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ΑΝΩΤΑΤΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

HELLENIC REPUBLIC  
**H.Q.A.A.**  
HELLENIC QUALITY ASSURANCE  
AGENCY  
FOR HIGHER EDUCATION

## **EXTERNAL EVALUATION REPORT**

DEPARTMENT of Civil Engineering

UNIVERSITY of Thessaly (Volos)

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### **External Evaluation Committee**

The Committee responsible for the External Evaluation of the **Department of Civil Engineering** of the University/Technical Institution of **Thessaly (Volos)** consisted of the following five (5) expert evaluators drawn from the Registry constituted by the HQAA in accordance with Law 3374/2005:

**1. Prof. Ted Stathopoulos (Coordinator)**

Department of Building, Civil and Environmental Engineering, Concordia University, Montreal, Canada

**2. Prof. Panos D. Prevedouros**

Department of Civil and Environmental Engineering, University of Hawaii, Honolulu, Hawaii, U.S.A.

**3. Prof. Aris P. Georgakakos**

School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, Georgia, U.S.A.

**4. Prof. Dimitrios Kolymbas**

Faculty of Civil Engineering Sciences, University of Innsbruck, Austria

**5. Nick Zygouris**

President of the Association of Civil Engineers of Greece (A.C.E.G.)

## ***Introduction***

### ***I. External Evaluation Procedure***

The external evaluation committee (EEC) visited the site of the Department of Civil Engineering of University of Thessaly (Volos) from 10<sup>th</sup> till 12<sup>th</sup> of January 2011.

In the first day of the visit, the EEC arrived at Volos in late afternoon. After arrival, there was a meeting with two vice rectors of the university, the chairman of the department, the vice chairman, and the majority of the departmental staff. After an informative meeting and open discussion, there was a presentation by the chairman of the Civil Engineering department.

The second day of the visit started with presentations about

1. the undergraduate curriculum;
2. the post graduate curriculum;
3. the research activities; and
4. the department's internal evaluation.

At the end of each presentation, there was a discussion on related topics. During the presentations, several members of the Faculty were present and responded to questions by the EEC.

Subsequently, the EEC visited the department laboratories. In each laboratory, there was a brief presentation of its organization, work, and research activities.

Afterwards, extensive discussions were carried out with:

1. Professors and Associate Professors of the department; and
2. Assistant Professors and Lecturers of the department.

The third day started with a visit to the central library of the University. There was a tour at the library, where the library director presented the facilities to the EEC, followed by discussions with:

1. 5 members (out of 6) of the administrative staff;
2. the 4 members of the technical support staff;
3. 7 (out of approximately 37) non-permanent academic staff according to Greek Law P.D. 407/80;
4. 12 post graduate and PhD students; and
5. 6 undergraduate students.

It is noted that during the meeting of the second day, a group of students protested the concept of external evaluation of the department.

### ***List of reports, documents and other data examined by the Committee***

There were a number of documents submitted to the EEC:

1. course catalogue and program of study;
2. internal evaluation committee (IEC) report, dated November 2009;

3. presentation of the undergraduate curriculum;
4. presentation of the post graduate curriculum;
5. presentation of the research activities of the department;
6. samples of the work by each individual laboratory; and
7. CD with all the presentations made to the EEC.

Additional materials consisted of files with data for each undergraduate and post graduate course. Samples of diploma and PhD theses were also readily accessible.

The EEC was impressed by the exemplary level of cooperation of the chairman and all members of the department met.

### **II. The Internal Evaluation Procedure**

The members of the EEC felt that the evaluation report prepared by the IEC was informative and reflected the current status of the civil engineering department of the University of Thessaly (Volos).

The objectives of the internal evaluation process were met by the department.

### ***A. Curriculum***

The detailed assessment below refers to the undergraduate curriculum.

The post-graduate curriculum is, by its nature, more flexible, and the EEC has the impression that its size, diversity and quality are adequate and appropriate for the acquisition of knowledge and the preparation of students for specialized careers in civil engineering. The collaborative program with a similar department in Grenoble, France is commendable. The recently established (2005) PhD program does not have a set curriculum, but PhD students are advised to take specialty courses depending on their research area. The development of a seminar series is a positive aspect of the post graduate and PhD program.

#### **APPROACH**

The goals of the curriculum are to provide comprehensive knowledge of civil engineering disciplines. The curriculum is consistent with the requirements of this discipline and the international practice for undergraduate education in civil engineering. The curriculum is decided by the participation of all department stakeholders.

The curriculum consists of a sound core of basic courses and four thrust (specialty) areas. It is reviewed by a standing committee on curriculum.

#### **IMPLEMENTATION**

The curriculum appears to be rational, clearly articulated, coherent, and functional. The material and duration of each course appears to be appropriate with a good balance of theory and practice. The material (recommended books, notes, etc.) for each course is appropriate. The delivery of notes and textbooks is late on occasion but the EEC was told that most course notes are available on the web. The curriculum includes a practicum and a diploma thesis.

However, the EEC has identified a number of drawbacks. There is a lack of course prerequisite structure and a limited integrated (capstone) design experience. In addition, the curriculum is long in comparison with peer programs abroad. The EEC is in agreement with the Faculty that the short (2 month) practicum is ineffective.

Another main issue is the number of staff to implement the curriculum. Given the many aspects of Civil Engineering, the utilization of additionally assigned instructors (according to ΠΔ 407) is necessary. In view of the current austerity measures in Greece, a substantial reduction of personnel is already planned. This, however, poses a serious threat for the delivery of the educational programs. It should be stressed that even at the current budgetary levels the staff (regular and 407 personnel) make extraordinary efforts to meet the teaching needs at marginal compensation levels. For several 407 teaching staff, further budgetary reductions would render their involvement impossible undermining curriculum integrity and quality.

In comparison with international academic programs, the lack of graders and teaching assistants is notable.

Issues relating to building size, space adequacy, and other forms of support are discussed in

Part D.

**RESULTS**

In spite of all the aforementioned recent burdens and difficulties, the effectiveness of the undergraduate curriculum is adequate. It should however be taken into account that this conclusion is marginal in the sense that any further reduction of personnel or resources would adversely affect curriculum quality. The quality of the curriculum is partly reflected in that some diploma theses have led to publications in peer reviewed journals.

**IMPROVEMENT**

The department has already made an effort to improve and streamline the curriculum by reducing the undergraduate requirement from 69 to 62 courses. The EEC is in agreement and encourages the implementation of further reduction.

In a future revision of the curriculum the length of each course should be reviewed in detail for potential adjustment.

## ***B. Teaching***

### **APPROACH**

The department is paying adequate attention to its teaching function both at the undergraduate and post-graduate level. The EEC feels that the department has been overall successful in delivering its academic programs to its students. Teaching is based on traditional lectures supplemented by tutorial and laboratory sessions, the number and duration of which vary from course to course. There are also projects, a short period for the practicum, and the diploma or PhD thesis, depending on the academic program. All these components contribute to the delivery of sound academic programs and the EEC feels that the department should be commended for it.

Considering the size of the student body and the recent increase of admissions from 60 to 80 first-year undergraduate students (in spite of the opposite recommendation of the university to the ministry), the teaching staff to student ratio exceeds the previously established adequacy limits. Further increase of admissions, along with a currently expected decrease of the number of teaching and staff positions, is expected to adversely affect the teaching function in more than one area. Indeed, the department suffers from inadequate space, as mentioned in other sections of this report. The long standing previously approved plan for the new building for the department remains idle, and this affects morale.

On a more positive note, there is excellent teacher/student collaboration, which is vital for the operation of the department in fulfilling its teaching objectives. The EEC was convinced that teaching staff is well respected by the students, who feel that their instructors (with some minute exceptions) are available for consultation and very responsive to their issues, be it a simple question, a general or specific discussion on their projects, or consultation on their theses. This cooperation is more pronounced for the regular full-time teaching staff.

Material resources for the delivery of teaching are considered adequate. This includes access to information technology, library facilities, and utilization of modern software enhancing the curriculum and contributing to the teaching function. The examination system is adequate, although allowance for a student to re-take the exam for an infinite number of times is a particularity. In most universities abroad, allowance to take the exam for the same course more than twice requires special circumstances and permission by a university academic committee.

### **IMPLEMENTATION**

Based on the course evaluation results provided in the IEC report and the input the EEC received from students, as well as the course material the department made available to the EEC, the quality of teaching procedures is generally adequate. The quality of teaching material and resources is also comparable with that in similar academic programs outside Greece. The course material is generally brought up-to-date, although the rigidity of the curriculum update process prohibits this renewal from happening more frequently.

The EEC is also favorable to linking research with teaching, which takes place in the department, particularly with the diploma theses, some of which are based on research projects. In this way, students familiarize themselves with research procedures and understanding. This paves the way for those who may decide to follow the graduate

research direction.

Based on the course evaluation results provided in the IEC report, the input received from students and others during the visit, as well as the EEC discussions with the faculty members in the department, it appears that teaching, course content and study material/resources are adequate in most cases. However, the mobility of academic staff and students (exchanges) is limited. A specific comment made by the students was related to the lack of technical visits for educational purposes. The EEC agrees with this suggestion and feels that its implementation would enhance the quality of the program. Furthermore, this activity will counteract the aforementioned drawbacks of the short practicum.

### **RESULTS**

The EEC found out that course evaluations take place electronically for most (but not all) courses with appropriate procedures. However, it is the view of EEC that evaluations must take place for all courses. The majority of course evaluation results appear to be “very good” (i.e., over 4.0 on a 1 to 5 scale) when one looks at them collectively, as indicated in the IEC report (p. 26). Having said this, there are also courses, the teaching of which needs significant improvement. In this regard, the IEC report makes some suggestions, the first of which is the establishment of an annual teaching award. EEC agrees with this recommendation.

Furthermore, the quality of teaching will be enhanced, when the course evaluation results, along with other material relevant to the development, updating and teaching of courses form a substantive rather than a nominal element in the process of faculty member evaluation for promotion and tenure. It should be noted that this recommendation aims at increasing the weight of teaching performance without diminishing that of research, since both teaching and research are the cornerstones of academic life.

The grading of student exams and projects appears reasonable with a flagrant exception, namely the grading of the diploma thesis, in which almost every student is graded with 10. In addition, this grade receives a total weight of 20%, which is clearly disproportionate when compared with the other components of the program. This leads to artificial grade inflation.

Notwithstanding these comments, the grade distribution of graduating students looks reasonable, contrary to the time it takes for students to graduate. A recent rule related to the establishment of a maximum duration of studies (10 years at the undergraduate program) is an improvement.

The department chairman, associate chairman, and graduate program director are dedicated to the enhancement of teaching, in spite of staff, budget, and space shortages.

### **C. Research**

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

#### **APPROACH**

The department research objectives are to (1) engage in cutting edge research in civil engineering disciplines (pertaining to the natural and built environment), and (2) create qualified graduates with the knowledge, skills, and work ethic necessary to continue to advance the state of knowledge and benefit society throughout their career.

The department has initiated internal evaluation procedures and identified research quality measures and standards. According to the IEC report, these measures include (1) peer reviewed publications; (2) peer reviewed conference publications; (3) journal citations; (4) supervised PhD Theses; (5) invitations to serve on international conference steering committees; (6) invitations to serve on journal editorial boards; and (7) externally funded research projects.

#### **IMPLEMENTATION**

The department is keen on promoting research at all educational levels: undergraduate, post-graduate (Master's), and doctoral (PhD). At the *undergraduate level*, research is principally promoted through the diploma thesis. This research experience lasts for one to two semesters and, occasionally, results in comprehensive studies publishable in conferences and journals. Based on the comments of the faculty and students, both groups consider this experience very valuable.

At the *post-graduate level*, graduate students have the option to pursue a course-only track or a course-and-thesis track. Most students prefer the second option, indicating the desire to engage in research. A notable and commendable initiative is the establishment of a collaborative Master's program with a University in Grenoble, France. In addition to providing graduate students with international experience, the program is expected to enhance international research collaborations.

The department's research activities and contributions culminate at the *doctoral level* which was initiated in 2005 and has already started to generate promising results. As indicated by the department, the program currently includes 62 doctoral students. Research activities are mainly computational. Experimental research is carried out in the reinforced concrete structures, geotechnical engineering, and hydromechanics and environmental technology laboratories; and field research in transportation and hydrology. Students and faculty are highly motivated to publish their research results in peer-reviewed scientific and technical journals.

The IEC report refers to 16 laboratories, supported by three permanent laboratory staff: one information technology specialist, one electronics specialist, and one technician for the reinforced concrete laboratory. All three are highly qualified, experienced, and motivated individuals, but they are inadequate to support the range of research activities carried out in the department. The lack of a machinist, a second IT specialist, and two technicians for the geotechnical and hydromechanics and environmental technology laboratories are notable. Based on comments made by faculty and staff, it may be possible to address these staffing needs through redistribution of the existing technical staff within the engineering

school.

The urgent need to upgrade the physical plant of the department is evident and has long been recognized by the University of Thessaly and the School of Engineering. The laboratories are generally inadequate and of an *ad hoc* construction, causing delays and frustration to faculty and students alike. Plans for a new building to house the department have already been drawn, costed, and approved. Construction of the new building, however, has been delayed for several years. The EEC considers the construction of the new building a critical prerequisite for further departmental growth and reputation, and urges the University and the School of Engineering to make the new building a high investment priority. In addition, reorganization of the current research laboratories into larger units associated with the department thrust areas could lead to enhanced research collaborations and more efficient utilization of limited resources.

The procurement and general administrative processes are highly bureaucratic and lead to long and frustrating delays and missed opportunities. The EEC notes the need to streamline the procurement process to facilitate research activities.

The Library facilities and support services exemplify the university aspirations to be among the best Greek universities. Faculty and students enjoy electronic and comprehensive access to the existing literature. The library director deserves high credit for well-run services. However, the library and the current departmental facilities are in direct contrast.

Based on the IEC report statistics, the faculty is making commendable efforts to publish their research in recognized scientific and technical journals. The average number of faculty journal publications stands between one and two journal articles per year. However, the distribution is far from uniform and ranges from zero to four journal articles per faculty per year. The IEC report target is a minimum of two articles per faculty per year, and is currently met or exceeded by about one third of the permanent faculty members.

Particularly important are publications authored jointly by students and faculty. The current rate is 14 journal and 38 conference articles (peer-reviewed) per year, and it is showing a steady rising trend.

Most permanent faculty has authored books and/or comprehensive notes used as texts in courses. The faculty is to be commended for this effort.

The EEC notes the lack of tangible recognition and incentives, such as research awards and additional resources for the most productive researchers.

Despite its young age, the department has been successful in competing for and winning research projects from various sources. As presented to EEC, over the 13 year period from 1998 to 2010, the department acquired 124 basic and applied research projects from European (8 projects; totaling approximately 1 million Euros), Greek (government and industrial sectors; 97 projects totaling approximately 3.4 million Euros); and internal university (19 projects totaling approximately 0.06 million Euros) research programs.

These projects provide valuable (and much appreciated) hands-on research experience for the students, essential financial support for all research personnel; and much needed laboratory resources. They also enable the department to carry out applied research with potential societal impact. A critical constraint in pursuing additional research opportunities is the lack of administrative support personnel which forces the faculty to spend time on clerical tasks rather than on direct research and educational activities.

The EEC views the current funding levels for PhD students as grossly inadequate, as the great majority of students receive no financial support. This situation is critical.

The lack of start-up funds for new faculty members is an impediment in establishing a strong and independent research program and launching a successful career. Currently, peer institutions worldwide provide a total of 30,000 to 50,000 Euros in the first two years.

Research collaborations among faculty are being pursued to a limited extent.

Interdisciplinary collaborations within and outside the department are considered desirable, but are discouraged by rigid program rules which limit course attendance in other civil engineering tracks and/or other university departments. Additionally, the department will benefit by leveraging appropriate European student and research programs (e.g., ERASMUS) that facilitate exchange and cooperation.

A valuable research seminar series does exist, albeit without a meaningful budget. The department and university administration is encouraged to secure the budget for this purpose to enable interaction with researchers in Greek and foreign universities, especially with eminent Greek scientists and engineers abroad.

Likewise, the department website needs to be upgraded to effectively disseminate the faculty and student research contributions and products, and to attract high quality students.

### **RESULTS**

The department research efforts are generally aligned with its stated objectives, but they are severely limited by inadequate laboratory staff, research instrumentation, insufficient operation and maintenance budgets, and inadequate space support.

Research output is described earlier and generally shows that the department's research program is commendable, translating research project findings into publications, having notable societal impact, and exhibiting a positive growth derivative.

Some faculty members have obtained notable national and international research awards and distinctions.

**IMPROVEMENT**

The PhD program is recent and has not had enough time to undergo a comprehensive assessment. However, the EEC views the operation of the PhD program favorably and encourages the department to adopt a process of continuing quality assessment and improvement.

**D. All Other Services**

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

**SUPPORT SERVICES**

Most processes are still done with extensive use of paper forms including individual student enrolment and manual input of grading sheets. However, the EEC was told that both student course enrolment and end-of-semester grading will be done electronically in the next semester. Students and instructors will be able to login and make their selections electronically.

There is an established procedure for the computer based evaluation of courses and summary results can be obtained expeditiously.

The process of travel approval appears to be lengthy, cumbersome and requires extensive paperwork even for travel necessary for the applicant's existing research grants. Perhaps a Travel Committee should be involved in travel approval instead of involving the entire department at its regular monthly meeting.

Grant management and support from the University is limited and centralized. Investigators and their graduate students appear to be the full preparers of research proposals. This is not a best use for top talent.

Procurement for the purchasing of department, research and lab equipment and other needs is directly connected to the ministry through the Procurement Office of the university. Various restrictions make purchases lengthy and in some cases less competitive.

Several individuals indicated that central decisions on staffing are not based on departmental teaching and research needs.

The department has 3 large and 13 small laboratories which exacerbates the pressure on resources. The laboratories often serve as classrooms particularly for elective courses. This relieves pressure from regular classrooms.

The department does not have access to a machine shop. Mechanical engineering *has* a machine shop but civil engineering department makes no use of it because "it is busy with mechanical engineering jobs."

The campus needs a common-use, well equipped and capable machine shop as well as safe and capable heavy lift ability. Some faculty are waiting for weeks for the proper lift to be provided so that they can relocate and position heavy specimens.

Security or other supervision to minimize loitering and illegal smoking is absent.

**LIBRARY and IT**

The website of the school is too basic and needs enrichment. Consistent and comprehensive

faculty member vitae are needed along with lab descriptions and accomplishments. Civil engineering has specialized labs, some of which produce significant research work. These need to be demonstrated on the website. Both the University and the Department websites should present the many positive aspects of a university life at the University of Thessaly in Volos, a city with substantial local culture, high quality of life, and proximity to one of Greece's prime recreational areas, Mount Pelion.

The library is new and large with a highly capable head librarian. A full audiovisual room with two-way sound and picture conferencing is available. Ministry and University support for electronic journals is good with 20,000 journal titles being accessible.

The IT infrastructure of the department is excellent with nearly 100 PCs in the computer and other labs. Some labs operate powerful servers. IT support is inadequate with one full time person being responsible for a very large number of units.

Central support for computer SPAM and viruses appears to be very basic and most faculty and staff appear to "take care" of the problem individually and with individual purchases.

Legal and institutional support for the timely removal and disposal of obsolete equipment is inadequate. Old equipment is piled and stored in otherwise useful space because it cannot be legally discarded. Although all new equipment is labelled and inventoried, nobody conducts any periodic equipment inventory.

### **SPACE and BUILDINGS**

Office space is marginal at the present time only because the department has experienced some reductions in staff combined with inability to fill vacant positions.

Classroom space is hardly adequate, and at the current location there can be no additional enrolment increases. A new building has been in the plans for years but construction has not commenced.

Lab space also accommodates PhD students and course instruction, so the lab utilization is continuous and at times heavy. Additional enrolment of PhD students will likely result in overcrowding.

The overall quality and functionality of the buildings is marginal. One example is the reinforced concrete technology lab with its inadequate low ceiling (which is presently corrected with a partial elevation). This lab lacks overhead cranes for lifting heavy specimens.

### **STUDENT SERVICES and INVOLVEMENT**

Students expressed satisfaction with food and health care services.

Some students complained about the lack of free transport such as a university shuttle.

The notion of formal academic advising of students is absent. The students are not assigned to faculty member to discuss academic and other matters.

The students are represented at the regular department meetings by 9 members, or one

half of the faculty.

**OTHER PERSONNEL CATEGORIES**

The work duties for many of the administrative and support personnel are far removed from their expertise.

Rigid job descriptions do not allow the department and its curriculum and lab activities to evolve, as this would require cumbersome legal proceedings (FEK).

The promotion and tenure process is inadequate and based on general guidelines in a FEK. The same guidelines that apply to liberal arts and medicine, for example, also apply to civil engineering. This is not unusual. What is unusual is the absence of specific promotion and tenure guidelines from the civil engineering department.

***E. Strategic Planning, Perspectives for Improvement and Dealing with Potential Inhibiting Factors***

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

The evaluation process mainly comprised a strategic assessment. In principle, the EEC agrees with the department's short-, medium-, and long-term goals and proposed plans and actions for improvement. However, most of these proposals require significant additional funding which may be difficult to secure under the present economic conditions.

The EEC recommends that this process be followed by the development of a realistic action plan where emerging opportunities of high research and educational value (e.g., niche areas) are identified, prioritized, and used to guide systematic development of the department research and educational programs, as well as faculty and staff.

### ***F. Final Conclusions and recommendations of the EEC***

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

Overall, it is the EEC's view that the department functions adequately in spite of several existing resource constraints and limitations. The chairman, as well as the majority of faculty and staff, is admirable for their commitment and dedication. There is a climate of cooperation and collegiality that is conducive to a stimulating academic life. Specific recommendations to rectify drawbacks have been made in this report. The EEC's major recommendations follow.

#### **GENERAL RECOMMENDATIONS**

The attractiveness of the main cities of Athens and Thessaloniki both in terms of family and professional opportunities creates both a commuting challenge and a revolving door syndrome for regional universities such as Volos. This is not unusual and it is typically counteracted by providing substantive incentives both for relocation and professional commitment to the university. Such incentives are absent, and the EEC recommends that they be provided by the ministry and the university.

An additional recommendation that would strengthen the department would be the identification and support of emerging (niche) areas in civil engineering and related sciences. This effort should be undertaken as part of the strategic planning process and guide the programmatic development of the educational and research programs, as well as human resources in the department.

The procurement and general administrative processes are highly bureaucratic and lead to long and frustrating delays and missed opportunities. The EEC recommends that the university administration streamline the procurement process to facilitate the department research activities.

#### **CURRICULUM AND TEACHING**

The department has already made an effort to improve and streamline the curriculum by reducing the undergraduate requirement from 69 to 62 courses. The EEC is in agreement and encourages the implementation of further reduction.

The lack of course prerequisite structure undermines the value of the curriculum, and the department should establish and enforce a clear course sequence with specific prerequisites.

The EEC recommends that the number of times a student is allowed to take the final exam for the same course be limited according to the practice in universities abroad.

Integrated (capstone) design experience that brings together multiple disciplines and provides the opportunity to interact with professional practice is strongly encouraged.

The EEC recommends that the department either restrict the practice of giving perfect grades to all students for their diploma thesis or reduce its 20% weight; or preferably both.

### **RESEARCH AND GRADUATE PROGRAMS**

The EEC views the current funding levels for PhD students as grossly inadequate, as the great majority of students receive no financial support. This situation is critical and must be urgently addressed through (1) additional internal and external student fellowships, e.g., from the Ministry of Education, IKY, or private foundations; (2) student applications to relevant European programs; and (3) faculty facilitation for the development and submission of research proposals.

A maximum duration of studies should apply to the post-graduate and doctoral programs as for the undergraduate program.

The EEC recommends that the department consider the reorganization of the current research laboratories into larger units associated with the department thrust areas, which could lead to enhanced research collaborations and more efficient utilization of limited resources.

Research collaborations among faculty are being pursued to a limited extent. The EEC encourages further research collaborations through joint proposals, joint supervision of PhD students, faculty and student exchanges, and other means.

### **FACULTY DEVELOPMENT**

The promotion and tenure process is inadequate and requires detailed guidelines by the department so that junior faculty have specific guidance to develop their career path. Furthermore, the quality of teaching will be safeguarded when the course evaluation results from all courses, along with other material relevant to the development, updating and teaching of courses, receive due consideration in the process of faculty member evaluation for promotion and tenure.

The EEC recommends that new faculty members be supported through start-up funds as in most reputable universities. This relatively small investment would be critical for establishing a strong and independent research program and for launching a successful career. Furthermore, the EEC recommends that new faculty members be given lighter teaching and administrative duties for the first two years.

### **RESOURCES**

The department suffers from inadequate space. The long standing previously approved plan for the new building remains idle and this affects the morale of the department. The EEC considers the construction of the new building a critical prerequisite for further departmental growth and reputation, and recommends that the University and the School

of Engineering make the new building a priority.

The department is in urgent need for a machinist, a second IT specialist, and two technicians for the geotechnical and hydromechanics and environmental technology laboratories. The EEC recommends that these staff positions be filled as soon as possible, as they place serious constraints in the department's research and educational effectiveness and productivity. Based on comments made by faculty and staff, it may be possible to address some of these staffing needs through redistribution of the existing technical staff within the university.

**RECOMMENDATION TO HQAA:**

The EEC strongly recommends to HQAA that the department visit schedule of the EEC include a debriefing with the rector and/or vice rectors at the conclusion of the site visit.

## The Members of the Committee

	Name and Surname	Signature
1.	___Ted Stathopoulos_____	_____
2.	___Panos D. Prevedouros_____	_____
3.	___Aris P. Georgakakos_____	_____
4.	___Dimitrios Kolymbas_____	_____
5.	___Nick Zygouris_____	_____