, the next one that is on the list is the Seymour Discovery Center, what started its life as a visitor's center, and then became called the Marine Discovery Center. When the Seymour family gave some funds to support it, it became the Seymour Discovery Center. That was a project that was supported by the UC Santa Cruz Foundation. I never thought it was entirely fair, but some of the members of the Foundation didn't think that the university could do anything cost effectively. They were willing to give the money, but they wanted to run the project. It was built under contract between the contractor and the UC Santa Cruz Foundation, rather than between the contractor and the UC Regents. The California State University system does a lot of that. In fact, it's been in the newspapers recently about how that's blurred. I have the impression that the CSU is getting into a little bit of hot water over that. The UC Regents and the Office of the General Counsel have always wanted to see more of an arm's length relationship, and I guess we've kept that necessary length. And as we worked with the Office of the General Counsel and the Office of the President and the campus to put it together, there were certain requirements that they had of us, that the Foundation had to live by—paying prevailing wage to the contractors, for example, which is effectively paying close to union wage. That all was worked out.

We went through the architect selection process. As the work on the project started, we didn't know what delivery mechanism would be used or whether the Regents would be holding the contract or the foundation. So we did go through the standard university consultant selection process.

By the time we got around to picking the contractor, the decision had been made that the foundation would be the client, would be holding the contract. So we went through a selection process, although it wasn't the full public works bid process. They interviewed, I think, four construction management firms and picked a local contractor who hadn't worked on campus for many, many years. They did quite a good job in getting it done. But the architect, SRG Partnership from Portland, was a firm that the campus had first been exposed to, oh, probably eight or nine years previously, when we had been looking for an architect for what started its life as Natural Sciences Unit 5, and then became the Chemistry Building, and then wound up being called the Physical Sciences Building. SRG had come in in a joint venture with a San Francisco firm, and while they hadn't been selected, in their interview (and it was my first exposure to the firm) they showed two or three projects they had done on the Oregon Coast for academic enterprises. I don't remember whether it was for Oregon State University or the University of Oregon. But they had done a couple of marine facilities on the Oregon coast. So I kept them both in my computer database and also in my mental database, to keep them in mind when we had something at the Marine Lab.

So when we started the selection process for the master plan and then the Discovery Center at the Marine Lab, I made sure they knew about it. And they came down and competed very well.

Jon Schleuning, who I think is the S of the SRG Partnership, is a very capable and enthusiastic guy, and very, very good in workshop settings. He, I think, got his architectural education at Berkeley, and worked for a while in San Francisco before going back to Portland to establish the SRG Partnership. Both in working with the user groups on coming to terms with the master plan that the Marine Lab had put together and then trying to understand how to think about the Discovery Center, he was really something to watch. He did it very, very well. He is a very good listener. He really tries to understand the heart of a problem. He does more than write down what the people say. There is interaction between him as a thoughtful architect and planner and the user group.

Thinking back on some of those early conversations about what the Discovery Center was to be, he really wanted to understand what the Long Marine Lab was and how it worked. It was pretty clear in early conversations that the Marine Lab is a unique institution. It has been—and with the completion of the Discovery Center is even more so—one of the great areas of campus outreach to the local community. But there is also serious science going on there. On the other hand, when you talk about building a visitor center, people talk about national parks or that sort of thing. Well, it's not a national park. Just across the bay from us we've got the Monterey Bay Aquarium. That's a whole different enterprise. There's no way that something as modest as the Marine Discovery Center could compete with the Monterey Bay Aquarium. I think one of Jon's really great contributions

to what happened down there was to get the work to focus on the fact that it's a marine lab. It was interesting. One of the analogies that he used was going to a winery or a brewery. On the one hand, you want visitors to keep a certain distance away from the research that's going on there. On the other hand, you want visitors to be aware of it and to see it. That became one of the models.

I think one of the smartest things they did—again, Jon working with the administration of the Marine Lab, and Gary Griggs and Steve Davenport and the public programs people down there—was not just to focus on the ocean, but to focus on the researchers. So if you go down there and take the tour of the Marine Discovery Center, they actually present to you as people the half-dozen or dozen researchers that are doing work down there. And then they use some very interesting techniques to demonstrate the nature of their research to the visitor. It's quite unique in that way. It builds on what the Long Marine Lab does and what its mission is. It's a spectacular, spectacular site, and it really has been a very successful project. I'm glad we were paying attention way back. The chemistry interviews, the Natural Sciences 5 interviews, led us to SRG.

SRG continued to do work at the Marine Lab. That project was so successful that a few years later the Marine Lab and the UC Santa Cruz Foundation raised some funds for an academic building down there as a continuation of that partnership between the UC Santa Cruz Foundation and the campus and the Marine Lab. SRG was again selected to do what became the Center for Ocean Health, which became a laboratory building down there on the original part of the Marine Lab. We've used Jon in subsequent work at the Marine Lab. We brought him in for some planning exercises. The other thing that SRG was very, very good at was to

understand and explain the context, both the physical context and the academic or institutional context of a place. And so, as he went through the design review process with the Design Advisory Board, he really did a terrific job of explaining how the evolving design of what became the Marine Discovery Center worked with the physical setting, with the master plan that had been prepared for the physical setting, and for the institutional goals and mission of what was then called the Long Marine Lab.

### **The Wellness Center**

Two other projects that came to life in the late 1990s came to life at about the same time, and they were two student services projects. One was what is now called The Wellness Center. I think it started its life as the Fitness Center at the East Fieldhouse, for OPERS—the Office of Physical Education, Recreation, and Sport. And the Bay Tree Bookstore and Graduate Commons. And if I remember correctly, I think we did the architect selection for the bookstore project just before I took off for two or three weeks to get married and go on my honeymoon. So that would have been 1996. We picked Esherick, Homsey, Dodge, and Davis to do the bookstore and Graduate Commons project.

And then at about that same time we selected Boora [Architects], again, the architect who had done some work with us at the Arts Complex, at the Improvements to the Arts project—to do the Wellness Center. So those two projects moved forward at about the same pace.

The students on the OPERS project, on the Wellness Center, put forward an initiative to improve athletic facilities on the campus. They had done a few of



those [initiatives] not successfully. And so, if I remember correctly, on this one they put together two different funding levels. They said, for  $x$  dollars a quarter on student fees you can buy this much, and for  $x$  plus  $y$  dollars you can buy this much more. Students had a choice of nothing at all; the lower fee; or the higher fee. And I don't remember the exact requirements for passing a student referendum for funding, but I think it's more than a simple majority. I think it's something like a majority has to vote, and sixty or sixty-six percent vote yes, or something like that. It's not a simple matter. So they structured it in such a way that if the higher fee received that amount, then the higher project would become the program. If that didn't have enough, then those votes would be counted toward the lesser fee. In other words, you essentially were casting two votes if you voted for the full fee. So that's what happened in this case. They didn't get enough votes to build the full complement of facilities that they wanted but they got enough to build the smaller one. The major part of it was what's now called the Wellness Center. Boora did some master planning about looking to the long range and seeing what they could fit around the Fitness Center. And they came up with a scheme, a very simple, straightforward steel box with a little bit of elaboration, with a tiny bit of fancy roof stuff. But it really is, I think, one of the nicest exercise facilities I've ever been in.

**Reti:** It's world-class.

**Zwart:** It's got terrific views out over the fields and the bay. And it's widely used. Shortly after it was opened, I was talking to Dan Wood, who at that time was director of OPERS, and he said, "We should have built it bigger." I know they would have liked to. But it's very, very popular and very well done.

**Reti:** When you are on an exercise bike you feel like you're going to fly out over the bay.

**Zwart:** That's right. It's very nice. I have taken advantage of staff access to use it for several years. It's nice to use and I enjoy it.

### **Bay Tree Bookstore Expansion and the Graduate Commons**

The bookstore story is a challenging one, or it was a long one. There was a lot of discussion about where an expanded bookstore should be sited. The then-existing bookstore had been approved in the late sixties and completed in the early seventies. It was about 8000 square feet. People who pay attention to college stores have benchmarks for how big a store should be related to the population. We had outgrown that facility. I think the program that wound up being developed for the new bookstore wound up being almost three times as large as the old bookstore. We were happy to pick Esherick, Homsey, Dodge and Davis as the architects. I've talked a lot about them during these interviews and they've done very good jobs.

But the other really key part to that project happened during the programming phases. The graduate students, for the life of the campus, had been paying money into a facilities fund. And they had a pot of money. I don't remember whether it was the same ballot as the ballot for the OPERS fitness center. It might have been because the timing is about the same. But they also put a student fee [up for vote], solely for the graduate students, to build a graduate center, because there was a feeling that graduate students typically were so focused on their own individual departments that there was no central meeting place for them, no

place for them to get together, no sense of the broader graduate enterprise. If I remember correctly, it was structured similarly to the one for OPERS. There was either nothing; a lower level; or a higher level. Once again, the graduate students didn't get enough votes to pass the higher level, which would have resulted in a bigger Graduate Commons. They got the lower level and they went ahead with it.

Then there was a discussion of potential sites. The graduate students very much wanted to have a sense of identity. This building was to make the presence of graduate students on the campus visible, as well as providing badly needed facilities for graduate students. We very much wanted to see them clustered with the bookstore because of the potential synergies there. And it took a little bit of convincing.

**Reti:** Synergies between the bookstore and the Graduate Student Commons?

**Zwart:** Well, as a way of gathering people together.

**Reti:** I see.

**Zwart:** For example, if we had built them as separate facilities on separate sites, each of them would have had to fund infrastructure to whatever that site was; each of them probably would have paid to develop some sort of outdoor space; each of them had functions that would draw graduate students. Graduate students go to the bookstore just like undergraduates do. So the notion was that this would be something that would build on a student-focused area and give them some presence.

We essentially said, “We really think your dollars will go farther if you join in and we develop it as part of the bookstore complex. Because you can share the costs of infrastructure improvements, share the costs of exterior development, landscaping.” They decided to do that. But they wanted to make sure that their graduate facility wasn’t ramrodded by a committee that was full of undergraduates, or was driven by the bookstore management or the bookstore needs. So there were actually two separate building committees on that project, one for the bookstore and one for the Graduate Commons. Every time the architect came to town (I think those committees met jointly from time to time), the morning was for one and the afternoon was for the other. Our project manager, an architect named Bret Caton, did a terrific job of coordinating that. We had a very practical client in the bookstore.

We also had a really practical set of clients for the Graduate Commons. The Graduate Commons Building Committee was co-chaired by two graduate students. One, Katie Flynn, was an astronomy and astrophysics graduate student. And the other, Laura Moore was in earth sciences. They were terrific. I predict that one or the other or both of them may very well wind up in academic administration one day. They were very good to work with, very pleasant to work with. They were articulate about what they needed. We wish all building committees had chairs as responsible and responsive as they were.

They did something very smart. They knew that to make this successful they really wanted to have food service there. So they went to the then-management of the Whole Earth Restaurant and said, “If you will come here, we’ll build this and you can be our tenant and we’ll renew your contract and so on.” With that

agreement, they were able to include a food service facility in the program of the Graduate Commons, which then wound up being right on the ground floor of what they now call Quarry Plaza and it opened up to the outside. Unfortunately, the Whole Earth Restaurant didn't survive the first couple of years of that turnover, so now it's Joe's Pizza and Subs. But it's a very popular eating place, and I think EHDD did a terrific job of opening that up to the outdoors and having the space enliven the eating facility, and vice versa. I think it works very, very well. I also know the graduate students just wanted to make sure they weren't going to be buried behind anywhere else. I think they had some initial misgivings about being sited where they were. But EHDD, by the way they laid out the main building, and the way that they laid out the Graduate Commons, even though it's towards the back—the whole visual focus as you walk into the place leads you to the Graduate Commons.

**Reti:** Yes, it's easy to find.

**Zwart:** It's easy to find. Even though it's not right in front, it's prominent. I think it's been a very successful complex.

The other thing that happened, that was very interesting during the development of the project—apparently—I didn't realize this, but [the design of] college stores is a retail specialty in itself. There are consultants who consult on college stores. In the mid-nineties, as we were going through the architect selection process, we also wanted to pick a bookstore consultant. It turned out that there were three of them in the United States, one on the East Coast, one in the Central United States, and one in California. So we went through a selection process as required by the

University's policy and picked one from the West Coast, who our bookstore manager, Bob McCampbell had known and thought very highly of. He had a lot of input into the project.

But as the project was being designed, if I remember correctly, the size of the bookstore's original program was going to be about 24,000 or 25,000 square feet. And the bookstore consultant simply said, "For projects of that size you either have to put it all on one floor, or at most put it on two floors. If you wind up carving those functions into three floors, you don't have enough flexibility to move things around. I've seen some campuses try to do it and more often than not the campuses regret it. They wind up having retail problems and often retail failures."

There was enough room on the site to fit these 24,000 square feet in a two-story building. But I know talking it over with Chuck Davis and talking it over with the campus planning staff, we felt it was not a very good use [of the site]. Putting only a two-story building on a prime site in the central campus just wasn't a good use of the real estate. I started talking about that in campus meetings, and much to my pleasure and delight, the Division of Student Affairs (the vice chancellor at that time was Francisco Hernandez), they had actually been putting some money aside in a facilities fund. They had—I don't remember how much—but they had some money available for building facilities, for capital expenditure, and they badly needed some office space and some meeting room space. So they decided to add a third floor to the program.

The bookstore was very concerned that they didn't want all the traffic running up to this top floor running through the bookstore and so on. So the plan was what was built. There is a completely separate elevator and entryway that provides access only up to the top floor.

**Reti:** Oh, otherwise there would have been a security problem.

**Zwart:** Exactly. There were a lot of concerns about pilferage and shoplifting and the like. Those concerns were set at ease. So the program developed and EHDD was able to add that to the program fairly simply.

And then, somewhere through the project, the bookstore's revenues weren't as robust as they had been when the initial planning was done. So the bookstore management got a little bit concerned that they weren't going to be able to afford as much space as was originally planned. I think, as I understood that from Bob McCampbell, part of what happened was in the prior years they had generated a lot of revenue selling computers to students. They had good deals with Apple; they had good deals with, I don't know, Dell or one of the other PC manufacturers. It was not uncommon for students to come to college and buy their first computers here. But as people got used to that and as students were getting computers in high school, increasing numbers of students were coming to college with their computers. So that as a revenue stream really dwindled for the bookstore. Fortunately, because bookstore space is just sale space, loft space, EHDD was able simply to cut one bay of the building out and reduce its length and get back to the size that the bookstore thought they could afford. They

actually were able to do that with very little interruption in the design time. So that wound up being very helpful.

**Reti:** I would also think that that time period of reduced income to the bookstore coincided with the rise of online book sales, especially in the textbook market.

**Zwart:** It may have. That could have been a part of it.

The two revenue sources I remember Bob mentioning to me were computers and backpacks and knapsacks. Again, students were bringing stuff to school and just not buying as much at the college store. But I think all of that contributed to it.

The project went ahead. We bid it successfully. And then the construction just took forever. The contractor, a firm called S. J. Amoroso from Foster City, had built at least two projects very successfully for the campus. They had been the contractors on the Science Library and they had been the contractors on the academic building at College Ten. They had done very good work for us as well. But this project, I don't remember the exact—but it came in a year and a half or two years late. A little bit had to do with the difficulties of the soils condition, but not a lot. The building was actually built on piers that were drilled down. Bob McCampbell's old office looked over the construction site. There was an awful lot of work to be done to get the foundations and the piers drilled. And then all of a sudden the steel went up. He said, "I was watching. Six months they were playing in the dirt and then in three weeks I had a building!"

**Reti:** (laughs)

**Zwart:** (laughs) Because the steel went up. That's the nature of steel construction.



But it [construction of the building] just dragged on and on and on. I knew the president of the company and I called him. He said, "Oh, we'll be done in a month." And I said, "Come on." It just dragged on forever. It finally got done. We went into mediation. We were able to retain a significant amount of money to give back to the bookstore to make up for some of their financial losses. But overall, I think it's been a very successful and very useful project.

It may have been the first use of metal siding on the campus as an exterior material. We've gone on to use it on the Colleges Nine and Ten, and on the Physical Sciences Building, and on the Humanities Building. But I think that may have been the first one where metal siding was proposed. I think if you had told me ten or fifteen years ago—metal sidings on buildings at Santa Cruz—I would have said that's not our aesthetic. But I think EHDD proposed it as a hard [look]—I mean, it's the entrance to a quarry. It's sort of industrial. It was a rural industrial site in its early days. The notion of a metal building with a hard, rugged, industrial feel to it is pretty much in keeping, and I think EHDD did it very well.

The other thing that they did was to model the building. Pacific Gas and Electric set up an energy center in San Francisco that had included in it a physical device that would allow you to put models of buildings in and test sun angles and sun shades. EHDD probably did some computer modeling but they also built a model and took it to the PG&E energy center to work on the design of the sun shades, to reduce the heat load into the building. And then, in the design of the building they actually articulated that with the very bright yellow sun shades that are on the building today and really enlivened the space terrifically. So I

think it wound up being a very good project that then made what the campus later named Quarry Plaza as the public space between the new bookstore building, the old Bookstore building, and the Redwood Building and the Graduate Commons.

**Reti:** So I have a couple of questions about that site. The first one is about the use of the old Whole Earth Restaurant building and Bay Tree Bookstore building—the buildings made out of redwood. Were they originally intended to stay there? Because they make for quite a contrast—metal building on one side and the redwood buildings on the other. I've actually heard people say, "Well, there's the old UCSC and there's the future."

**Zwart:** Well, a lot of people say, "Why didn't you build it all in wood?"

**Reti:** Yes.

**Zwart:** Once you get to a certain size of buildings, then it gets very tricky to do wood because you get into fire code issues. It's not impossible. Look at the Humanities Building, where they actually use a little bit of wood on the outside as accent. But to do the entire building in wood creates some code challenges. They are resolvable, but you have to pay attention to it. It also creates maintenance challenges. An enormous amount of wood surface takes a lot of ongoing maintenance. I think for the scale of the building they made a good choice. I'm very fond of, particularly the [old] bookstore building. I was having lunch with Chuck Davis or maybe I was walking through the old bookstore building with him once. And he made some kind of comment about, "What kind of floor is this?" I happen to know that the floors in the old bookstore building

are pecan wood. I impressed him very much. I'd picked that up from Chuck Kahrs years before. So it's a nice and functional facility. I also think that—it was built in the early seventies. It's getting close to forty years old. There are no immediate plans to do anything with it. But I think as the campus grows that might be a site for expansion of larger facilities there. It is a matter of scale. As I said before, that building was built as 8000 square feet and pole construction is fairly economical. My guess is that it was always seen as a site that would be used for something bigger in the future. I don't know that for a fact.

A little piece of trivia (I don't know how I came across this), but the design for the original bookstore building, which was designed by a San Francisco architect named Henrik Bull, known for barn-like structures, was approved at a meeting of what was then called the Campus Planning Committee, in 1968. Chancellor Dean McHenry was the chair of that committee. And that was approved sometime in 1968. At that same meeting, the Campus Planning Committee approved the design of the campus's first parking structure, which then never got built. It got hung up in controversy. So that's a little bit of trivia.

So I think in the long run those (Redwood Building and original bookstore) may be sites for something else. We've done some studies over the last few years about what the potential is. I know one of the surprises to people on my staff, people on the campus's planning staff, in talking to students—and this probably would have been about three and four years ago, looking at what students wanted—as people who had been around for a while, Santa Cruzans, Slugs who had been around for a while—we were surprised to hear the degree to which

then-current students wanted things like fast food outlet chains represented in new student facilities.

I think one of the real challenges that the campus is going to have, moving forward, is that if you go to campuses of about this size—the campus is now 15,000 or 16,000 students, going up to 19,500—if you go to campuses of this size and you look at the kind of student facilities that they have and the kind of plazas that they have—they are just *big, big* spaces. Short of clear-cutting a bunch of redwoods, there just isn't that kind of real estate around on the Santa Cruz campus, in the developed area of the campus, to develop those kinds of spaces. I think one of the challenges that the campus really is going to have, and one of the things that makes the campus such a pleasant environment to occupy, is that the scale of things is just not overwhelming. We've done things fairly modestly scaled. They fit in very well with the redwoods and so on. If we look at some of our recent science buildings—the Physical Sciences Building or the new Engineering Building—it's not uncommon on university campuses to see buildings two and three times that size, built all at once. And those are really tough, tough buildings to site and to do sensitively. So one of the things that has saved this campus, that's made the campus so nice, is that relative scale.

As student population grows, particularly if they want to centralize facilities, the temptation is going to be there to make these great, big spaces. The initial concept of the campus was to spread things out and break it into smaller, more manageable chunks. I hope the campus, administratively, can figure out a way to keep that happening so that that's what happens on the ground as well [and] the physical development of the campus is in keeping with its physical setting.

Did you have more questions on the bookstore?

**Reti:** The other thing isn't so important, but it ties into a bigger issue we've had on campus, which is that that site has, other than a few metered parking spaces and a couple of special permitted spaces, no parking. So I know if you go to buy a computer you could be hauling it by hand to the Hahn parking lot, or asking for a special visitor permit. What was the history of that?

**Zwart:** Well, that whole site—if you looked at it before the new bookstore was built, that was all a parking area. We hear the same kinds of concerns about parking at McHenry Library, at the main library. If you want to go to Doe Library at Berkeley or Moffitt Library at Berkeley, you're not going to drive up and park next to it. I mean, that's the challenge of building a campus. Increasingly, it's a very standard model on campuses, even on much simpler, flatter, more conventional sites than Santa Cruz, to try to move the parking to the perimeter. And then not let everybody park for convenience, but for certain circumstances, to go and pick up your computer or something like that, they work something out, and then deal with that administratively. We had a similar conversation about parking in the Arts area back when some planning was being done there. This was back at the time [early 1990s] when they were working on the Implementation Program for the LRDP. Phil Enquist, who was the architect and planner who was doing a lot of that said, "Well, how many parking spaces are we talking about?" So somebody came up with some numbers about how many they'd like. He actually drew on a piece of tracing paper that area, and laid it over a campus map. That number of parked cars would have covered a third of the Great Meadow!

**Reti:** Oh, my God.

**Zwart:** Or whatever. I may be exaggerating a little bit. But it's a big, big number once you start putting it together. You need to show that to people to understand that for some of these things we've got to handle it administratively or operationally, rather than just building a parking space where everybody can drive and park right next to it. Because pretty soon if you drive and park right next to it, you've got the Capitola Mall. That's not what anybody wants to see on a college campus, particularly not on this college campus.

So [construction of] that project [the bookstore and graduate commons] seemed to go on forever and ever and ever. And in fact, the graduate students and the bookstore had T-shirts made, both of which commented upon how much time it had taken to complete the building. I think the bookstore one had a series of completion dates all crossed out until they got to the final one. We were afraid that project might wind up in litigation, so we engaged outside counsel and we went into some pretty heavy-duty mediation to resolve those problems. I went to one of the mediation sessions and in my briefcase I had those T-shirts. But the outside counsel wouldn't let me wear them.

**Reti:** (laughs)

**Zwart:** (laughs) I said, "Can we introduce these as evidence?" She didn't think that would be a very tactical move. But anyway, all in all I think it came out very successfully. It's a nice place to go at lunchtime, just a pleasant place.

### **More on the Core West Parking Structure**

At about that same time, built actually by the same contractor, the Core West parking structure, the campus's first and only parking structure, was built by Amoroso. I think I talked about that a little bit.

**Reti:** Yes, a little bit. Dropping it into the trees, and how innovative that was.

**Zwart:** Yes, and how the soils conditions there really helped dictate the shape of what Watry designed. I don't know that there's a lot more to say about that, other than to recall that as that was being planned, there was a lot of controversy about it, first on campus and then in dealings with the city and the city council. I happened to be reading the original 1963 Long Range Development Plan and reading what it had to say about parking. Everybody points back to that early document but very few people actually go back to read it. It actually talked about the need for structured parking back in 1963. One of the things that it said was something along the lines of that surface parking, parking at grade, would be sufficient until the campus got to about 10,000 students population. Then there would be a need to start building structures. And the population about the time that building was done was right about 11,000 students.

**Reti:** Wow! That's remarkable.

**Zwart:** It's remarkable how prescient they were. It was really very, very interesting.

### Interdisciplinary Sciences Building

Oh, I'm again looking at the list of contemporary projects and I'm finding another one that was built by Amoroso, again successfully. And that's the Interdisciplinary Sciences Building. That's a project that was really interesting. I think I talked last time about the need to vacate the Natural Sciences 2 building in order to do the seismic upgrade to repair the damage that was done in the Loma Prieta Earthquake, and then to strengthen the building to contemporary codes. And then once the physicists and astronomers got into Kerr Hall they didn't want to move out. And the campus was looking to turn Kerr Hall into an administration building. The chancellor's office for many years had been in McHenry Library. The library was going to need that space. Kerr Hall was seen as a possible place to centralize that, but they couldn't do anything until physics and astronomy got out. I remember the capital planning group putting together alternative after alternative after alternative about who moves where to make all of this possible. I think they lettered them, and I'm not sure that the alternatives got all the way down to Z, but it got quite a ways down the alphabet before they finally came up with something.

**Reti:** (laughs)

**Zwart:** And so the idea was to do an addition—well, let me back up a little bit. The environmental studies program had always been the center of College Eight; that was always conceived of as the heart of College Eight. Over time, as that program evolved—it moved—it has always been a mixture of hard science and policy studies. There's always been a blending. That's the nature of it. But, as I



understand it, with the evolution of the program, there's been increasing emphasis on laboratory science, but the College Eight complex, which was the home to environmental studies, wasn't built with laboratory space in it. So there was a need for laboratory and research space for environmental studies faculty members. And laboratory spaces, again, rely on a lot of plumbing, a lot of cooling—utility services that are provided in the Science Hill area of the campus. Earlier in the state-funded capital program there was going to be a building for environmental studies. That was going to provide laboratory space for the environmental studies department. As I understand it (I wasn't party to these conversations, but it was relayed to me by reliable and well-informed sources), conversations between the campus Capital Planning office and the Office of the President about getting this into the state-funded capital program focused around an environmental studies building. And if I remember correctly, Dick Atkinson was the president of the University of California at that time. I don't know whether these words came out of Atkinson's mouth, or out of a vice president's mouth, or out of a capital planner's mouth—but somebody said something along the lines of, "Well, okay. I can understand what you need it for and we are willing to support the project. But it's got to have a different name, because 'studies' is too smooshy and we just funded an environmental sciences building at—I don't know—Santa Barbara or San Diego—so we don't know if we can get another one through the state." So the building wound up then changing its name from environmental studies to Interdisciplinary Sciences. (laughs)

I think the idea of the building probably grew out of all the various alternatives about what to do about the physicists and how to get the physicists back into

their building and so on. One of the things that I talked about a little bit when we talked about the seismic vulnerability of Natural Sciences 2 was the need for those big open spaces. It's a very, very flexible laboratory building. It could handle all kinds of wet lab stuff. And one of the things that made it so (and I don't think I mentioned this as I described the building), is that if you go right into the middle of the building there is a chase that's probably six or eight feet wide that runs the length of the building and goes from the ground floor up to the top floor, with lots of room for ducts and pipes to go in it.

**Reti:** That was in the original building?

**Zwart:** That's in the original building. In fact, that's one of the things that made the building so vulnerable [to the earthquake]. None of the floor plans in the building, none of the floor slabs go from outside wall to outside wall. They go from outside wall to chase wall. Then there's this big chase. And then from chase wall to the other outside wall. That made them very long and narrow and that created problems with transferring loads and so on. I remember taking tours of the building and going into the chase with some of our engineers as we were working on planning for the seismic upgrade of Natural Sciences 2. The engineers and the facilities people said, "I could put anything you want in there," because of all of the flexibility with the floor plates and that duct space.

In all of these conversations about environmental studies and an interdisciplinary sciences program, or getting laboratory space for the environmental studies faculty—as it happened, the evolution of the physics and astronomy programs, unlike chemistry or biology, they don't have as great a

need for fume hoods and ducted laboratory spaces as more wet sciences do. There are some. There are some physics labs that need those kinds of services. But as a percentage of the whole, it's much lower than it is in biology or in chemistry.

So the idea grew in all of these conversations (I think Michael Tanner was vice chancellor back in those days), the idea was, well, if we need laboratory space for environmental studies, and since we have or we will soon have Natural Sciences 2 emptied out for this seismic retrofit, can we then put the laboratory space for environmental studies into the Natural Sciences 2 building, and build another building that will house physics and astronomy? And if there are physics and astronomy units that need laboratory space they can go into Natural Sciences 2, but the physics and astronomy programs that don't need it can go into this new building where we don't provide all of the fume hoods and ducts and so on.

So that was the origin of it. The program actually was a very challenging one because it had three departments—astronomy and astrophysics, physics, and environmental studies—which spanned two academic divisions, the Division of Natural Sciences (now the Division of Physical & Biological Sciences), and the Division of Social Sciences. And then there were two special research arms related to the Division of Natural Sciences—SCIPP (the Santa Cruz Institute for Particle Physics), and Lick Observatory. So this became a pretty complicated proposition.

We went through an architect selection process. We had some very good firms and we wound up selecting Moore Ruble Yudell from Santa Monica. They had

been selected to do what started its life as Natural Sciences 5 and then became Chemistry and then became Physical Sciences. But that project had been put on the back shelf. They had done some programming work and done it very, very well. We'd been very impressed with what we'd seen, but they'd never actually designed a building on campus. So they were selected to do the Interdisciplinary Sciences building.

Moore Ruble Yudell is an interesting firm from Santa Monica. Charles Moore had a peripatetic architectural career teaching architecture at (and these probably aren't in order), Yale, Berkeley, the University of Texas, and UCLA—and leaving an architectural firm behind just about everywhere he went. The firm he left behind in the Bay Area was MLTW—Moore, Lyndon, Turnbull, Whitaker. They actually were the architects for Kresge College many years ago.

**Reti:** That's why that name is familiar.

**Zwart:** That's right. And Moore Ruble Yudell —Buzz Yudell and John Ruble came out of UCLA and probably were students of Moore's there, and then they set up a practice in Santa Monica. They do a lot of very good work. I really liked working with them. John Ruble was the principal in charge.

There were two potential sites for the building. One is the one where it wound up, and the other, which is the one I thought would be selected, simply because it seemed easier to me [from the beginning]. The new building would have formed a T coming to the south off of the building. But once Moore Ruble Yudell got started on the project they strongly recommended trying to fit the building in where we put it. Our office had concerns about how constructible it was going to

be. It was a very, very tight site. But the argument John Ruble used, and it appeared right when he said it and in retrospect he really was right, is that if you did it as a T coming off to the south it would always feel like a separate building. You couldn't really integrate it. Where if you essentially extended the building to the east, which is what the plan did, you would have better communication floor-to-floor between the new and the old buildings. They managed to come up with a scheme that fit it. I think I mentioned last time, when we were talking about Earth & Marine Sciences, that we'd had some problems with over-heating.

**Reti:** Yes.

**Zwart:** We didn't want to go through that again, particularly given how close it was to the Earth & Marine Sciences Building. So we tried something a little bit different. When we place our advertisements about the architect selection process, typically we ask architects to propose a team that they will come in and coordinate. On this one we said, "Propose a team but we're going to reserve judgment on the mechanical engineer, because the mechanical engineer is key to these issues of building comfort. And if you want to propose a firm or several firms feel free to do so, but if you don't want to propose anybody, that's okay. Once we have picked the architect, then we will work with the selected architect to jointly agree on the mechanical engineer." So that's what we did and it worked out pretty well.

So once we had picked Moore Ruble Yudell, we advertised for firms that were interested in providing mechanical engineering services, and we picked three in the Bay Area. John Ruble came up and we visited the three offices. Interestingly

enough, one of the three firms was a firm called Flack and Kurtz. They were a relatively recent arrival in the Bay Area. I think they were somewhere in the East Bay or over by Walnut Creek. They were the outpost of a New York firm, Flack and Kurtz. Norm Kurtz had taught my class mechanical engineering when I was in graduate school at Princeton in 1975. As we made our way around, I mentioned having had Norm Kurtz for a teacher. A week later I got a letter from Norm Kurtz saying, "Oh, I hear you're looking for a mechanical engineer. I thought I'd better check and make sure I was nice to you." At Princeton, like Santa Cruz, it was pass-fail in the graduate program in architecture, with written evaluations. He had a copy of my evaluation and he mailed it to me. (laughs) He said, "Looks like I was pretty nice to you so think kindly of me."

**Reti:** (laughs)

**Zwart:** We didn't pick them. We picked another firm, not based on that. But that was a funny, small-world story.

So they went ahead, and Moore Ruble Yudell did a very good design. Like SRG, they were very good in working in public settings and working with groups and really solving problems. John Ruble is a very perceptive and astute guy. I've been very impressed when I've had the opportunity to work with him and to watch him work. They got all of these disparate departments working together in supporting the building. That was extremely important because of some real challenges that the project faced. One was procedural. We had picked Moore Ruble Yudell to do the project and it was a small enough project that they were going to provide all of the services. They were going to do the design work, do

the working drawings; they were going to be what the university calls “executive architect.” The procedure in place at the time was that the Office of the President needed to approve appointments of executive architects. So at that point the chancellor would write to one of the vice presidents, asking permission and providing background, and then they [the campus] would get authority to execute a contract with the design professional.

So I got a phone call from a principal architect in the Office of the President. Typically the process is you send a draft up to OP and you work through it with them with them before the letter goes out formally. I’d been going through this process with them. I got a call saying, “You know that letter we’ve been talking about asking for the appointment of Moore Ruble Yudell as architect? Have you got that? Have you sent it up yet?” I said, “Actually, it’s right here on my desk. It’s ready to go out.” He said, “Don’t send it.” Moore Ruble Yudell had been involved in designing Haas School of Business at Berkeley. And there were some problems with it and the Regents were in litigation. The Office of the President decided that if they were in litigation with an architect, the Regents wouldn’t be hiring them. Two projects were affected: a housing project at UC Santa Barbara and our project.

We were pretty well down the design path. These are the joys of an administrative architect. I really didn’t look forward to going through another architect selection process, because we had no idea how long it was going to take to resolve the litigation. Ultimately it was resolved. I’m not sure exactly how. I was trying to figure out what to do. We thought about placing an ad and going through this again. I just thought, “Oh, man. I don’t really want to do that.” Well,

when we had picked Moore Ruble Yudell for the Interdisciplinary Sciences Building (and I think I've described the process before) we had designated as an alternate firm Esherick, Homsey, Dodge and Davis in San Francisco. They were working on—it was either on Colleges Nine and Ten or the Bookstore—with us. So I was in their office in San Francisco for a meeting. And I let Chuck Davis know that I wanted him to talk to him confidentially afterwards.

So when the meeting was over everybody left and he closed the door to the conference room. I said, "This is awkward. You know we're working with Moore Ruble Yudell on the Interdisciplinary Sciences Building." He said, "Oh, I think I know where this is going." Well, it turned out he had sat next to Buzz Yudell at some architect function and heard a little bit about the story. I said, "I know you guys don't normally work as architects of record when somebody else has designed the building." There are firms that do a lot of that; they associate with other firms. They may bring a big design firm. The design firm does the design and they do the working drawings. And EHDD, to my knowledge, hadn't ever done that, or did it very rarely. I said, "We're wrestling with this problem, and I know you don't work that way. But as we thought about it, we thought at least I ought to give you the right of first refusal. You were selected. If I put an ad to do something, you might be calling me and saying, 'Why can't we have a chance at it?' We like the design. We don't want to jettison the design or Moore Ruble Yudell as the design architect. If you say no, that's fine. We'll do the selection process and we'll pick somebody else. But we want to give you the first chance." Chuck said, "You're right. We don't normally do that. But I've got such respect for those guys. They're such a good firm. We're willing to do it."



So it worked out. That was the first challenge. We got past that hurdle. The other hurdle was that that this project was being designed in a time of very rapidly rising construction costs. The economy was busy. Things were crazy. Not as crazy as they got later!

**Reti:** This was in the early 2000s.

**Zwart:** Late nineties, early 2000s. And so as cost estimates would come in, they'd cut a bunch of stuff out. And the next cost estimate would be higher than the last one, even though a bunch of stuff was cut. Chuck was very, very good in those settings. He came in and worked with the building committee. We made a lot of compromises. The building as it stands there today has what we call mill finish aluminum windows. The original idea was to have those painted, to have some sense of color in it. That's one of many things that we had to give up. But all in all, they worked very hard to make a building that had some interactive spaces. That's one of the things MRY did. And Amoroso built it. We had a few problems with it but ultimately it got solved well and satisfactorily. I've never heard any complaints about temperature control there. We hired ARUP, the San Francisco firm, to do the mechanical engineering. They did sun shades and so on. I think the building works very well that way.

### **Center for Adaptive Optics**

Then, as that project was moving forward, the campus was submitting to be part of, I think it's an NSF grant. This was a joint program for what became the Center for Adaptive Optics. So they needed a little headquarters building, and if the campus received [the grant], which it did, there would be a way to structure

financing to build a little center for it. The timing for this one was really, really tough, because if this had come along a year or two earlier, programmatically we probably would have tried to fit it into the Interdisciplinary Sciences Building. On the other hand, it [the ISB design] was so far along that it would have just been too disruptive to go back in and add the [adaptive optics] program. And I'm not sure that would have fit. If we'd started out that way we might have been able to do another floor on top, or something like that.

So it wound up being a little freestanding building. Again, EHDD was selected as the architect. I think they did a very nice job. It gets a lot of use. Again, the focus is on interaction, put it in a space that knits it between Earth & Marine Sciences, and Natural Sciences 2 and the Interdisciplinary Sciences Building.

But it's a project I like to tell an anecdote about. We worked with some very prominent astronomers, a couple of faculty members—Jerry Nelson, who I think heads the program, and Sandy Faber. She is as prominent as any faculty members that we have. So after it was done and had been running for a couple of months, I happened across Sandy. She must have stopped to get a parking permit at the foot of campus, or something like that. She was in our parking lot. I said hi and asked, "How's the building?" And she said, well—and it was clear that she thought she had designed the building.

**Reti:** (laughs)

**Zwart:** I called Chuck Davis and I said, "Chuck, you're going to love this story. You were very successful. You did such a good job on the building that the

principal client thinks she designed it.” (laughs) That’s success in an academic environment. I think they did a very nice job on that one.

**Reti:** (laughs)

### **Cowell, Stevenson, and Porter College Student Apartments**

**Zwart:** That opened in about 2002. And then we get into the Cowell, Stevenson, and Porter College student apartments. I think I’ve talked in earlier conversations that the first five colleges were built with all dormitory or residence hall accommodations—

**Reti:** Yes.

**Zwart:** The sixth and seventh colleges, Kresge and Oakes, were built with only apartment style [student housing]. And then over time we added student apartments at Crown and Merrill in a single project. We added some student apartments at Kresge College. We added some residence hall beds for Oakes College.

And so Housing looked around and saw that they needed apartments. The three colleges that didn’t have them were Cowell, Stevenson, and Porter. So we tackled that as one project. It wound up being a very ambitious project. The firm, BAR Architects from San Francisco, started its life as Backen, Arrigoni, and Ross. It’s a firm that did a lot of housing work. That’s really where they got started. They’ve also done a lot of work for George Lucas at Lucas Ranch. They did a lot of high-tech work there. John Lee was the partner in charge. We had actually done some master planning work for potential apartment sites at those three colleges with

the San Francisco architecture and planning firm Sasaki Associates. But once we got into the design, BAR was selected to do the design work, and those sites changed a little bit. But it was really tough because we didn't think it was [originally] realistic to say you needed to match the architectural vocabulary of those three colleges, because we were building something quite different than what was done. But we wanted them to be compatible and I think BAR did a good job of that. They came up with different housing types for each of the units. As it turned out, John Barnes had at about that time, just as we were getting started on this, joined the staff as a half-time planner and half-time project manager; he was the initial project manager from our office on that. And as he was shepherding the project through the environmental review process he commented—just to talk about the complexity of the project—because they were in three, really four, very distinct sites, [that] the campus has four watersheds in its land. And this touched all four of them.

**Reti:** What are the four?

**Zwart:** That I couldn't tell you exactly. But the sites are southeast of Stevenson College that you can see as you come up the main entrance up Coolidge Drive, the flat-topped buildings just before you get to Stevenson. And then there are a cluster of buildings between the lower quad of Cowell College and the Bookstore complex, on the west side of Cowell between Hagar and Cowell. And then all of those apartments between Kresge and Porter Colleges on the west side of campus. I think the Cowell site drains down into Jordan Gulch. The Stevenson site drains to the east, off into the Pogonip and down to the San Lorenzo River. And then the west campus drains off to Cave Gulch, I suspect.

So it was really complicated. Again, done at a time with a lot of construction inflation, but I think done successfully and done satisfactorily. You know, there are a few projects around campus that I look at and think, “Oh, I wish we’d done something a little differently on that.” The Stevenson apartments cluster is one. Because we knew they were going to be visible on that hillside below Stevenson, we tried to keep the building heights as low as possible. So we chose not to go with a sloped roof, which Cowell and Stevenson both had. And I wish we had been a little bit less worried about keeping the buildings down and thought a little bit more about the form of the buildings. The truncated tops of the buildings makes them look a little too stark to lots of people, including me. But I think all-in-all they fit in very well. They create a very nice space between the two of them. The apartments are terrific. And I think when the trees around the building, many of which are oaks, which are relatively slow-growing—as they fill out it’s going to fit into the landscape a lot better. But there are always one or two projects where you wish you had done something just a little bit different.

### **Physical Sciences Building**

We’re now turning our attention from infill apartments scattered all over campus, to two buildings that could see each other if they had eyes—the Physical Sciences Building and the Engineering Building 2. I’ve talked a little bit, I think, about Physical Sciences. It started its life in the early nineties and then got put on hold for a long time, and then came to life again. Back in the early nineties we’d picked Moore Ruble Yudell to be the executive architect on that project. They’d done some early and very promising programming work, but it got set aside for a long time.

We would often have students, or we'd almost always have students on architect selection committees. In that particular circumstance, we interviewed five firms. I think I talked earlier today about how that was our introduction to Jon Schleuning and SRG. We interviewed these firms, and on this particular building committee we had two chemistry students, as it happened, both women, one an undergraduate and one a graduate student. I would often find myself talking to student groups about student influence and student power and so on. They would say, "Oh, we only have one or two [committee members] and the administration does what it wants," and so on. So I'd tell this story to talk about how influential the students can be at Santa Cruz.

After we'd gone through the interview process and we'd called around and checked references, we really focused on two firms to design what became the Physical Sciences Building: Moore Ruble Yudell, and Anshen and Allen, Los Angeles. So I went around the table and asked each of the members to state a favorite. One of the committee members was Lan Dyson, then the University Librarian. He was just wrapping up work on the Science Library, so he'd been through the process and had been active in that. In good librarian fashion he was keeping score as we went around. So as we went around, we got back to me and I spoke my favorite. At this point I don't remember which one, because actually I would have been happy with either. It was a complete deadlock, absolutely just fifty-fifty right down the middle. So I said to the users, "You are the people who are going to have to work in this building and live in this building, so we're going to have to look to you. Because both of these firms can do a good job. I think we'll be happy with them."

The first two people to speak were the two students. They both spoke in favor of the kinds of the buildings that they had seen in Moore Ruble Yudell's portfolio, and so we went with Moore Ruble Yudell. I would often tell that story to say—you know, the numbers on the committees that I work on—it's not like the Senate or the House of Representatives—

**Reti:** (laughs)

**Zwart:** It's not just a vote. It's really a matter of conversation. These were very good students, very thoughtful students, and very, as it turned out, influential students.

Moore Ruble Yudell did a very good job on the Physical Sciences Building. I'll talk about that for a little while and then get to the Engineering Building in a minute. So they started doing what architects do. It's not uncommon to cut out pieces of paper that represent the size of various functions and move them around on a plan to see how they fit on the site, and so on. They were doing that, and they came to some early reviews with the Design Advisory Board. It was pretty clear that it was going to be a very challenging project. It was a big project on a small site. One of the ways that it had made its way into the capital program—because it was slated to be probably the most technically sophisticated laboratory building we had done—more fume hoods, just a higher fume hood density. That's the nature of chemistry buildings. And therefore a very expensive building. And so to get the anticipated price down, Dick Jensen, who was then the head of the budget office, had the bright idea of saying, "Well, what if we put in a bunch of space that doesn't have those kinds of technical needs." What he

had in mind was engineering. You can meet very important engineering functions without having to have fume hoods or pipes and ducts and all that kind of stuff. So if we make, as it turned out, a wing of the building engineering space and then everything else chemistry, that will dilute the cost per square foot of the building. But it made the building bigger.

So that became the program. There was going to be a block of space that didn't have laboratory services in it, a block of offices, which you always have in a research lab, and then bunch of labs plus some teaching space. MRY was moving things around, and it was clear it was going to be a pretty tight scheme. It was maybe their second or third meeting with the Design Advisory Board—all of a sudden it was clear that the design was starting to click. They came up with a plan that essentially became the basis of the building.

It was a T-shaped building, with the upper bar of the T running mostly north and south, and the other piece of the building running east and west. The northern half of the upper bar of the T was all laboratory space. The east-west bar—on one side of it had laboratories and on the other side had faculty offices separated by an atrium. (“Atrium” turned out to be a dirty word. I'm going to come back to that in a minute.) The southern part of the T was going to be the engineering wing, which was heavily wired research space, but no significant lab functions. And then down on the ground floor of that wing would be the classrooms that were part of the program.

It fit into the site very well. I rarely saw the Design Advisory Board fall all over itself in praise for a scheme, but this design did it because it had everything in



exactly the right place. This atrium space had a link from what was going to be the Core West Parking Structure to the west, over into Science Hill, so that you could move through there. It was a social function.

And the atrium was designed in such a way—it did lots and lots of things. One of the things that Moore Ruble Yudell had discovered, as they tried to understand the building, is that within the chemistry department were a series of sub-chemistry disciplines. For example, I remember at one of the early programming phases they gave faculty members things to draw up their plan of what things looked like. The theoretical chemists essentially drew an office with a desk, a blackboard, and a chair and said, “That’s what I need. I don’t need fume hoods and all of that.” The physical chemists had a different set of needs; the organic chemists had a different set of needs. What architects ideally want to have happen is that things match up into roughly congruent floor plates so you can stack them up efficiently. Well, as they looked at the sub-disciplines of chemistry, that just wasn’t happening. So one of the things that they did by creating this atrium space, is that by putting the faculty offices on one side of the atrium and the laboratories on the other, and then having stairways that actually go through the atrium, it would be conceivable to assign a faculty member a laboratory on one floor and an office on another floor, with a minimal loss of convenience, without having to go climb through a dingy stairway. You could just walk through the atrium. Second, the atrium is used really quite commonly in laboratory buildings now. It’s used in hotels; it’s used in shopping areas. It’s a great place for interaction, lots of stuff that goes on there.

**Reti:** Coffee.

**Zwart:** Coffee. All of that stuff. We saw it in a very small version in the Sinsheimer Laboratory Building in Natural Sciences 2. You really get a sense of what's happening in the building by having people moving through that space. And the way they'd configured it in this particular plan, it was clear that that was going to happen.

Third, we wanted to minimize air-conditioning in the building. And in passive solar design, passive heating and cooling design, having a big chimney that allows cool air to come in low and exit high creates ventilation.

And the last one I'll mention, is that under the building codes that were in place, if the atrium had a dimension that would allow a 25-foot diameter sphere to move through it (in other words, if it was 25-feet wide), if you were to put certain other kinds of fire-preventive and protection mechanisms in, like certain kinds of smoke detectors, meeting ventilation requirements and so on, the wall that separated the faculty offices from the atrium didn't have to be fire-rated. A fire-rated wall is a certain kind of construction that under certain circumstances it takes a certain amount of time, usually an hour or two hours or four hours, for fire to penetrate the wall. If you have a fire-resistive wall, any doors in that wall have to meet a certain fire-resistive construction and they have to be on closers. If you're trying to foster interaction between faculty members in their offices and other faculty members or students outside, having a wall full of closed doors really is entirely contrary to that. Well, by not having to have that wall fire-rated, the doors could stay open, and it adds significantly to the interactivity of the building. So it accomplished all of those things.

The Design Advisory Board and the staff were pleased with the design. The users were very happy with it. We came to an early value engineering session and someone from the Office of the President— I didn't realize that—you know, George Carlin had that skit about seven words you can't say on the radio?

**Reti:** (laughs)

**Zwart:** Well, I didn't know that "atrium" was a word that you couldn't say in Sacramento about funding a building. Because we had somebody there from the Office of the President who said, "That atrium looks too fancy. It has to go."

**Reti:** It was too much like a hotel?

**Zwart:** "It's too elaborate. It's unnecessary space." We made all of those arguments. We put up quite a fight. This got up to the chancellor, even. And she stood right behind us. MRC Greenwood was the chancellor at the time. We briefed her on it. We worked with the architect to shrink the atrium. We took some seminar rooms and interactive space and filled up the atrium a little bit, and that made the building more compact. I think that it improved the building and the usability of the building. We managed to defend it. It got through [Regental] design review with very complimentary comments. Again, it was one of those buildings that was designed when prices were running up, so we had to do all kinds of cost-cutting.

This was a project that I think years ago we probably should have brought in an exorcist—

**Reti:** (laughs)

**Zwart:** Because then it bid, and the low bidder was a firm from Visalia who hadn't built anything this complicated. They were stumbling along and stumbling along. And with construction, I don't know, seventy-five to eighty-five percent completed, they walked off the job.

**Reti:** Oh, my God.

**Zwart:** We had to keep the project moving. They brought in the bonding company and I was meeting with attorneys, and all kinds of stuff. But ultimately we got it done. The bonding company hired a very good contractor to come up and finish the job. And I think that the project is a very successful one. I've talked to the chemists there. They like it very well. In fact, shortly after the building was opened, I ran into one of them [while] exercising in the Fitness Center. I asked him how things were going in the building. He said, "Oh, it's great! We have the Joe Bunnett lecture every year." (Joe Bunnett was one of the founding chemistry faculty members, and in his honor they bring in a lecturer and they do a big dinner.) "We had the Bunnett lecture and dinner. We had the dinner in the atrium. We brought in a mariachi band and they filled the place with sound." I said, "Well, don't let those people in the Office of the President find out about that!" (laughs) But that's exactly the kind of space that you want. You want that kind of liveliness. Actually, I was very pleased to hear about the mariachi band in the atrium at the Physical Sciences Building. In fact, Tom Vani, my boss for the last ten years of my career, always threatened that that's where they would hold my retirement party—

**Reti:** (laughs)

**Zwart:** —in the Physical Sciences atrium because we shed so much blood making that happen. (laughs) So that was a success story.

### Engineering Building

Across the street, the Engineering Building, which started its life well after the Physical Sciences Building, actually wound up being completed before—which was embarrassing to lots of people. And that, again, for very different reasons, was quite a success story. The campus had initially had an engineering program, and that's what led to the construction of what's now the Baskin Engineering Building. If you go back and look at the original plans for that building in our archives, it's labeled Engineering Unit 1. They hired an aeronautical engineer from Cal Tech, a man named Francis Clauser<sup>45</sup> to be the founding dean of engineering. It was going to be a very conventional engineering program: with structural, chemical, electrical, aeronautical. That's what the building was designed for. But as it was in the planning and design phase, somewhere along the line there was a glut of engineers nationwide. I remember seeing articles in *Time* magazine or whatever that Boeing was laying off engineers by the score up in Seattle. So the Regents killed the engineering program.

And for many years Engineering Unit 1 became the Applied Sciences Building. It held the seismology lab for a while; there were art classes in there; math was in there, lots of different departments. But over time, the disciplines within what was the Division of Natural Sciences with an engineering slant (and I'm thinking

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<sup>45</sup> Francis Clauser was vice-chancellor of natural sciences under UC Santa Cruz founding chancellor Dean McHenry and was at UC Santa Cruz until 1969.

mostly of things like Information and Computer Science) grew to occupy the building. Then when it came time to start an engineering program, rather than do a comprehensive rainbow scheme with everything, what the campus chose to do—I always use the analogy of the sand in the oyster to create a pearl—they built around something that was already here and focused an engineering program on information and computer sciences and the fact of our proximity to the Silicon Valley.

It was clear that that program was growing pretty gangbusters and was going to outgrow the Baskin Engineering Building. So an engineering building found its way into the state-funded capital program. And all of a sudden I guess it got moved up a couple of years so we needed to get a program written. So we went to [the Los Angeles office of] Anshen and Allen. Anshen and Allen had been the firm that, ten years before, didn't get the Physical Sciences Building. They had just completed work on engineering buildings at Santa Barbara and San Diego, and they had a lot of [related] experience. So we selected them. The work to do the program wasn't large enough that we needed to do a complete advertisement and search. It was clear that their work was limited to the programming, and we followed that up with an architect selection process. So as the programming was going on, we then conducted interviews and visited the offices of three firms (I think we interviewed five firms and visited three offices), and that was Studios, an architectural firm in San Francisco; LMN Architects, who had done a lot of work at the University of Washington in Seattle; and Anshen and Allen. And Anshen and Allen was selected as the architect.

Now, right about then (this was probably around 2000, 2001, I don't remember exactly), there were economic problems in California. Things were softening. So Gray Davis, who was then the governor, was proposing what became known as the California Institute for Science and Innovation. These were to be joint public-private ventures centered at the University of California that would bring in private enterprise and private money to build facilities and take advantage of the University's research capabilities and so on. And although Santa Cruz wasn't in the lead on any of those, we were collaborating with our sister campuses on three such programs and were going to need some space for them. And boy, I remember talk that, "Well, maybe we could bring in a bunch of trailers." Talking about modularity, that's fingernails on the blackboard of a campus architect's heart. I mean, it just—Well, somewhere along the line—I wish I could take credit for it—somebody in Capital Planning realized that the amount of space that would be needed by these grants if we got them would be about equal to a floor in the engineering building. And so as the architects were getting ready to start work on this, I think word came through that we were successful on two of the three grants. I think it must have been July of 2001, because we wound up completing the project in less than four years. They were working on revising the building program to accommodate these two new programs, this additional space.

**Reti:** Chancellor MRC Greenwood was still here.

**Zwart:** That's right. But because this was going to be funded by the state, the architects and the users were moving promptly but we didn't have any big deadlines because the initial thought was that to complete schematic design and

design development, or the phase known as preliminary design in state budgetspeak, that normally takes for a project of this scale somewhere between six and nine months. We were going to have a year before working drawing money was ready. So the fact that the architects weren't starting design on July 1 was not the end of the world.

They got the program and they were just starting on design when I came to work one morning and I saw some email (I think it was a Monday morning) that said something about the building being under construction the following June. It didn't say next June. It said June of a certain year. I'd been involved in some discussions at the end of the prior week that talked about the schedule. So I thought that there was some confusion. So I called someone. I think I called Tom Vani. I said, "What's happening here? Is there some confusion? Because we've never talked about [starting construction that early]—" And he said, "Well, the governor's proposing an economic stimulus package to be funded by revenue bonds rather than general obligation bonds. And the state and the Office of the President are looking for projects that could be under construction by next July 1."

**Reti:** Oh, my God!

**Zwart:** That was sort of it. "And can we do it?" I have learned in my term as campus architect never to say you can't do it. What I've learned to say is, "If that's going to happen, here's everything that has to happen to lead up to it." And often people draw their own conclusions. So I went into my—okay, if that's to happen we're going to have to do this and this and this, and this is what it's



going to take. I probably wrote a long email to that effect. Tom carried that to MRC, saying, "I'm not sure that we can make it—" Well, MRC went into full cheerleader mode and made it clear that we were going to try. And if we didn't try she wasn't going to have anybody's head, but she was going to expect us all to try.

In fact we tried, and in fact we did it. It was just remarkable. MRC's concern, and the campus's concern (and it was entirely legitimate) was with the economy softening, the concern was, if we couldn't make it—I think the construction money for the project was going to rely on a bond measure on the ballot in the following November. And if that bond didn't pass, then the project could be delayed two years. So the alternative was: kill yourself and try to make it, or risk losing the project for two years, which wasn't going to be helpful to a growing engineering program. With those kinds of stakes, it changes the way you think about things.

I have to say it was a real lesson in bureaucratic or institutional behavior. Knowing that that was the trade-off, everybody behaved a little bit differently and got it all done. So, for example, we took a few chances—we met the requirements of CEQA but we followed an abbreviated environmental impact report, process. It was called a focused environmental impact report where they took a focused look and said, okay, here are the possible impacts. Those are the ones we're going to focus on. The campus practice had been to take a very thorough approach to all of our EIRs because of the [local political] environment. We want them to be absolutely as close to bullet-proof as we can make them. Here we thought, this is not the kind of project that's often drawn opposition

from people in the community. We can try something a little bit different.

And they did.

As we went through the design process, in working with the Office of the President two things happened up there that were important. One was happening anyway, in that they [the facilities office at UCOP] had just issued or were just about to issue construction documents that would allow construction manager at risk (which we talked about a few sessions ago) that would allow us to pick a contractor even as we moved forward with design. That was going to be key. I'll get back to that in a minute.

The other thing that they did is, typically once we have a program and budget in place we are expected to meet the budget and to come up with a building plan that's within two percent of the programmed area. We can't cut stuff off; we can't build more, and so on. We had to bring it down. The architects were showing good stuff on budget, but the building was a little bit bigger than that two percent overage that was allowed. So I went to the Office of the President (I was up there for something), and I went to the capital planners and I said, "Here's the situation. Now, under normal circumstances we would go back to the architect and say, "Okay. Take another iteration in the drawings." And in two or three weeks of design they could probably squeeze that [additional area] out. I said, "But the other thing was in order to meet this schedule we're not going to do a Swiss watch on this. We're not going to fit everything together [precisely]—" And in fact in one of the meetings that we'd had to talk about how we were going to meet this challenge—I think it was Henry Hooker, who was one of our principal architects on staff, who said, "You know, we need to take a clue from

all those old loft buildings in San Francisco or Boston and New York that get converted for stuff. The reason that they're able to convert to stuff easily is that there's a little bit more room than they need. By having it a little bit bigger, you have a little bit more elbow room and you can do more."

So I used those two sales pitches to the Office of the President. Under normal circumstances they might have said, "No, go back and do another iteration." And we would have. But they saw what the stakes were, and so they did a things a little bit differently. I mean, as soon as we heard that this was a possibility I was first on the phone and then on a plane down to Anshen and Allen's office in Los Angeles to say, "What can we do here? How can we make this work?" And what we heard back from Peter Stazicker, who was the managing principal at Anshen and Allen was "We need to get the contractor involved." He had a contractor that they'd worked with successfully from Southern California come to this meeting to talk about what we would need to do.

There's a funny story about that that I've often told. This was a firm whose name I knew because I'd seen it on construction signs around Southern California. I can't remember it right now. But they had a state contractor's license [number] of something like 12. Which mean that (since those are given chronologically) they'd been around for a long, long time. Peter Stazicker told the story of calling one of the officers or managers in this company who he had a good working relationship with. He said, "We're working on this project in Santa Cruz and we'd like to talk to you." This guy said, "We've worked in Santa Cruz. We never want to work there again." I said, "Peter, they've never done anything on campus." Peter said, "Oh, no. He wasn't talking about campus. He was just

talking about how hard it is to work in Santa Cruz. It's hard to get materials here. It's hard to get a work-force. Surf is up and everybody's surfing. It's a real challenge." So I tell that story about the challenges of getting things built here.

Anyway, everybody did do it. We went through a construction manager selection process, and picked DPR Construction from the Silicon Valley. They were one of the firms that did a lot of work that suffered when the dot.com bubble burst in the early 2000s. And rather than downsize, they were entering for the first time into public works.

We involved Anshen and Allen in the selection process for the construction manager. When we had the first kick-off meeting, once they [DPR Construction] had submitted their bid and it had been determined that they were the low bidder, I sat through part of that meeting. The architects came with a list of questions of things that needed to be done [right away]. The contractor did the same. There was about a seventy-five or eighty percent overlap between those questions. I thought that was a pretty good sign, that they're both thinking, "Okay, here are the things we have to work on." It really was a collaborative effort. I think I might have told this story earlier, that even DPR had some significant contributions to the design of the building. The building is long and east and west. And the original design that the Regents approved had horizontal sun shades on the south face of the building.

**Reti:** Oh, yes. We did talk about this.

**Zwart:** And it was DPR that said, "Look, we can do all of that with high-tech glass. We can have it fabricated offsite, bring it there." They did it and it was

terrific. There were a few hiccups along the way. There were one or two bid packages that had to re-bid because the bids came in a little high. But with some restructuring it actually wound up being done on budget and well ahead of schedule. I think we went from beginning of design to notice of final completion in 38 or 39 months. On a 40 or 45 million dollar building that's a major accomplishment. The building has won some significant design awards from the AIA[the American Institute of Architects].

One thing that the engineers wanted very much was to create a forward-looking image for the school, and I think the building itself does that. The other thing that we really wanted was some kind of public space. And the courtyard between the new building and the old Baskin Building I think serves them very, very well. Although there were some nice trees there, and for the very first time one of the architects actually came up to watch the trees be taken down. That's always a wrenching sight.

### **Humanities and Social Sciences Building**

The next project (working towards the present), was the Humanities and Social Sciences Building. I remember there was some talk back in the late nineties or early 2000s about a Humanities Building and siting it somewhere over near Cowell and Stevenson Colleges. And my first reaction to that was, well, no, that's the kind of building that goes in the campus core. The colleges are the colleges and we ought to keep that pattern in mind. But then I went to—oh, I can't remember what the committee was called at that particular moment in time, the Capital Planning Committee or the Space Committee, or something like that—

and I heard one of the humanities faculty members talk about the [early planning] work and the conversations within the division and within the affected departments that led to their request for a building and a building on that side of campus. Essentially the humanities programs in Cowell and Stevenson and Crown and Merrill were outgrowing the offices available there. They wanted faculty space near those offices to supplement the programs [located there]. Clearly they'd given it a lot of thought. I had had the mistaken impression that somebody said, "Well, we need space. Let's just build a building there." But they'd given a lot of thought to what kind of space they needed and where it would go.

But [what] they were proposing at that meeting was a possibility of building a building over a parking structure that would occupy one of the two parking lots in the ravine between McLaughlin Drive and Cowell and Stevenson Colleges. As you come up Coolidge Drive and the road turns to the west, on the left are a couple of sunken parking lots. The notion was to put a building on top of those, which I think would have had some sense.

If I remember right, Jorge Hankamer was the dean at that time. I said, "Jorge, let me try another idea out on you," because we were in the process of going through, or we had just gone through, the bloody battle of the campus's first parking structure, and the parking structure was just a lightning rod for opposition. I said, "I don't think that we really want to put an academic building at risk of that kind of political battle. What if, rather than doing that, we build the Humanities Building on the site of the parking lot at the corner of Hagar Drive and McLaughlin Drive, just northwest of Cowell College (which is where it

wound up). And then as we need a parking structure, keep that independent, and then just do the parking structure, if we need it, over by those sunken lots." Actually, Jorge liked that idea because part of the program in it [the proposed humanities building] was to supplement language studies and to have it convenient to student access from the core. It all worked out very well. So that's how the siting came to pass, and in retrospect I think it was a very good decision because it's close to the core.

Then we got into the budgeting part of it. And that was difficult, because I remember sitting with, arguably the most powerful person in the University, the budget vice president in the Office of the President, Larry Hirshman. He said, "Well, there's something wrong if we can't build a humanities building for less than \$200 a square foot." Our preliminary work with a cost estimator said that this project should have been budgeted at around \$260 a square foot. And we also learned in the course of design that the technical requirements for a humanities building today are not all that different than the requirements were for the engineering building. They didn't have fume hoods; they didn't have pipes. But they did want intensive data wiring. Because there's large data transfer that's going on in the humanities and social sciences disciplines, just as there is in engineering and science. So we managed to push that budget up to \$210 or \$220 a square foot. That was the best we could do. But it was a little bit sobering to have the cost estimators say—"Well, sometimes you get to the point where a cost estimator needs to say to a client, 'Maybe you shouldn't be doing the project.'" It was nerve-wracking all the way.

We went through an architect selection process. Tom Hacker was an architect from Portland. He came out of Lou Kahn's office in Philadelphia. His firm had been doing one of the initial buildings at UC Merced, which is where I heard about him. They did quite a good interview and they wound up being a terrific firm to work with. It turns out that Tom had gone to the University of Pennsylvania, and his thesis advisor there was an architect named Carles Vallhonrat, who, however many years later it was, was my thesis advisor at Princeton. So we shared a background. Tom Hacker worked closely with the Dean of Humanities and the divisional offices. His idea was to organize the building in such a way that the conference rooms and the seminar rooms—by putting them on the ends of buildings they could line and create the public space. That's the humanities equivalent of laboratory space. That's what they do, and gives them a public face. The dean accepted that idea, and that actually drove the design of the building.

There were some soils challenges on the project and they had to reconfigure things, and there were budget challenges all the way. But all in all, I think Tom Hacker's office did a really good job of doing a very simple building. We were faced with cutting all kinds of things out of the building. There's no hung ceiling; we didn't put carpeting in the building. Sara Kane, our project manager on that project had done some really good work for us on Colleges Nine and Ten. She [also] has to get a lot of credit for the Humanities Building coming out as well as it did. She cared about the building, and the clients saw that. Everybody from Hacker's office saw that; the contractor saw that and it was infectious. They did a really nice job, a handsome building, very serviceable. But I remember saying to



Sara, as we were taking some of these awful cuts, I said, "We've got these costs we've got to save. So what are we going to do, remove the windows and leave the suspended ceiling? Or take the suspended ceiling out and have big windows in the faculty offices?" Well, put that way, there wasn't much of a choice. I think we tried to make that guide every single one of the decisions.

And all in all, I think the project came out very successfully. I know when Virginia Jansen and I led a tour of people from the Northern California Society of Architectural Historians, there were some people down with links to Berkeley. Because we had met at Cowell, that was the first stop other than Cowell on our tour. We got into that courtyard. One of them asked about the building. I call that building the building that came out much better than anybody deserved, because the budget was so poor. But it worked out very, very well.

### **Emergency Response Center**

The Emergency Response Center is another one of those projects where the campus had badly outgrown what it had. The campus police, the university police, were in a little, slightly more than a lean-to in one of the barns at the base of campus. It was very folksy but it didn't meet any kind of standards for emergency service. It didn't meet any kind of standards for the kinds of things that police departments need to worry about, dealing with suspects, or evidence or any of that kind of stuff.

So the police department had known for a long time that it [a new facility] was badly needed, but there had been no success in getting a state-funded project for it. I think it found its way into the state-funded capital program back when Jim

Sullivan was vice chancellor. And as it happened, it was a small enough project that we could fit it into the university's [capital planning budget] target, and there it stayed. It had gotten the support of Jim as vice chancellor, and then of his successor, Tom Vani, and of the chancellor. Part of what helped to convince the Office of the President and the state that it was worth funding is that it includes the big conference room in the Emergency Response Center. In the aftermath of the Loma Prieta Earthquake, we all went up to the [campus] fire station. That became our emergency response center. But that was really also the firefighters' living room. That can't stay [an emergency response center] for very long. It was really the growing campus and the remoteness of the Santa Cruz location, I think, that helped convince people of the need for that.

The architect that was selected, Ross Drulis Cusenberry of Sonoma, had done a lot of work in emergency services and police stations. We did a one or two-day workshop to help site a building at the foot of the campus. I know the campus police chief felt that the foot of the campus was an appropriate site. They don't want to be too close to the action. But they want to be able to stage things conveniently. So finding a site within the framework of the barns was important. We did a couple-day workshop to look at site alternatives and how we might develop that and help select the site. I think they wound up with a good site. And then the architects did a lot of analyses of the roof heights and the roof shapes of the surrounding buildings, and that influenced the design of the building. In fact, they developed a nice diagram that I've incorporated into one of my slide presentations about the campus and the historic district. I think it sets

a good model for development there. It's contemporary materials. It's a contemporary building, but fits in nicely. I think they did a good job.

### **McHenry Library Addition and Renovation**

The McHenry Library project, which goes on even as we speak, again had its roots in the early nineties, and then didn't get built. We had picked Boora [Architects] to do the design of the building back then, and then it fell off the campus priority list when the economy softened in the early nineties, and didn't get back on until late in the nineties or early in the 2000s. The initial plan, again back during the first go-round, was to have all the space as new library space. But there seemed to be a feeling, by the time we got to the ends of the nineties and the early 2000s, that libraries were passé and we didn't need as much space for libraries. "We're all going electronic." I don't buy any of that stuff necessarily, but that's sort of—I don't know whether that's really the thinking in the Office of the President, or whether that's what the Office of the President is worried that the thinking in Sacramento is.

Well, let's go back to the planning for the library addition that was done in the early nineties. On the Science Library we worked very successfully with a library consultant from Austin, Texas, named Nancy McAdams. So as we were getting started on programming the Addition to the library, Lan Dyson wanted to work with Nancy again. That was certainly fine with us. So I called Nancy and said, "We're getting started and was she interested?" She told me something that I've always remembered, and I think it applies to a lot more than libraries. She said, "You need to understand that when you're programming an addition to a library

you're not just programming the addition. You're programming the expanded building." As you think about it, it makes a world of sense!

**Reti:** Absolutely.

**Zwart:** As soon as she says it, it's obvious. And that's true about lots of additions as well. I mean, that's how we looked at the programming for the Interdisciplinary Sciences Building as an addition to Natural Sciences 2. So again, when we started re-planning in the early to mid-2000s for the Addition, again, we weren't having a lot of success in convincing the Office of the President that it should all be library space. The expansion was 120,000 square feet. I think the original library, the earlier library was 180,000. So it almost doubled. It increased the size by 75 to 80 percent, something like that. So it wasn't as simple as saying, well, half of the new space will be library space and half of it will be for other academic programs. But the idea was we would do the Addition, and then—some of the seismic analysis we had done of the original building showed some seismic flaws in it—the original building needed some seismic renovation as well. So the plan as it developed was do the Addition, move into the Addition, contract the library operations so that the old building can be completely vacated. And then do the seismic and life safety upgrades in that [area] and then do a complete renovation there as well.

When the whole thing was done, there would be about 120,000 square feet of new space, half of which would be allocated to the library, the other half of which would be allocated to academic programs. And that made the planning for it just very, very difficult. By the time we took the second pass at the

Addition, Nancy McAdams had retired. I talked to her and she said, "I'm just saying no to everybody because if I say yes to one, I have to say yes to everybody." That was a disappointment. So another library consultant named Phil Leighton, who I think had worked at Stanford, worked with the building committee. Again, there was a lot of a back and forth and so on, but I think they came up with a workable plan. In theory, at least, as the campus grows and space is built for what are hoped to be short-term tenants in the library, then that space will be freed up and made available for library functions. So that's going to be a very dynamic change.

I think Boora did a nice job of siting the building, and the building creates a very nice outdoor lawn or courtyard that Boora was quite conscious of when they were putting the building together. I think as the building is completed, it's going to be really quite a nice addition to the campus, and a real center for campus gathering and activity.

It's very, very funny. Before I was campus architect, I worked with the building and programming committee for the Science Library to write the program for what became the Science Library. And boy: "No food, no drink in the library! No food and no drink in the library." My, how that has changed.

**Reti:** Yes.

**Zwart:** I don't know whether we thank Barnes & Noble and Borders for that, or what? But now, there's a gift, I think it's from an alumnus, who is helping create a little coffee cart food service area in the courtyard. And I think that's a great place for it. I think it's just terrific.

**Reti:** Oh, it's actually going to have food. It's not just a coffee cart. It's going to be a real café with soup and light meals.

**Zwart:** That's terrific. It's interesting how that changes. And I know that the librarians have been paying a lot of attention and making sure that what gets built there meets the need of the library of tomorrow. I think it will be a nice facility.

**Reti:** Were there similar kinds of issues to what happened with the Humanities Building in terms of budgetary constrictions?

**Zwart:** Oh, even more so. Again, these things were being bid really at the height of the run-up. I think the two projects that were hit worst by the construction inflation that happened before the big bust in 2008 were the two phases of the library project and the Digital Arts facilities. It was after that that we saw prices drop precipitously. Prices were coming twenty and twenty-five percent over budget. There was one report that I saw that in a year Northern California construction prices jumped twenty five percent. I mean, nobody can budget for that kind of stuff. You can't put contingencies in for that. The architects—Boora—I think were very responsive and put together some graphics that showed what was happening. The additional costs to the project were not at all from any design extravagance or programmatic extravagance on the part of the user. I mean, both the architects and the users stripped that building to the bones to make it even affordable at all. It really got clobbered. I think it shows in the finishes that wound up being there in the new Addition.

**Reti:** Yes. The students complain that it looks like a prison. We're getting back to this Brutalism. It's sad.

**Zwart:** That's exactly right. It's tough. It really goes to budget. But I've been impressed with what I've seen there and also in the Science Library (and you could probably answer this question better than I could), somebody is paying a lot of attention to graphics and directional stuff in both libraries.

**Reti:** Lee Jaffe is doing that.

**Zwart:** Is it Lee? Yes, it's very nice. Very handsomely done. I think it's turning out to be easy to find your way around.

### **Cowell Student Health Center**

And then another seismic upgrade project that's been a real challenge is the Cowell Student Health Center. That was always one of my favorite buildings on campus, designed by an architect named John Funk, who I never met but I hear was a cranky character, but a very good architect. At one point, as modern architecture was taking hold, there was one of probably a number of exhibits at the Museum of Modern Art about modern architecture. And if I understand it correctly, the photograph of the cover of the exhibit catalog was a house that Funk designed, I think in Merced or Modesto. So he's really a very well-known modernist.

The characteristics of that building were very nice around the little courtyard and so on. But again, that's a building that probably originally opened in 1972 or 1973, and the campus had badly outgrown it. And furthermore, while I'm sure it

was designed using then state-of-the-art seismic engineering, there were discontinuities in bringing the loads down the ground, so it didn't pass muster on subsequent current seismic design theory. They had to do some strengthening of that, and do an addition. Again, we knew because it was a student-fee funded facility, we knew we weren't going to be able to afford a cast-in-place concrete structure.

So we went through an architect selection process and we wound up picking a firm from Mountain View, Hawley, Peterson, Snyder, who had done a student health center at Stanford, does a lot of health care work in the Silicon Valley area, had done some programming for the student health facility at Princeton. The other real challenge in designing it was not just designing an addition and the seismic upgrade and renovating the old building. It was also designing the phasing of construction. Because the building was going to be occupied as they renovated.

Getting it built has been a real challenge. It should be done [by now]. I'll have to check with some of my colleagues back in Physical Planning & Construction. The last phase was supposed to be done in time for the students' return next month [fall quarter 2010]. I've heard no cries that it's not going to be, so I hope so, but they might not have reached my ears. But they did a very nice job. They went through three or four different site plan alternatives and worked closely with the users and with the Design Advisory Board to come up with a scheme that emphasized the courtyard in the middle of the building. I think it's [the courtyard] going to get more use now than it has in the past, which I think is nice.



The students actually passed a subsequent student referendum to augment the budget to turn it into the campus's first LEED-rated building.<sup>46</sup> I think it's going to be LEED-rated silver. They funded some finishes and some things that we couldn't have afforded within the original budget. So all in all, I think it's going to come out as a good project. I think they kept the spirit of the original building in there. I haven't been through it. It will be interesting. The last time I went through the original part of the building, because they've moving people around and shuffling people around, some rooms that ultimately are going to be used were being used for storage and so on. But I think it's going to end up being pretty nice.

### **Digital Arts Facility**

Then I mentioned a little while ago the Digital Arts Facility. That was done by Bohlin, Cywinski, Jackson, a firm that has its roots in Pennsylvania and has offices in Pittsburgh, San Francisco, and Seattle. I don't know whether it was in the users' minds that Bohlin, Cywinski, Jackson might be a pipeline to Steve Jobs, because they designed the Pixar Studios in Emeryville. But they've done a lot of work. And again, that was a project that, between the time it was programmed in budget and the time design started, we saw that big run-up in construction costs. Again, Sara Kane was the project manager on that and she worked with the users and with the architects.

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<sup>46</sup> LEED is an acronym for "Leadership in Energy & Environmental Design," a widely accepted building evaluation and certification program developed by the U.S. Green Building Council to provide building designers and owners a means of incorporating green building design, construction, and operations into their facilities. Information is available at <http://www.usgbc.org/LEED/>. —Frank Zwart (written communication).

I remember being at a conference of the Association of University Architects in Tucson, Arizona (June 2005). The Friday of that week, which was the end of the conference, my wife and I were heading into the Sonora Desert to do some sightseeing. There was a conference call set up with the campus and the Office of the President to go over the budget and how we were going to keep the project alive. It was really on life support. So I was sitting in a car with the motor running and the air-conditioning on, on a conference call back to Santa Cruz and Oakland to try and explain the numbers and keep the project alive and get state approval, which happened. And then the bids came in staggeringly, uncomfortably bad, but the campus that decided it needed to make that investment. I have to say I'm really sorry that the budget wasn't able to afford some of the architects' early ideas, because it integrated the building into the site better and actually had you walk over the roof of the building and then down. But we just couldn't afford it. Given what they had to work with, I think they did a terrific job. I know as part of the dedication ceremony they had a big open house and they had some of the work [of graduate students in the new Digital Arts and New Media program], and I went and saw some of that.

**Reti:** I went to that open house.

**Zwart:** Did you do the walk-through with the guy where you, with either an iPhone or an iPad, walked through the building and then he had news reports that overlaid news reports from the Rodney King riots in Watts or the war in Iraq?

**Reti:** No, I missed that.

**Zwart:** Oh, it was fantastic! It was very imaginative. It was terrific. I hope that the students who fill it live up to it. The other place—did you go up to that top room and see that truss?

**Reti:** Yes! Oh, what a fantastic view of the ocean.

**Zwart:** Isn't that a great truss? Yes, it's really something. I hope it does for the digital arts what the Music Building did for the music department. I think it's going to be a real asset.

**Reti:** There are some people who have been critical about that building blocking the buildings behind it, in terms of the view of the ocean. I know that's come up.

**Zwart:** That's inevitable. I joke that we should have started building at the bottom of campus and then worked our way uphill, if you were going to worry about that. We worked with Tom Hacker's office to do a master plan for the Arts Area. What they had hoped to be able to do was to run buildings into the hillside, oriented north-south, so that there might have been areas to glimpse between them. That, again, wound up being a little more expensive than the budget could afford. I know I got into a little bit of email exchange with somebody worried about the blocking, and I explained that the building was going to be sided in wood, and it was going to be stained so you would still get a sense of the wood siding, and that seemed to settle things down a little bit. I'm not sure there was much you could do about that.

**Reti:** I see.

## Ranch View Terrace

**Zwart:** Then, also completed at about the same time, was the faculty and staff housing at the base of campus called Ranch View Terrace, on what started its life as Inclusion Area D.<sup>47</sup> That was the first project that was done by a third party. The nature of the transaction between the Regents and the developer was not a construction contract. It was a real estate proposition under which the Regents licensed the land to the developer: the developer built the buildings. They then sold the improvements, the houses, to potential buyers—faculty and staff members. With the purchase of the house went a lease of the underlying land. I think it's a sixty-year lease agreement between the Regents and the users. The idea there is that that is entirely financed by the developer. It was a project [on which] we actually worked with Moore Ruble Yudell; they did a very imaginative master plan. Then we did a competitive selection process, where three or four developer-architect contractor teams proposed designs to that master plan. And the firm that was picked was called Ambling West, a firm that I think had its roots in Georgia but had a West Coast branch. As the process moved forward (this is another project that could have used an exorcist early on), the West Coast branch of Ambling bought themselves out and created themselves as a new entity. In other words, they spun off from Ambling West

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<sup>47</sup> Under University policy, inclusion areas are lands owned by the University and available to campuses for University-oriented uses which contribute to overall campus development, which are consistent with the mission of the University, and which cannot be accommodated on University property without some special arrangement. UCSC's 1988 LRDP identified five inclusion areas where the primary use proposed was housing for faculty and staff members, graduate students, students with families, and single students. Inclusion Area D was a 28-acre site directly west of the main campus entrance on a knoll above the Barn Theater and Cook House.—Frank Zwart, written communication.

and created their own company, called Valeo Companies. They had done a lot of faculty and student housing at UC Irvine and they'd also done some at Cal State Fullerton.

We had to do a habitat conservation plan for red-legged frogs and Ohlone tiger beetles. I remember doing a presentation to the Regents Grounds and Buildings Committee about all of this, looking out into the audience, and I could only think that people were looking at me as I was up there talking about bugs and beetles and frogs, thinking, "You poor bastard. I'm glad it's you up there, and not me."

**Reti:** (laughs)

**Zwart:** (laughs)

**Reti:** Not something other campuses face to the same extent.

**Zwart:** Well, actually, in the audience was former Vice Chancellor Brase, who is at Irvine. And he was mouthing, "We did one! We did one!" He was pointing at himself. And it turned out they'd participated in one about some gnatcatcher. But that was a much bigger one. It wasn't done only by the campus.

So we got over that hurdle. Then we went through the CEQA process, and it went to the Regents. One of the Regents, Judith Hopkinson, didn't think that the financing was sufficient. So OP and the campus had to work with the developers to put in place other financing. Then the developer had a falling out with the architect, so they changed architects midstream.

Typically, when we're doing a construction project—the forms of contract are fairly well understood and there's not a lot of back and forth negotiation. Because this was a real estate transaction, all of that had to be negotiated. It just went on and on and on and on. As I left the campus at the end of March [2010], it was my understanding that Valeo either had gone into bankruptcy or was close to bankruptcy, and there was a lot of back and forth with attorneys and Citibank, and I don't know where that stands now. But the buildings are complete. I think most of them have been sold. I think the campus purchased six or seven, eight of them to fill out the stock. So I think it's proving to be a successful development from the perspective of the purchasers. But it was not the smoothest of projects. It would give me caution about doing another one with a developer quite that way.

### **Porter College Residence Halls Upgrade**

Well, then the other two projects that are still under construction, or one is just wrapping up—the Porter College Residence House A, the second phase of a project to upgrade housing at Porter College. Housing started five or six years ago to take one college out of service every summer and do a wholesale renovation of its dining and residence hall or apartment facilities. It was coming up to Porter College's turn, and they also, quite wisely, have done a lot of investigatory work to find out in advance what the scope needs to be. So as the study of the physical fabric of the college was being done—they knew that they needed to do some seismic work in Porter House B, and they knew they needed to do some seismic work in the dining hall, and they wanted to completely renovate the serving and eating areas in the dining hall.

But as they were doing that, they also did some investigation, since there was rust starting to appear on some of the exterior walls. Once they looked, they saw that there was all kinds of water infiltration into the walls. It may have been infiltration; it may have been condensation. Nobody's exactly sure. I've seen the photographs of some of the inside of the walls conditions, and the steel studs were just rusting away. So Housing went from—I don't know what the original project budget was going to be, probably, I don't know, 20 or 25 million dollars—to all of a sudden having potentially a 50 or 60 million dollar bill to re-clad the building.

So somebody at Housing, I think it was Elise Levinson, said, "Well, if we're doing a seismic upgrade on one of them anyway, and we're going to have to re-clad the building, can't you look to see whether you can add some rooms on the top?" I thought that was the craziest thing I'd ever heard. But what the heck, we'd look at it.

**Reti:** (laughs) Why was it crazy?

**Zwart:** Because adding up [vertically] is costly—all of that. But the building was going to be empty [during construction]. So it was worth a look. They needed the housing badly. This was just at about the time that the campus was reaching its settlement agreement with the city and the county that essentially tied our enrollment capacity to being able to provide beds. This was going to get us a bunch of beds, almost like that [snaps fingers], on a very minimal footprint. I don't remember what the count was, but I think it was something like 260, 270 beds that we were going to be able to add in a very short period of time.

So they did it. Anshen and Allen was the architect. The engineer was Forell and Elsesser, a very good seismic and structural engineering firm in San Francisco. And DPR was the contractor. They managed to get the students in last fall. I haven't heard otherwise, but they are hoping to get the next batch of them in this year. They added one floor of rooms to House B and two to House A. I need to go walk around there as it gets close to completion, but it's looking pretty good. I haven't been into the dining hall since it was actually put into use. I was there after it was completed. But they hadn't put it in use yet. But I think that worked out well.

### **Biomedical Sciences Building**

And then there's under construction not far from here, if we were outside we could see it—the Biomedical Sciences Building—again one of those projects that seemed to have been a little bit cursed. We went forward on a very accelerated process; EHDD was picked as the architect. This was their first real lab building for the campus. But they accelerated the project and got through design lickety-split, got done very quickly, got Regental approval very quickly. And then it got caught up in the CEQA litigation related to the LRDP. And once that all got resolved, then we had treesitters. And once that all got resolved, we bid the project. The bids came in twelve to fifteen percent under [budget], which was unheard of. I hadn't seen that in a long time. And we couldn't award the contract



because the state's capital financing was frozen [in the recession and related state budget crisis].<sup>48</sup>

Finally, some folks in the Office of the President figured out a way to arrange financing for it and we were able to start construction a year or so ago. And it's going like crazy. In fact, as I left our conversation last week, I ran into the contractor. Devcon is the contractor. They've done a number of projects for us very well. Their first one was the Infill Apartments project. And then they wound up completing the Physical Sciences Building. They built the Humanities Building. They're building the McHenry Library project. And now they're doing Biomed. And it's going well. I saw their project manager and he said it is going very, very well. It's just coming out of the ground like crazy.

That's where we are. But it's transformed the face of the campus, really, all of that stuff.

**Reti:** Yes, if you could do time-lapse photography of the development of the campus over the past twenty-five years, it would be quite a movie.

**Zwart:** Yes.

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<sup>48</sup> "As a result of the marathon budget crisis, and the unprecedented malfunction of national and global credit markets . . . [the] State could not sell any general obligation (GO) infrastructure bonds for nine months, from July 2008 to March 2009. To conserve cash for education, debt service, and other priority payments, the State on December 17, 2008 halted interim financing for more than 5000 infrastructure projects. The freeze delayed or stopped work on schools, roads, housing, parks and other projects across California—projects initiated under voter approved bond acts. It affected thousands of jobs for workers, billions of dollars in revenues for private businesses, and imperiled many community based and nonprofit organizations."—An excerpt from page 1 of *The State of California Debt Affordability Report*, published by California State Treasurer Bill Lockyer in October 2009 and available at: <http://www.treasurer.ca.gov/publications/2009dar.pdf>

### Getty Campus Heritage Grant

**Reti:** And then you also got a Heritage Grant from the Getty.

**Zwart:** Yes. John Barnes of our office and Sally Morgan really need to take all the credit on this one. Oh, probably seven or eight years ago the Getty Foundation decided that they would make a move into what they called campus heritage, which was typically thought of as historic buildings. They had a kick-off conference that was coordinated by an architect, I think a faculty member, at the University of Oregon. They had a kick-off meeting in Chicago to talk about this, and I was invited to attend as a campus architect. They had people from all over talking about campus heritage, and they put in place a grants program. The first couple of years tended to be focused on buildings.

John Barnes, with his planning background, and Sally Morgan, who works in our environmental planning office, but her own background is in archaeology with a particular interest in California archaeology, put together a proposal for the Getty about not just looking at the buildings, because our academic buildings don't really qualify. They're not old enough to qualify for— We think of them as historic and as a resource, and our own kind of heritage, but I don't think that's quite what the Getty had in mind. But they really wanted to focus on the landscape of the Cowell Ranch and the Cowell Lime Works. There had been some work done over the years that categorized certain things for listing. But the Getty grant allowed the campus to complete the documentation and pursue listing for the area around the foot of the campus as a historic landscape with the National Register [of Historic Places]. And we succeeded on that. I'm not sure

this is entirely true, but it may be the first on any University of California campus.

So we were very pleased with the way that came out. And coming out of that, has been the Friends of the Cowell Lime Works, which is a campus support group that's working to increase awareness, and also potentially to raise funding to stabilize some of those buildings, which are badly needed. It's an interesting piece of Santa Cruz history that I think gets a lot of short shrift. As campus architect I was an *ex-officio* member of the Lime Works board. Frank Perry, who is really the driving force behind [the Friends of the Lime Works], is a local guy. People within the Santa Cruz community really pop up and know a lot about the history and have actually family ties into the Cowell Ranch somehow. And so I think it's being seen, quite appropriately, as another potential link between the campus and the local community, and I hope it's successful in that regard.

### **UCSC and Sustainability**

**Reti:** Today is September 2, 2010. I'm with Frank Zwart at the Science & Engineering Library. This will be our final interview. Today we're going to start by talking about UCSC's longstanding activities in the area of sustainability.

**Zwart:** There has been in the last eight or ten years, and with increasing frequency and increasing volume on the national scene, more and more talk about sustainability and sensitive energy-conservative design, and now moving into concerns about carbon emission reduction and all that sort of thing. That's something that the campus has done a good job at. As far as some of the particular standards and guidelines that have been adopted as measures of

sustainability in this current way, particularly the LEED standards for building design, we were not at the cutting edge or leading edge among our sister campuses. UC Merced and UC Santa Barbara were really out in front about that. But I think in part that's because the campus really has its roots—if you go back to the first Long Range Development Plan and the first areas of development of the campus—the notion of developing in sympathy with these particularly spectacular surroundings that we have was glued into the way the campus got started. There just has never been a hell-bent-for-leather development mentality here. It's always been done with the thought of sensitivity and appropriate respect for the environment. In fact, probably we got better publicity than we actually deserved. If we go back and look at some of the early engineering decisions or early construction practices, we do a whole lot better now than they did in the 1960s, because we know a lot more.

Shortly before I arrived on the campus in the mid-eighties, there was the energy crisis in the mid- to late seventies, '74, '75, '76. There was the Arab fuel crisis, the Arab embargo and all of that. And so that was really the first time I think nationally that this came to a lot of people's attention. Earth Day I think grew out of the 1969 oil spill in the Santa Barbara Channel and that got people aware of this.<sup>49</sup> But then the fact that there were economic implications of this, I think

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<sup>49</sup> "On the afternoon of January 29, 1969, a Union Oil Co. platform stationed six miles off the coast of Summerland suffered a blowout...200,000 gallons of crude oil bubbled to the surface and was spread into a 800 square mile slick by winds and swells. Incoming tides brought the thick tar to beaches marring 35 miles of coastline... In the spring following the oil spill, Earth Day was born nationwide. Many consider the publicity surrounding the oil spill a major impetus to the environmental movement. Only days after the spill began, Get Oil Out (GOO) was founded in Santa Barbara. Founder Bud Bottoms urged the public to cut down on driving, burn oil company credit cards and boycott gas stations associated with offshore drilling companies. Volunteers helped the organization gather 100,000 signatures on a petition banning offshore oil drilling.

grew out of the Arab oil crisis in the mid-seventies. In those days I was in architecture school, and because of the sudden increase in the cost of fuel oil prices, Princeton deferred the beginning of the second semester by a month. I had an extra four weeks of Christmas break, simply to avoid those heating bills. So people became aware of that.

I think this was going on long before I got into the campus architect business—the notion of energy conservation in the design and operations of campus buildings was really something that took hold in the late seventies and early eighties. My predecessors, and some of the people I worked with early in my career, were very aggressive about energy savings. I know Lou Fackler, who was the head of Campus Facilities when I first joined the staff in the mid-eighties, was involved. He and the engineering staff in place at that time were very involved in a lot of engineering conservation projects. It really became just part of the way that the campus did business. They evaluated that stuff. Lou and Dan Casolari, who was the mechanical and electrical engineer on staff, were real energy hawks. They did a series of retrofits. They took out chillers in buildings that they felt didn't need to be air-conditioned. In fact, one of the subsequent campus engineers felt that they may have gone too far and went to, not just energy restrictions, but energy constriction. Finding that balance has been an important thing.

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While drilling was only halted temporarily, laws were passed to strengthen offshore drilling regulations." See [http://www.geog.ucsb.edu/~jeff/sb\\_69oilspill/69oilspill\\_articles2.html](http://www.geog.ucsb.edu/~jeff/sb_69oilspill/69oilspill_articles2.html)

But it's always been important to the campus and it's always one of the things we looked at as buildings were in the design phases, again, before I became campus architect. I think that was a mindset that permeated both the design and construction side of operations at UC Santa Cruz, but also the Physical Plant office, which are the group of people that are responsible for operating the campus. They became as strong a set of advocates as you could want on those sorts of things.

In this most recent implementation of sustainability standards systemwide, and with about the time of the adoption of by the Regents of the green building policy, I remember having conversations with colleagues at other UC campuses, who would grumble about how they would have to convince the "dinosaurs" in their Physical Plant office that this was all worthwhile and something worth doing. That had never been the issue here. The Physical Plant at the Santa Cruz campus has been at least as aggressive about energy savings and reduction and proper operations as anybody on the design and construction side. That's made things a whole lot easier.

The other thing that was very interesting in the Regents' adoption of a green building policy, or an energy policy, was the role that the students played in it. It was, in fact, a student movement, and there were a handful of UC Santa Cruz students involved in that. They got together on a systemwide basis, and they approached the Regents about a new green buildings and operations policy. I know I was at a Regents meeting where there was a presentation made, and it may have actually been the one where the Regents formally adopted it. I said to some of the Santa Cruz students who were there, who we'd had some dealings

with in its development, that they did something that I didn't think that any group of staff members could have done, that the campus architects could have all come together and gone to the Regents, and the Regents would have said, "Well, that's very nice." But the fact that it was initiated by the students and the students really became the conscience of the University in putting that together—I think they really did accomplish things that wouldn't have been accomplished otherwise. I have to give them a world of credit for it. And they've stayed on it.

I think one of the great and really interesting things about the Santa Cruz campus is that they've pushed the notions of sustainability into areas far beyond just building design or energy use. Transportation is one piece of it. I remember back in my undergraduate days in the late sixties or early seventies, the students voted a fee that would then buy themselves a bus pass throughout the whole area system. That continues to this day. It was back in those days also, and I think this got a little bit of national press, there was the organic food line in the dining halls. And that of course has turned, over time, into the sustainable food policy. And there were UC Santa Cruz students and alumni who were active in getting that added to the University's responsible energy policy.<sup>50</sup>

I think one of the real lessons this time around on sustainability is how interrelated a lot of those things are, how interrelated all of that stuff is. Having

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<sup>50</sup> For more on sustainable food in UCSC's dining halls see the oral history with Tim Galarneau which is part of the Regional History Project's Cultivating a Movement series about the history of organic farming and sustainable agriculture on California's Central Coast. <http://library.ucsc.edu/reg-hist/cultiv/galarneau>

gone through the LEED training and understanding the LEED accounting mechanism and the various certification levels—silver, gold, and platinum—it's really technical accounting. It's technical bean counting and there's lots to fault it for because it doesn't take everything into account. But I think there's much more to be grateful for what it's accomplished, than to criticize it for. Because it's made people aware of all of those things. There are points in the LEED criteria for alternative transportation or for stormwater management.

Stormwater has always been a big issue at Santa Cruz. I think I mentioned the other day, when we talked about the Infill Apartments projects, that we have four watersheds. Here we don't just pour the water underground into pipes. It actually flows over ground. And that's always been a huge, huge thing. I remember realizing, maybe halfway through my term as campus architect, that we needed to start looking at the drainage ways, most of which are on the surface lead into the sinkholes and karst systems on campus, as an infrastructure system. At UCLA or at Berkeley there is a stormwater system. It's pipes and it's underground, but the fact is that our ravines and our channels convey stormwater just the way that those underground pipes do. And so we actually started talking in the office, and on the campus, and with Capital Planning about stormwater as an infrastructure system, even though it was above ground. Because my concern was that the Office of the President would say, "Well, you've got erosion. That's just a maintenance problem. You have to maintain it."

Over time, the campus has started looking at its drainage ways as an infrastructure system. Under construction right now is a project that was funded in part by the state to actually build [drainage and detention] structures and to



improve the drainage ways on campus, so that we weren't creating erosion off campus or elsewhere on campus. So that's been a big part of the site development and I was very pleased to get the campus and the Office of the President to convert their sense of it from just—well, you need to maintain the ravines (which we do need to do) to one where we actually need to design it as a piece of the infrastructure. So the campus, as part of doing that, did a stormwater and drainage master plan that then will allow the campus to develop and handle its stormwater in sustainable, effective ways.

But back to the whole sustainability issue. All of this gets tied together. The campus had a good bus system, a good campus shuttle system, had good routes served by local public transportation. But because of the configuration of bus stops on campus, the public buses could only run one way. I think it was counterclockwise.

**Reti:** Yes.

**Zwart:** That became a disincentive for people to take the bus. You would take the bus if you were to get off early on. But if you have to wait for the bus to go all the way around the campus, you'd be less inclined to take a bus on the way home, say. TAPS did put together a project and we worked with them to design these improvements. They were able to route city buses both clockwise and counterclockwise across the campus. They saw an increase in ridership because taking the bus became more convenient. So that relates to the campus's parking policies and parking practices and the cost of parking fees. So much of what the campus does is moving in a good direction. I think the real challenge is, as it is in

any of these things, a behavioral challenge. Are people going to start changing their behavior to reduce their impact on the environment? That's something that we as a society at large are dealing with, and certainly the campus is as well.

**Reti:** Right. I commute by bus, but I know that there aren't that many staff that take the bus.

**Zwart:** In all of the flurry and fury about building the parking structure on campus, and doing transportation analyses and studies, bringing in transportation engineers who've worked at campuses in settings similar to ours—I mean, you wouldn't compare UC Santa Cruz, say, to Columbia University, for example. But comparing campuses of our size in a physical setting like ours, the percentage of students, faculty, and staff who take other than single occupant vehicles to the campus is a very good number. The campus is working aggressively to increase that number all the time. So that stuff really all fits together. But I think the integration of things is always the challenge in those kinds of development and planning issues.

**Reti:** And then you also have a sustainability coordinator.

**Zwart:** It's a relatively new position that grew out of the campus developing its own sustainability plan, and sustainability being an articulated goal and expectation of the Regents. There are a series of reporting requirements that we have to the Office of the President to comply with the various elements of the Regents' program. And the difficulty is that the expectations range, as I said a little while ago, from energy use, from the way that buildings are cleaned, from

transportation, all the way to what courses are taught. So where does that position actually reside? When the position was first created and a sustainability assessment was prepared, the position reported to the director of Physical Plant, who at the time was Ilse Kolbus. And then when Ilse retired, and there were some reorganizations in Physical Plant, then the position began to report to Physical Planning & Construction, and we had it report to our planning group, to John Barnes, as the head of the planning office. That, I think, is where it still lies.

It's a difficult job for anybody to do. They've really got to go on a lot of enthusiasm. Because they have little bits of money to work with, but not a lot, and they've really got to use commitment and moral persuasion to get people to change their behaviors throughout the campus and to adopt policies. Aurora Winslade, who was the first person to be hired into the position, is an alumna, and she was involved in some of those early days getting the Regents to adopt the policy. She's done a very effective and very good job.

As I retired, the campus had completed a sustainability assessment which was a snapshot of how we were doing in lots of different things. They were hard at work, Aurora and John and I had a little bit to do with it, but it was really a working group of people from all over the campus. They were working on a sustainability plan to come up with metrics and ways to improve in all of the various areas. And again, it's one of those things where it was an activity that was met with a fair amount of enthusiasm on the part of staff members, whether it was people in TAPS, or people in food systems [Center for Agroecology and Sustainable Food Systems], or people in Purchasing. This is something that I

think people want to succeed at, so it seems to be going in a very promising and positive direction.

**Reti:** Was this the UCSC Sustainability Subcommittee?

**Zwart:** Yes. I don't remember the exact history, but it started off as the Sustainability Subcommittee and then I think it changed its name to the Committee on Sustainability and Stewardship. Then the Advisory Committee on Facilities changed its name to the Advisory Committee on Planning and Sustainability, or something like that, or Planning and Stewardship, something like that. I think the administration, John Barnes and Tom Vani, have worked very hard to integrate it into the way that we do business. One of the institutions that people look toward for inspiration when it comes to sustainability issues was the University of British Columbia. I was there at a conference a number of years ago, and their first sustainability coordinator spoke to the group. And she just said, "My intention is to work myself out of a job." I think that's the right way to look at that, get people to be doing this just in the normal course of their everyday responsibilities to the university. And I think the campus is on its way to making that happen.

### **Reflecting Back on A Long Career**

**Reti:** So it's now 2010 and you've been part of this campus, well, if you go back to your student years—

**Zwart:** Since 1967. And it's really hard—I find myself saying this a lot when I go out and do talks about campus planning and the history of the campus's

architecture—it's really hard, especially to younger audiences, who have grown up in the environment of post-Proposition 13, or in the environment of, "Government *is* the problem" and that sort of mindset, to convey the incredible optimism that Americans, and California in particular had in the fifties and sixties. I mean, anything was possible here. There's just no question that Santa Cruz came out of that spirit. So did Irvine and San Diego. And the whole University of California experiment actually did that and did a remarkable job at it. For a state institution to set up the campuses that it did (this is all pre-UC Merced), and to have so many of them so highly rated on a national level—it's just unprecedented. In fact, I was just doing a little bit of rearranging and repacking at home and I came across an issue of *The New Yorker*, probably from the early nineties, that I kept.<sup>51</sup> Imagine *The New Yorker* doing an entire issue about California! But the really interesting thing was that somewhere in the middle of it was a double-page spread photograph of all of the Nobel Prize winners from California. And how many of them had their roots in the University of California was just remarkable. It's been a remarkable, remarkable enterprise, and a successful enterprise that I think too many people have taken for granted for lots of years. I think the public at large has come to take it for granted. And I think the University's own administration, when it's behaving at its worst, forgets the impetus that gave rise to it.

Not a lot of people get the opportunity in the course of a career to come back to a place that means a lot to them and then wrestle with and learn about why it was

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<sup>51</sup> February 23, 1998.

such an important place, and have something to contribute to it over the course of the years. I count myself as very, very lucky, first of all in having attended UC Santa Cruz when I did; second of all, taking advantage of a group of really interested and committed—first of all, faculty members, who came here to try something new. But also a really wonderful bunch of students.

I was quite nervous about going back East to architecture school. The Ivy League. “The Big Time.” My architecture class ranged from between fifteen and twenty people, who are also very interesting. And I certainly felt, based on my four years at Santa Cruz, completely and adequately prepared for graduate work at Princeton, having classmates from Harvard and Columbia and Georgetown, NYU—places like that. So it was really a remarkable time, and I probably said earlier in our conversations that I’m not sure that anybody sets out to be a campus architect. That’s not one of the sub-disciplines of architectural education, the architectural curriculum. And it certainly wasn’t at Princeton, which was a very small place and really focused on people being very well rounded and very broadly skilled. So it was just a matter of good fortune and good timing that brought me here.

### **Julia Armstrong-Zwart**

I probably ought to also include in this recollection the incredible good fortune I had—I mean, Santa Cruz has been extremely, extremely good to me. In addition to all the educational and professional opportunities it provided, here is the place that I met and fell in love with and married Julia [Armstrong-Zwart], my wife. She’s quite remarkable. She’s always been very careful, and I think we were very

fortunate in that our campus orbits didn't intersect very often. She worked much more in the administrative and faculty relations and HR side. I only remember one or two times when we wound up being on the same committee. The one that comes immediately to mind is that she chaired the campuswide Americans with Disabilities Act committee, where we had to comply with the ADA. Since there were architectural implications for that, I, and members of my staff were involved in that. But for the most part, we actually worked in very different circles.

Julia, having been the campus's founding Ombudsman, was extraordinarily discreet. She has extremely good judgment and I knew there were things that she knew about and couldn't talk about, and she didn't. We joked that we never talked about work at home, but that was a big lie. But still, the fact that I had spent so much time with her, I got a glimpse into a broader workings of the university than had I just been the campus architect alone, or was married to somebody not involved with the university—just a better understanding of what was important to the university, of how the university worked. She also did a lot of work on a systemwide basis. So a better understanding of UC Santa Cruz and the whole UC system, and that perspective was extremely valuable in being effective during my time as campus architect.

So, to come back to a place that helped form me in a big way intellectually, led me into a profession that I couldn't have imagined on my own, to live surrounded by examples of it (although I didn't really realize it at the time), was a remarkable opportunity. And then to actually have the chance to put together a staff that would carry those founding principles into practice over time, and to

leave the campus with that. It's hard to say. I was asked one time what my favorite building on campus was.

**Reti:** (laughs) Is that like having a favorite child?

**Zwart:** That's exactly what I said! This was somebody from the Alumni Association. She was pushing me and pushing me. I knew she had two or three kids. I said to her, "Whose your favorite child?" She said, "Point taken." So to say what is your proudest accomplishment? There just wasn't one thing. But the fact that we were able to do it, that we were able to, through a very different set of changing circumstances, and over a period of twenty years, and now, close to fifty years after the founding of the campus, to really try and keep some of those principles alive has been extremely gratifying. As you come close to the end of a career, and as I was getting ready for retirement and cleaning out my office, I had plenty of chance to think about that kind of stuff, and I was really very, very happy to do that.

### **Looking to the Future**

Looking to the future, I think UCSC has some real challenges. It's a small campus in a large system. The economics of things always tend to be a driver. I heard stories, I don't know if they're apocryphal or not—but back in the sixties and seventies when funding was tight in the world of private education, that Columbia University went around—they felt that they didn't have money to maintain their classical buildings designed by McKim, Mead, and White. And they were worried that certain pieces of decoration on the building parapets might fall and hurt people. So they went on and just knocked them off the



buildings to reduce the risk. Bad economic times lead to bad decisions. I think for the University of California in general, and for Santa Cruz in particular, I think getting through this last round or this most recent round of budget challenges without compromising those kinds of values, or keeping them alive in some way is going to be the biggest challenge they face.

UC Santa Cruz is a public campus, which is very much part of its strength. I've been impressed enormously, working with some of the faculty who take either committee or administrative roles, the degree to which an awareness that this is a public institution and that the campus has a responsibility of educating the children and the people of the state really is in the faculty consciousness. I just thought, well, faculty members think about their research and teaching. They don't see that. But that's not the case at all. They know what the University of California is here for. And I think in an environment, in a national environment, where anything that the public sector does is questioned or questionable, to keep the importance of that alive, and by doing it in a responsible and effective way, I think that's going to be a big challenge for all of UC and for the Santa Cruz campus as well. And building good buildings in keeping with this environment is only going to be a small part of that.

**Reti:** We're doing this interview at this very key moment in history when the people of California have to decide how many resources they want to put into education at all levels.

**Zwart:** And in what sense. We're sitting here on September 2, 2010. By law, the legislature was to have passed a budget by June 30 and there still isn't one. July

and August. It's two months late and there isn't one in sight. Sacramento seems to be gripped by a complete impasse. And the University [of California] is going to fall victim to that at some point. It's hard to think otherwise.

My grammar school and my high school years were spent in Catholic school—so I didn't grow up through the public education system. But I did spend four years at UC Santa Cruz, and I'm very aware of what public education can do and mean. And then, the time that I spent in architecture school at Princeton, getting to know people from the Northeast much better. The role of institutions like the City University of New York in creating first-rate scholars, and intellectuals, and technicians, and engineers, and physicians. I mean, what public education does is absolutely remarkable! It's hard to imagine that people aren't seeing that. I think that somehow has to be restored.

**Reti:** And you were mentioning that you ran into Dean McHenry at a certain point.

**Zwart:** Oh, this was funny. In my undergraduate days there was a lot of talk—of course the late sixties and early seventies were known for lots of student protest—and there bits of it here too, and Kent State. There were lots of talk about, well, UC Santa Cruz was developed to spread people through the woods so they couldn't get together and protest. And I thought to myself, well, that's a cynical view. It's really about breaking things down and making things more humane and all of that, and I didn't pay much attention to it.

In September of 1989, Julia and I took a driving tour to the Pacific Northwest. And shortly after we got back, I ran into Dean McHenry, the founding

chancellor, at some campus function. So by way of making small talk I mentioned that we had just come back from this trip to the Pacific Northwest, and that we'd visited Simon Fraser University, which is just outside of Vancouver, in Burnaby, British Columbia. It's a very different campus than Santa Cruz. It's a spectacular setting, but they took a very different approach. The architect, a Vancouver architect of international renown, Arthur Erickson, designed the whole thing, and he saw it as a mega-structure. It was really one set of interlocking buildings across the top of a mountain, was Arthur Erickson's original plan. Just to hear it described, it sounds like it could be pretty dreadful. But it was actually pretty wonderful. I told Dean McHenry how impressed I was by it. And he said, "Well, you know, Simon Fraser University is an exact contemporary of ours. UC Santa Cruz and Simon Fraser opened in the same year. Both opened in 1965." He went on to say, "You know that big plaza that they put just outside the administration building? I think that was a terrible mistake." (laughs) So, I thought, well, maybe there was some truth to that.

**Reti:** Some truth to it.

**Zwart:** Looking at *LA Times* articles from the early and mid-sixties about founding the campus [mentioned at the beginning of the oral history], there was no question there that it was seen as an antidote to Berkeley. I mean, the cynical side of that perspective is it was to prevent student protest.<sup>52</sup> The more optimistic side, or more generous side of that perspective, is to say, students are getting lost

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<sup>52</sup> UCSC's first Long Range Development Plan was published in September 1963, more than a year before the December 1964 Free Speech Movement sit-ins—Frank Zwart (written communication).

in the crowds at big places like Berkeley and UCLA and there needs to be a better way to handle public education. During my days here the campus varied in size from probably about 2400-2500 students when I entered, to about 4000 when I graduated. Just by its size it was going to counter Berkeley and UCLA. Now that Santa Cruz is up at 16,000 or 17,000 students, I'm not sure how good a job it does. But the impression I have from talking to students is that they really do feel a sense of attachment to the place and particularly to their colleges. So I hope that's really still alive and still going on.

**Reti:** I think there's still a great deal of love for this campus on the part of all of us who are in the campus community—students, staff, faculty.

**Zwart:** Well, my standard line was always—when there were protests about a planned building—I would talk about what a pain in the neck it was, but that I wasn't sure that I wanted to work in a place where people didn't feel that strongly about their surroundings. That was really true here.

**Reti:** Well, thank you so much, Frank. This has been a tremendous pleasure and has certainly opened my eyes up to the place that I've come to love so much.

**Zwart:** It's been fun for me too. Thanks, my pleasure.