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Seattle Community Centers Put Sustainability to the Test

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A set of community centers in Seattle is providing a kind of laboratory experiment in the search for sustainability. The five centers, two completed and three under way, were designed under sustainable “public building guidelines” drafted especially for them.

The experiment was instigated by Seattle architect and environmental consultant Chris Stafford, who has served for 13 years on various environmental committees of the American Institute of Architects at the national level. These committees have become increasingly aggressive and influential, their efforts culminating in the 1993 World Congress of Architects, which had environmental concern as its theme and issued the declaration:

all must participate in the creation of an ecologically sustainable future ... but the integrating professions — architects and engineers, planners and designers — are particularly critical because we are responsible for the impact of what we construct.

Stafford saw the opportunity to apply such exhortations locally in the community center program. He approached the city’s department of parks and recreation, which is administering the program, about inserting considerations of sustainability into the centers’ programming and design. The director agreed to do so if Stafford could provide specific guidelines.

Stafford got funding from the Bonneville Power Administration and Seattle City Light, the local electric utility, and in June 1992 convened a workshop of local and national architectural environmentalists. The result was a 62-page document entitled “Designing with Vision” that was given to each of the community center architects.

Conventional planning and design, the document notes, “often creates a steel, concrete and plastic energy and resource hog.” It calls for nothing less than a “new way of thinking” about building design and use that makes sustainability central. It is peppered with aphorisms and exhortations: “Reduce, reuse, recycle, rethink” and “problems are opportunities, wastes are resources.”

Getting down to specifics, the document establishes performance targets in such areas as overall energy efficiency, including embodied energy considerations; conservation of water and electricity; and environmentally sensitive use of materials. Some of the targets are numerical, represented as a percentage of local or federal energy codes. In the case of energy efficiency, for example, the document calls for beating the codes by 65 percent.

Following the targets, the document presents 30 pages of “strategic advice” subsequently summarized in a checklist. A sampling of the recommendations in the checklist:

Objectives for the site: Provide low-maintenance landscaping and site improvements. Include native, edible, food-producing landscaping. Protect natural site features.

Objectives for structure: Coordinate space functions with site-solar orientation. Define the building envelope using super-insulated roof and walls, high performance glazing and skylights, thermal mass and airlock entry.

To achieve the energy saving target, the checklist suggests considering solar and geothermal energy sources, cogeneration and use of more efficient HVAC systems and lighting hardware.

It calls for use of half recycled and half recyclable building materials and avoidance of old-growth hardwoods and chloro-fluorocarbon products.

The five centers were designed to a common problem adjusted to the individual sites. All will be roughly 19,000 square feet and contain a lobby, multipurpose and activity rooms, a kitchen, a large gymnasium and space for a family counseling and educational center.

In the program, the parks and recreation department recommends the guidelines to the architects but offers its own six-point list of environmental requirements, which emphasizes daylighting, passive heating and natural ventilation. Given a choice between this list or 62 pages of guidelines, it is not hard to guess which got more of



(Opposite page)
Garfield Community Center.
(Miller/Hull)

(Right)
Delridge Community Center.
(Boyle•Wagoner Architects)



the architects' attention. Asked whether the architects were given the guidelines to read or to follow, department spokesman David Takami said, "to follow where possible within the budget," which says it all.

Joy Okazaki, a department project manager on the community centers, acknowledges that "we couldn't afford to make the program a full-scale experiment." She notes that the budget for the centers was established in 1990 as the basis for the tax levy, long before the guidelines were conceived.

The impact of the guidelines has been "not as high as we would have liked," Okazaki says. In some cases, she notes, "the technology wasn't there." In others, products and materials recommended by the guidelines weren't available locally at affordable prices and others (gray water, for example) were ruled out by city codes.

All of the centers have features reflecting the guidelines, but none follow them point by point. The centers are not going to be the "living examples" of the precepts of sustainability that the drafters had hoped.

All are making use of recycled and recyclable materials, which became a requirement on public buildings in Seattle by city ordinance passed while they were in design.

Garfield Community Center, in a mostly minority neighborhood, is the first of the five to be occupied. It is a delightful little building designed by Miller/Hull of Seattle. The architects have deftly used inexpensive and

durable materials. The forms are strong and simple, the colors cheerful and there is an abundance of light and volume inside.

The department offers a lengthy list of the building's environmental features, starting with three in the area of recycling: "Use of recycled materials in construction; recycling of construction debris and vegetation for use in this and other projects" and training programs in recycling for the center's staff and users.

Specifically, fly ash made from soot was added to the concrete mixture, reducing the amount of cement and aggregate needed. Recycled gypsum and paper were used in the drywall; ceramic tiles that brighten the masonry contain 50 percent recycled glass and acoustic ceiling tiles contain 70 percent recycled wood fiber.

Low-flow plumbing fixtures are used to conserve water and the department has installed a central energy management control system to monitor heating and ventilation, reducing usage whenever the center is closed. Building orientation maximizes natural ventilating and daylighting and most windows are operable.

How many of these features can be traced to the guidelines? The answer is complicated by the fact that Garfield was well into construction when they were drafted. Principal architect Robert Hull says that the guidelines would have been followed more systematically if they had been around earlier. As it is, he finds it difficult to

identify specific design decisions that they influenced.

In general, however, the guidelines did encourage thinking about sustainability and made the public client more receptive to environmental features in design.

Stafford, for his part, feels that Miller/Hull was more receptive to the guidelines than the architects of the other centers and that Garfield pays more attention to sustainability than the other centers will. "One out of five isn't bad," he says of his experiment. "It would be worthwhile if we changed just one person's mind."

If it is difficult to determine how much the guidelines changed the design of the centers, they had a tangible impact upon the client. Some form of sustainability requirements are now part of all parks and recreation building projects and the energy management control system is being applied to both new construction and retrofits.

The department also included Stafford on the value engineering panel for the community centers with results that surprised him. Once he explained the concept of sustainability to the maintenance and operations people on the panel, they became his allies. "It's a very attractive idea when properly understood," Stafford says contentedly, noting that 300 copies of the guidelines have been requested by architects, public officials and others from Austin, Texas, to Auckland, New Zealand.