



UNIVERSITY OF WASHINGTON  
*The Graduate School*  
*G-1 Communications*  
*Box 353770*  
*Seattle, Washington 98195-3770*

*Telephone: (206)543-5900*

*Fax: (206)685-3234*

December 22, 2012

To: Matt O'Donnell, Dean, College of Engineering

From: Gary Farris, Interim Dean

Rebecca Aanerud, Associate Dean for Academic Affairs

RE: Review of the Department of Civil & Environmental Engineering (2011-2012)

This memo outlines the recommendations from the review of the Department of Civil and Environmental Engineering. Detailed comments on the program can be found in the documents that were part of the following formal review proceedings:

- Charge meeting between review committee, department, and administrators (October 27, 2011)
- Civil & Environmental Engineering self-study (January 11, 2012)
- Site visit (March 5-6, 2012)
- Graduate & Professional Student Senate Report (March 13, 2012)
- Review committee report (April 9, 2012)
- Civil & Environmental Engineering response to the committee report (May 14, 2012)
- Graduate School Council consideration of review (November 1, 2012)

The review committee consisted of:

Paul D. Quay, Professor, UW Oceanography (Committee Chair)

Clare Ryan, Professor, UW Forest Resources

Harold Force, President, Force Construction Company

C. Michael Walton, Professor, Department of Civil Engineering, University of Texas-Austin

The department offers the Bachelor of Science in Civil Engineering, Master of Science in Engineering, Master of Science in Civil Engineering, Master of Science, and Doctor of Philosophy (Ph.D.). The Master of Sustainable Transportation, also offered by the department, was approved for Autumn Quarter 2011 and is scheduled for its independent five year review in 2016-2017.

A subcommittee of the Graduate School Council presented findings and recommendations to the full Council at its meeting on November 1, 2012. After discussion, Council recommended submission of a strategic planning document to the Dean of the College of Engineering, with copy to the Graduate School Council, by end of Autumn Quarter 2013. Upon receipt of the document, Council will make a recommendation of the timeline for the next departmental program review. Specific comments and recommendations regarding the department and its degree programs include the following:

### Program Strengths

Civil and Environmental Engineering (CEE) is a strong department with solid faculty and staff and excellent undergraduate and graduate educational programs that are in high demand.

- *Leadership.* The department has entered a period of stability since the current chair took charge in 2009. The chair is trusted by departmental faculty and staff and viewed as being open and communicative, willing to tackle contentious issues, and interested in developing a vision for the department.
- *High Student Demand and Societal Need.* There is strong student and employer demand for CEE degrees and graduates. The number of incoming freshman interested in CEE as a major exceed by six times the department's capacity of approximately 100 students/year, and in the typical year the department turns away about 50 juniors seeking to become CEE majors. Student and employment demand is expected to increase in the future.
- *Faculty and Staff.* Faculty of all ranks are a notable asset to the department, and overall faculty morale is positive. The tenured faculty consistently praised the quality of the recent faculty hires, and their increased gender diversity better reflects the student demographic. Without reservation the staff are dedicated and loyal members of the departmental team.
- *Educational Program.* CEE does an excellent job of preparing undergraduate students for the certification and licensing exams, with a passing rate well above the national average. The Graduate and Professional Student (GPSS) Survey reflected that 89% of the respondents considered the CEE academic standards and faculty to be very good or excellent. The department has been nationally ranked in top ten of similarly sized CEE departments.
- *Revenue Generating Programs.* CEE has demonstrated the potential to generate substantial revenue through the implementation of a professional master's program and online certificate programs. These revenue sources will be critical to support growth within the department.

### Challenges & Risks

- *Governance.* The chair relies heavily on input from the Executive Committee for decision making about departmental goals, future direction and implementation strategy. At the time of the review the Executive Committee was heavily populated with senior faculty, leading to an overall perception that departmental governance is concentrated in a few senior faculty and that younger faculty, staff, students, and external stakeholders are not well involved or engaged.
- *Communication.* Both faculty and student groups mentioned a lack of communication between the three major disciplinary groups within the department, and as a result

students and faculty felt that the department was siloed. Based on the review committee report, there appears to be limited faculty involvement in the proposed hiring plan as described in the CEE self-study.

- *Involvement of students and external stakeholders.* There was limited involvement of these groups in the meetings with the review committee during the review.
- *Facilities.* Faculty and staff expressed clearly that inadequate facilities have a major negative impact on the successful functioning of the department. This significantly diminishes the overall quality of the CEE program including instruction, research, departmental operation, and recruitment. The review committee's consensus is that public funding of needed CEE facilities cannot be expected in the foreseeable future and any funding would need to come from other sources.
- *Student support.* A significant concern for junior tenure-track faculty and graduate students was recruitment and continued support of top PhD students. They stressed the need for increased departmental support, specifically graduate fellowships and bridge support for PhD students to successfully complete their degree requirements. The current uncertainty and short cycle of external funding (typically 3 years) results in funding gaps and shifts in research topics for some MS and PhD students.
- *Balance between MS and Ph.D. students.* Both Associate Professors and Full Professors expressed concern with the balance between MS and PhD students. CEE has turned out strong MS graduates that fill a societal need, and the success of the MS program may be negatively impacted by an emphasis on supporting more PhD students.
- *Graduate Teaching Program.* Based on the GPSS survey review, although graduate students ranked the overall quality of the faculty and program highly, the 'research experience', 'faculty guidance', 'career counseling' and 'sense of community' were ranked significantly lower. Ranking of advice received on practical issues (e.g., writing a resume, searching for a job, preparing for an interview) also received lower ranks (<3% in 'high' category). As noted above, the review committee had little opportunity to meet directly with graduate students to discuss these issues.
- *Undergraduate Teaching Program.* The undergraduate curriculum was currently being restructured as of Spring Quarter 2012, so it is difficult to assess its impact on students and their future learning needs.
- *Undergraduate admissions.* The committee discussed the practice of admitting undergraduates into the CEE program in their junior year. This makes the junior year curriculum very rigid and full for undergraduate students. The review committee did not see materials or discussion of the potential impact of admitting more students before the junior year with regard to curricular flexibility or student recruitment.

### Review Committee Recommendations

The review committee recommended that all departmental degrees maintain continuing status and new programs be considered. They also recommended that the department submit a detailed strategic and business plan to the Dean of the College of Engineering within 18 months. This plan should address the concerns raised in the program review as well as the future direction of the department and the impacts of future growth on the faculty, staff, and students. The plan should be constructed with comprehensive input from faculty, staff, and students with full engagement of external stakeholders. It should include both a long-term vision and a short-term

action plan. Current specific issues to be addressed in the plan include, but are not limited to, the following:

- Improving facilities;
- Improved mentoring of junior faculty and development of future leaders;
- Optimal balance between PhD and MS graduate students;
- Improving engagement of external partners and alumni;
- Impact of admitting majors before the junior year;
- Future hiring plan including role of joint hires;
- Impact of proposed growth plan;
- Strategy for funding growth;
- Increasing departmental support of graduate students;
- Impact of curriculum restructuring on students, faculty and staff;
- Improving career counseling for non-academic positions and practical issues (resume writing, etc.);
- Improving faculty and student interactions between discipline groups;
- Detailed budget plan.

#### Areas of Concurrence and Disagreement

The department addressed the major review committee recommendations point-by-point in its written response. Responses give a summary of what steps have been taken, why certain issues have not been addressed, or describes the misunderstanding or miscommunication between the department and the review committee that led to the specific recommendation. The departmental response does not include a substantial response to the overarching recommendation for strategic planning to be carried out “with comprehensive input from faculty, staff and students with full engagement of external stakeholders.”

#### Graduate School Council Recommendations

The Graduate School Council recognizes the Department of Civil and Environmental Engineering as a strong department with excellent academic programs. There exist some internal and external issues that must be addressed to maintain academic health and excellence.

The Council recommends:

- The department undertake the strategic planning exercise recommended by the review committee, with participation by the entire faculty.
- The outcome of the department’s strategic planning activities should be submitted to the Dean of Engineering, with copy to the Graduate School Council, by the end of Autumn Quarter 2013.
- Upon receipt of documentation related to the strategic planning activities, the Graduate School Council will make a recommendation on the timeline for the next departmental program review.

We concur with the Council’s comments and recommendations.

cc: Ana Mari Cauce, Provost  
Douglas J. Wadden, Executive Vice Provost  
Deborah Wiegand, Assistant Dean, Undergraduate Academic Affairs  
Gregory Miller, Chair, Civil & Environmental Engineering  
Members of the Civil & Environmental Engineering Review Committee  
Members of the Graduate School Council  
David Canfield-Budde, Academic Program Specialist, The Graduate School  
GPSS President