June 15, 1999
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Interim Dean Andras Szeri
Office of the Dean
College of Engineering
University of Delaware
Newark, Delaware 19716-3101

Re: Review of the Department of Civil and Environmental Engineering (DRAFT)

Dear Dean Szeri:

The Visiting Committee for the Department of Civil and Environmental Engineering met on the main campus of the University on May 20-21, 1999. The meeting was attended by members Dimaggio, Duffield, Harbeson, Lue-Hing, Mei, O’Melia, and Vasuki. This letter constitutes our report to you. In it we focus on three areas: (1) strengths, (2) problems, and (3) recommendations.

Strengths

(1) College. The University of Delaware has embarked on a project to develop a modern, state-of-the-art College of Engineering. Very substantial additions have been made in faculty size and in space to the College. Additional growth is underway. The human and physical resources of the College are excellent.

(2) Departmental leadership. The departmental chair, Dr. Chin-Pao Huang, provides active and effective leadership for the Department, including the development of collaborations and collegiality within the Department.

(3) Faculty. The Department is comprised, in general, of young, aggressive, research-oriented faculty members.

(4) Facilities. Within the Department, the recent renovations to the Environmental Engineering laboratories are excellent [more on other facilities in the department is provided subsequently in the sections titled “Problems” and “Recommendations”].

(5) Planning. The chair and the faculty are to be commended for making an excellent start on a Strategic Plan for the Department. Additional comments are given below in the sections titled “Problems” and “Recommendations”.

(6) *Areas of excellence.* The coastal and oceanographic engineering group has very active faculty members, excellent experimental facilities, and good funding; it is one of the best in the Nation. The Infrastructure Initiative involving the structural, materials, and geotechnical research teams is a model for cooperation and partnership with industry, government, and the successful Center for Composite Materials. The environmental engineering group is particularly strong in hazardous waste treatment and remediation and in environmental chemistry.

(7) *Outreach.* The Engineering Outreach Program is an emerging program with great potential for satisfying a need for continuing education in the community of practicing engineers in Delaware and in portions of New Jersey, Pennsylvania, and Maryland.

(8) *Support staff.* The departmental support staff are recognized for their cooperative and positive attitude in working as a team. The positive atmosphere that is developed complements the strong technical capabilities of the academic professionals.

**Problems**

(1) *Space.* With the exceptions of the newly renovated laboratories in environmental engineering and the facilities of the coastal and oceanographic engineering group, the laboratories of the Department are inadequate in size and in quality. In addition, at the time of the Committee's visit, there were no plans or funds committed to renovating the space to be occupied by the Department as programs in other departments leave Du Pont Hall and move to new facilities. Computer-equipped classrooms and student study areas are inadequate. In the judgment of the Visiting Committee, the quality and quantity of much of the Department's space a very serious problem and is its most urgent concern. In this important aspect it does not compare well with departments of civil and environmental engineering at other universities, nor does it compare well with departments in other fields within the School of Engineering.

(2) *Planning.* As stated previously, the Department is to be commended for initiating a strategic planning process. Since the College of Engineering has apparently not begun systematic development of a Strategic Plan for the College, this initiative by the Department is particularly commendable. Nevertheless, the Committee concludes that the Department has some additional work to do in its planning. Strategic plans often include vision and mission statements, goals, action items to accomplish these goals, metrics by which to assess progress towards goals, assignment of responsibility to specific persons to accomplish them, and a scheduled periodic reassessment. Some of these components remain to be incorporated into the Department's plan.

(3) *Staff.* There is general agreement among the faculty that the Department needs additional support staff - professional, technical, and secretarial. The Department provides a considerable part of the funding for the present staff, funding that could be used for other needs such as graduate student support. Support from the College for support staff is considered to be seriously inadequate. In the Department's view, such funds are allocated on a historical basis without assessment of present requirements. Furthermore, it is the Department's view that this funding is not done equitably among
the several departments of the School. The Dean of Engineering and the Provost have a different view of these matters. Recommendations are provided below.

(4) Faculty retention. The Department has been able to recruit excellent new faculty members. One or two of these new faculty have recently left to accept offers at other universities. The Department, with a very good record in attracting new faculty, is concerned about retaining them. Salary does not appear to be an issue. Suggestions are given below.

(5) Ranking. The Department considers that its position in national rankings of departments of civil and environmental engineering is substantially lower than its capabilities merit. The Committee agrees. Suggestions are given below.

Recommendations

(1) Space. It is imperative that the College provide funding to renovate space in Du Pont Hall that is being made available to the Department. It is also essential that the structural, materials, and geotechnical laboratory facilities be expanded and improved. Computer-equipped teaching facilities and student study areas require substantial improvement. It is the Committee’s judgment that this Department cannot attain the ranking and visibility that it merits without significant improvement in the facilities available to it.

(2) Planning. The Department should actively continue its planning process. A vision statement would be helpful. The two goals in the present plan address rankings only. These should be reexamined and others added to develop a set of goals that is much more comprehensive. Steps to achieve these goals should be formulated, metrics established where appropriate to provide an assessment of progress, and individuals given responsibility to work toward them. External review is helpful. One possibility is to have the Visiting Committee consider a revised Departmental Strategic Plan next year and then biannually thereafter.

The Department appears to be leading the College in the planning process. It is very important to the Department of Civil and Environmental Engineering and to other departments in the College that the College of Engineering develop its own comprehensive Strategic Plan in collaboration with the departments.

(3) Staff. Two recommendations are made here. First, the Department should assess its needs for support staff comprehensively across all of its components and functions. This could be included as a part of the strategic planning process. Second, the Dean should make transparent the routine budgetary arrangements of the Administration with all of the departments of the College. There appear to be significant difficulties in communication between the Dean and the Department on these issues and also, probably, among the several departments of the College. With a plan by the Department and a transparent budgetary process, the difficulties that the Department faces in supporting its staff would at the very least be understood and possibly even be resolved.
(4) **Collaborations.** Interdisciplinary activities should be expanded. While the Department has a good record of collaboration with others within and outside of the College, some improvements are needed. Three of many possibilities are given here. It is very important that the Department participate in the State’s initiatives in biotechnology. This collaboration can probably best be initiated by faculty in the environmental engineering group. Additional collaboration between the coastal and oceanographic engineering group and the College of Marine Science would be beneficial. Finally, interaction with State agencies on a broad range of civil and environmental engineering issues is encouraged.

(5) **Faculty retention.** Good faculty may leave good institutions for a myriad of reasons; there is no complete solution to the problem of retaining good faculty. Two suggestions are made here. First, the facilities available in several areas of the Department are simply not competitive with those at most other major institutions. Addressing inadequacies in the Department’s facilities can be expected to improve the Department’s ability to retain excellent faculty as well as recruit outstanding new faculty and graduate students. Second, it is suggested that the College develop short-term endowed chairs for untenured faculty. These appointments would be for two to three years. They would bring significant prestige and some funding to selected untenured faculty members. Such an honor could be a significant factor in faculty retention.

(6) **Ranking.** It is the opinion of the Committee that the Department is overly concerned with rankings and strategies to raise its standing within them. This is understandable, because the Department clearly does not receive the national and international renown that it deserves. Nevertheless, it is recommended that the Department focus less on the details of rankings and more in the development and implementation of its Strategic Plan. Enhanced rankings can be expected to follow.

(7) **Public relations.** The Department needs a more extensive public relations and marketing program, both internally and externally. The strong assets provided by the faculty and support staff in the Department should develop a focused and long range communication program.

We appreciate the opportunity to be of some assistance to the Department for its continued success. If there are any questions regarding this report, we will be more than pleased to have further discussions on the topics.

Sincerely yours,

Charles R. O'Melia
Chair, Visiting Committee