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## Places

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From Participation to Ownership: How Users Shaped the Science Complex [The University of Oregon Science Complex]

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# From Participation to Ownership: How Users Shaped the Science Complex

Photo by Timothy Hursley.

*John Moseley*

The University of Oregon is proud of its long history of intense faculty involvement in its decision-making processes. This tradition has been carried over into the planning of new facilities as a result of *The Oregon Experiment*, which is a prescription for involving a community (people who teach, work and study at the University) in developing its environment (the campus). The major principles of *The Oregon Experiment* — organic order, piecemeal growth, patterns, diagnosis and coordination — are all implemented by means of user participation.<sup>1</sup>

At least three “user groups” are identified at the University. First and most obvious are “direct users”: the faculty, staff and students who will occupy and use a building. The “direct users” of the science complex were represented by the Science Facilities User Committee, the Core Users Committee and major task groups (see opposite page). Second is the Campus Planning Committee, an ongoing body that includes the campus planner and representatives from the faculty, administration and Physical Plant department. This committee brings an overall campus perspective to each project and assures appropriate consideration is given to the principles that guide campus development, primarily those expressed in *The Oregon Experiment*. Finally, the University administration must approve the project at several stages and is involved throughout the planning and design.<sup>2</sup>

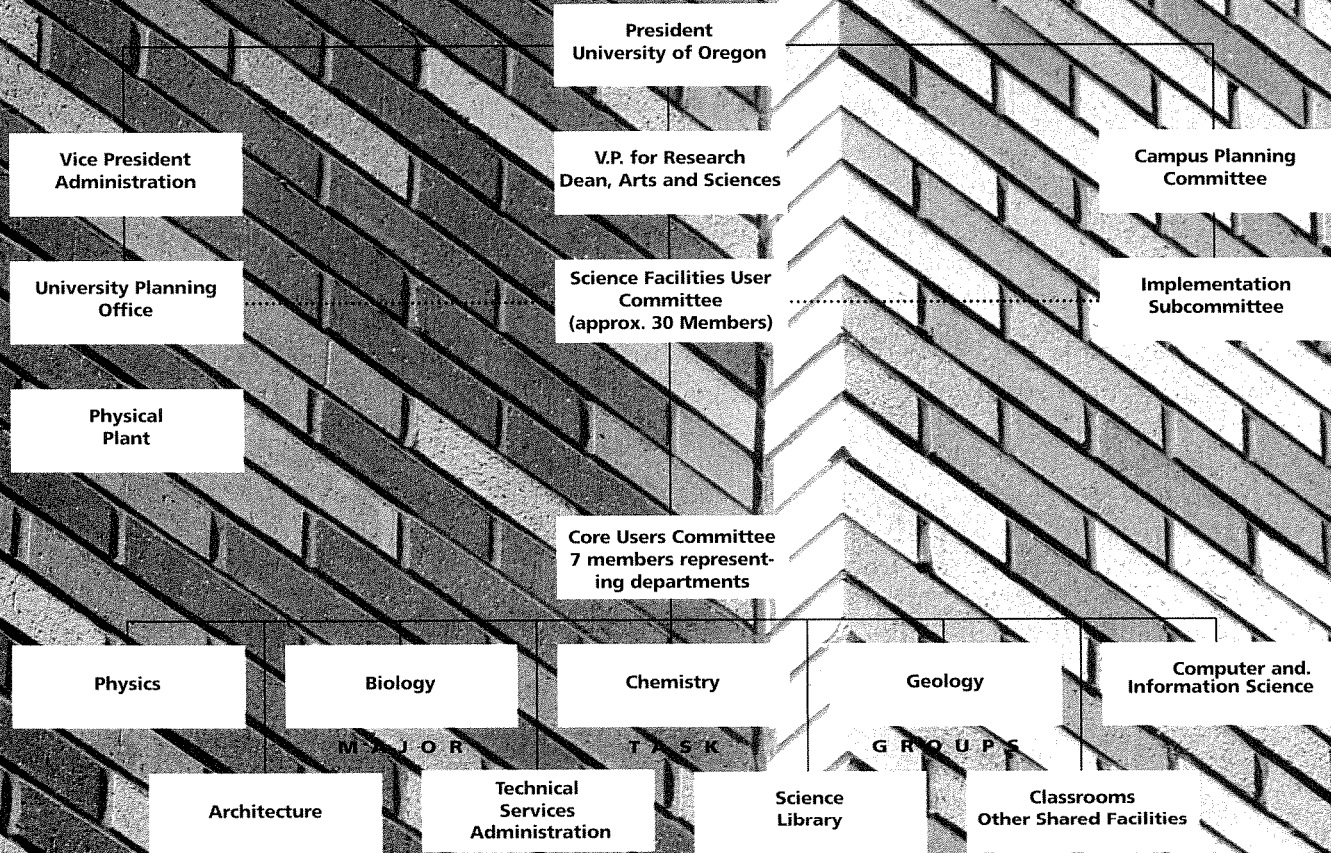
The “direct users” were engaged in planning the science complex from the earliest conceptual stages through the final designs. This group established the basic physical framework for the project, determined how much new space would be allocated to various activities and decided the principles for distributing this space among the array of new and existing buildings.

The faculty and staff who would occupy the new buildings were represented by the Science Facilities User Committee, which was composed of more than 30 faculty and staff representing all major areas of concern in the project. This committee was appointed jointly by the Vice President for Research and the Dean of the College of Arts and Sciences.

The Chair of the Science Facility User Committee appointed the seven-member Core Users Committee, which included the campus planner and representatives of each of the departments involved in the project and which functioned as an executive committee for the larger user committee.

The Core Users Committee established several “major task groups,” one for each department and one for each shared facility, such as the library, classrooms and workshops. These groups were responsible for defining the program for spaces they would use and for making proposals to the Core Users Committee.

The Core Users Committee had primary responsibility for putting together funding proposals for the project and for drafting the program that defined the project for prospective architectural consultants. The key elements that the proposal and program contained were a detailed breakdown of the space (new, existing and renovated ) the Committee thought would be needed through the year 2000 and a conceptual model for organizing that space.



M A J O R T A S K G R O U P S

These two basic issues, the allocation and organization of space, were intertwined and were resolved successfully because they were addressed at the same time by the people who had the most stake in the outcome.

As might be imagined, reaching agreement about priorities for allocating the new space was not easy. When the discussions began, all of the groups that might benefit from new space were in seriously overcrowded conditions. Just making up for this accumulated deficit of space would have required approximately half the funding that was being sought. But there was demand for even more space — all of the science departments had open positions and could reasonably expect that new positions would be created through a state “Centers of Excellence” initiative. Consequently, the major task groups presented requests for more than twice as much space as was expected to be available, even assuming full funding.

To make matters worse, the University was not certain there would be enough money to finish the project. At the time planning of the science complex commenced, we were assured funding (\$2.3 million) for the planning and initial design phases, but there was no money committed for construction. The University had requested a total of \$45 million from the U.S. Department of Energy and the state government, but had to be prepared for the possibility that final commitments from these sources could be substantially less.

The ability of the direct users to reconcile their space requests and the overall expansion program with the expected funding limit is a strong indicator of the value of including users in the planning process. The Core Users Committee, major task forces and entire User Committee met regularly for two months to discuss the long list of space requests, to justify them to each other and to the larger group, to eliminate overlapping requests, to seek more efficient uses of space and to compare the space requests with national norms for comparable programs. The end result contained a surprise: The users agreed on not only priorities for using the new space, but also a conceptual plan for organizing the new space (and integrating it with the existing buildings).

To explain this how this happened, it helps to describe the organization of the sciences at the University. In addition to the biology, chemistry, physics, geology and computer and information science departments (those that would be affected by the expansion), the University has a number of interdisciplinary institutes that cut across departmental lines. They are molecular biology, chemical physics, materials science, theoretical sciences and neurosciences.

These institutes are not “free-standing”; they are tightly integrated with the departments. All faculty appointments are made within a department, and the institutes consist of faculty who are brought together around an interdisciplinary programmatic focus, regardless of their department. A substantial majority of the science faculty is affiliated with an institute.

**Atrium connection between Willamette Hall, the new physics building, and Klamath Hall, the existing chemistry building. Left and right photos by Timothy Hursley. Center photo by Donlyn Lyndon.**





**Left: Second-level connection between Volcanology Building and Cascade Hall. The stair at right leads to the third level of Cascade Hall.**

**Below: A stairway within Cascade Hall.**

### *Horizontal and Vertical Integration*

Most of the science faculty at the University are not only appointed within a department, but also affiliated with an interdisciplinary research institute. Faculty members wanted the new complex to facilitate their interactions within both groups.

To accomplish this, departments are located in individual buildings (vertical integration) and institutes are located on the same floor of each

building that houses a department with faculty members in the institute. The connections among floors and buildings include “social stairs,” hallways, light wells, an atrium and an outdoor stairway.

Each of these elements fosters easy access and encourages random social interaction. These elements also provide occasions for the differentiated architectural spaces and expressions that make each building, and each departmental realm, unique.



It had been realized by the science faculty long before the planning for the science facilities started that the ideal arrangement of space would allow a faculty member’s office, laboratory and research assistants to be located in a place that was physically connected to both the department and the institute with which that faculty member was affiliated. For example, I am a physicist; I want to be in an area that is identified with the physics department since my teaching is in this department and I have interests in all of the research areas of physics. I am also a member of the Chemical Physics Institute, which involves not only atomic, molecular and optical physicists but also physical chemists. I also would like to be particularly close to those chemists involved in the Institute, in order to facilitate research cooperation.

The User Committee was not certain that the new facilities could be designed to accomplish this goal; the integration we envisioned would require making connections between new and existing buildings. To guide its thinking, and the thinking of the architects, the committee developed a conceptual model called “horizontal and vertical integration.”

The programmatic purpose of “horizontal and vertical integration” was to permit each faculty member to be physically located “in” her or his department and institute. At the same time, this arrangement helped reduce the space request from each major task group. For example, it turned out that seminar and class rooms, administrative office space and various support activities could be shared efficiently. These reductions resulted not only from finding efficiencies in space organization and sharing, but also by developing within the entire group a common goal: solve the “horizontal and vertical integration” problem. Each major task group was more likely to reduce its space request to help achieve the highly desired overall organization of space.

The users also decided the new complex should consist of four smaller buildings, three of which would connect to each other or to existing buildings. This approach could satisfy the horizontal and vertical integration scheme, keep buildings to a scale consistent with other buildings in this area of the campus and maintain the spirit of *The Oregon Experiment* by giving the

appearance of “piecemeal growth.” This approach also provided opportunities for the architects to design and users to discover a “sense of place” within the complex.

These ideas were incorporated in a proposal titled “Design of a Science Facility for the University of Oregon.” The proposal contained an overview of the activities that would be housed in the new buildings, described the horizontal and vertical integration scheme, included a conceptual plan for locating the new buildings and provided a breakdown of space needs for the programs. The proposal was not only submitted to potential funders but also served as the heart of a manual for prospective architectural consultants (which was used in the selection process for the architects); the ideas in the proposal became the basis for the design of the new facilities.

Having reached an agreement on an overall arrangement and allocation of space, it was easier for the direct users to accomplish the even more difficult task of deciding on priorities at lower funding levels. However, the University obtained all the funding it was seeking, and the arrangement of space that was finally constructed closely follows the original conceptual model.

### **From Integration to Ownership**

Involving the users so early, and so substantively, in the planning process helped in two important ways. First, a process that did not involve users so thoroughly probably would have obtained less suitable results, and its decisions about allocating space probably would not have been so well accepted. Second, the users’ success in developing a conceptual model for organizing space in a way that met important community needs led to a very high degree of “ownership” in the project. These accomplishments set the stage for continued constructive involvement of the users in the development of the project.

The architects organized several participatory “workshops” that involved members of the User Committee, as well as other appropriate faculty and administrators, to address issues such as the building location and massing and the schematic design of departmental spaces and laboratories.<sup>3</sup> In addition, the core committee and the major task groups worked directly with the architects to develop the conceptual design. Having such a large number of participants in the process certainly was time-consuming, but the “consensus” solutions reached in most aspects of the project would have been impossible otherwise. The high degree of faculty and staff involvement also brought additional responsibility to administrators who had to arbitrate differences that were not easily resolved and also had to keep the project on a reasonable timeline.

This involvement brought with it a sense of ownership that made it easier to cope with problems that arose during the design and development of the science complex. For example, construction costs were higher than expected, forcing a reconsideration of the amount of space allocated to various activities. The Core Users Committee opted to absorb a 12 percent cut in assignable space in order to leave intact design features intended to integrate the new buildings with the existing ones and with the remainder of the campus. Quality and organization of space and architectural design won out over maximizing floor space.

Now that the buildings are occupied, it is interesting to observe how well the concept of “horizontal and vertical integration” is working. One of the areas where this concept can be best seen is in the connection between the new physics building, Willamette Hall, and the existing chemistry building, Klamath Hall. The connecting element is the spectacular atrium, which brings physicists and chemists into the open area, allows most of the hallways in Willamette Hall to be open to the atrium and allows these two buildings to function as one. Faculty who work in these buildings report that both planned and spontaneous interactions with other faculty in their department and their institute are enhanced by the easy connection between the buildings and by the attraction of the open space. It is virtually impossible for me to visit the coffee shop in the atrium without meeting a half dozen of my colleagues; not infrequently these chance encounters result in very useful discussions.

Other, smaller-scale examples can be found throughout the buildings. A stairway that reminds one of an Escher drawing connects two floors of molecular biologists, achieving the goal of “horizontal integration.” A similar two-story light well/staircase connects two floors of the Materials Science Institute. These “connectors” attract people for a variety of reasons: the quality of the space, the fact that many administrative offices, seminar rooms and other shared spaces open directly onto these connectors and the fact that many of the hallways in the buildings are actually open to these spaces.

Moreover, the architectural quality of one of the least attractive parts of the campus was tremendously enhanced and is more in keeping with the rest of a very beautiful campus. The campus as a whole gained some very useful public spaces, such as the Willamette Hall atrium and classrooms.

Within the complex, the variety of visual clues, the lack of symmetry and the connections to existing buildings make it easy for a person using the facility to identify exactly where he or she is and give many of the spaces a strong identity. I suspect that over the years, the fact that all four buildings were constructed at the same time will be forgotten and people will tend to think of some of the existing buildings as unimaginative "additions" to the newer structures!

The success of this project underlines the importance of user participation in the planning of university facilities. While such heavy involvement by such a large number of people is time-consuming and at times greatly complicates the lives of administrators, it increases the likelihood of reaching an optimum solution and creates a sense of ownership in the project among its occupants and others on campus who participate in the process.

## Notes

1. For a fuller discussion of these principles, see J. David Rowe's article in this issue.

2. As a professor in the physics department and as the University's vice president for research, I fell into both the first and third groups. I also served on the Science Facilities User Committee.

3. The workshops are described in Buzz Yudell's article in this issue.

## Credits

### Core/Site User Committees:

Harold Babcock, Rod Capaldi, Don Corner, Berndt Crasemann, Rick Dahlquist, Jerry Finrow, Wilmot Gilland, Paul S. Holbo, Joanne Hugi, Eugene Luks, Robert Mazo, Mike Menaker, John Moseley, Aaron Novick, John Reynolds, J. David Rowe, Norman Savage, George Sprague, Kent Stevens, Greg Stickrod, Isabel Stirling, Don Van Houten, Peter von Hippel, Jim Weston, Charles Wright.

### Animal Facilities:

Greg Stickrod.

### Architecture and Allied Arts:

Wilmot Gilland, *Dean*; John Reynolds, Jerry Finrow, Don Corner, Jenny Young, Ronald Lovinger.

### Biology:

Jim Weston, Rod Capaldi, George Sprague, John Postlethwait, Aaron Novick, Bruce Wilson.

### Chemistry:

Rick Dahlquist, Ralph Barnhard, Diane Hawley, Geraldine Richmond, Tom Stevens, Tadmirl Venkatesh, Eric Selker, David Senkovich, Peter von Hippel.

### Computer and Information

#### Science:

Gene Luks, Kent Stevens, Andrzej Prozurowski, Steve Fickas.

### Geology:

Sam Boggs, Gordon Goles, Darby Dyar, Gene Humphreys, Dana Johnston, William Orr, Mark Reed, Greg Retallack, Jack Rice, Norman Savage, Harve Waff.

### Institute of Theoretical Science:

Robert Mazo, Rudolph Hwa, Nilenda Deshpande.

### Museum of Natural History:

Don Dumond, Patricia Krier.

### Physics:

John Moseley, J. David Cohen, Berndt Crasemann, Russell Donnelly, Jack Farley, Marvin Girardeau, Roger Haydock, Richard Higgins, James Kemp, Harlan Lefevre, Brian Matthews, David McDaniels, Ira Nolt, Jack Overley, Kwangjai Park, George Rayfield, Jim Remington, David Sokoloff, Davison Soper.

### Science Library:

George Shipman, Isabel Stirling, Patricia Silvernail, Beckie Hoglund.

### Technical Science

#### Administration:

Fred Munz.