

WHAT WORKS - A PKAL ESSAY

THE BASICS OF FACILITY CONSTRUCTION

Recommendations

Develop or update several plans to analyze current conditions and assess future needs prior to facility construction. Several preliminary steps must be taken to ensure that a new facility meets the needs of the department. The steps should include reviewing or constructing several plans that will guide facility construction. The college/department should:

- ♦ plan for the new facility independent of the existing plans because the vision for the building and the assumptions upon which the previous plans were made may have changed
- ♦ review and confirm their comprehensive academic plan to establish the importance of science education on the campus, and to affirm the college's commitment to become a comprehensive institution
- ♦ update their facilities master plan to ensure that the location and orientation of the new science facility reflects the importance of science education to the institution and the community as a whole
- ♦ update or institute an instructional technology plan to ensure that the facility will meet the current and future IT needs of the science department
- ♦ develop a strategic plan to guide facility development to ensure that the facility meets the needs of the department in terms of pedagogical support, technological need and departmental priorities.

Recognize and prepare for the cost of constructing and equipping a state-of-the-art facility. Science buildings are expensive to equip as scientific equipment (microscopes, etc.) is very expensive and audio-visual equipment can cost more than \$40,000 per lab or classroom. Further, new faculty and staff must come with a new facility and space must be allocated for future growth of departments. Laboratory support must not be overlooked when planning for new staff in the facility.

The science department should develop grant proposals to help equip the building as well as support innovative teaching techniques. Both can be used to generate funding for the venture. The department is currently employing some innovative teaching strategies that may form the basis for an NSF proposal, or the department may devise some new innovations to incorporate into the building design which can also form the basis of a proposal. Innovation should be encouraged not only for its own sake, but because of the potential benefits to the building project.

BACKGROUND

This small college on the west coast wishes to construct a new science facility. The consultants concluded that the college should develop comprehensive plans, establish working relationships within the campus and between the campus and the surrounding community, design the facility to accommodate trends in science education and adequately prepare to finance this large-scale project.



THE BASICS OF FACILITY CONSTRUCTION

Establish working relationships within the intra-campus community as well as between the campus and the surrounding community. Prior to construction, relationships must be cultivated to ensure that all needs are met. Collaboration ensures that one department is not elevated at the expense of others. It also ensures that the administration and faculty are on the same page throughout the planning process. The campus and the community will embrace the facility if all participants are involved in the process. Cooperation is facilitated by:

- ♦ regular dialogs with administrators and trustees to ensure that faculty can express departmental needs and justify programming needs and inevitable changes in the building plan before miscommunications occur
- ♦ developing a sense of collaboration among science faculty within the district
- ♦ appointing a faculty shepherd from within the department to interact with construction companies as well as administrators to communicate departmental desires to all parties
- ♦ building political support for the project by communicating the college's vision for the future to the local community
- ♦ courting local industries as potential donors for the project, if not for actual building costs, perhaps the industries could be encouraged to equip labs, fund a science attraction or contribute scientific artwork.

Design the facility to accommodate future trends in science education. New facilities must incorporate several design features in order to accommodate evolving teaching methods. Classrooms and labs need to serve the interdisciplinary nature of today's science courses and therefore, flexibility is a must. The facility should be designed:

- ♦ for flexibility now and in the future to accommodate many teaching and learning styles, combining lecture and laboratory functions in one location
- ♦ for collaborative learning which requires larger classrooms than traditionally built, 1400-1500 square feet is required for labs accommodating 24 students
- ♦ with adequate "soft space" which includes enlarged stairway landings and landscaping and seating in outdoor spaces, such spaces are critical for developing a community of scientific scholarship
- ♦ to accommodate spaces for faculty development and instructional support, spaces such as stockrooms and prep rooms to facilitate and enhance teaching and learning
- ♦ to accommodate a student study room, a departmental office and an adjunct faculty office, all of which enhances community development as well as collaboration between students and faculty

- ♦ with a science-themed attraction to enhance K-12 and community tours to increase the connection to the community, a well-designed attraction also enhances the scientific literacy of visiting students along with the department's students. ■