03/183

1 December 2003

Professor Jenny Strong
President
Academic Board

Dear Professor Strong

Re: Review of the School of Engineering and the Response of the School

The review of the School of Engineering is the first review of a school with which I have been involved. The inclusion of four external members enabled a thorough, objective and independent review of what is one of the University’s largest and most complex schools.

I strongly endorse the review recommendations and will work closely with the School to assist with the implementation that is required. The overriding characteristic of the advice offered by the review panel is that the School is responsible for its future. The encouragement to remove the disciplinary boundaries as far as is possible is the key to reinvigorating the teaching and research culture of the School and to capitalising on its key strengths. It is particularly pleasing that the excellence sustained by many areas of the school is recognised in the review report.

I commend the vigorous engagement with the review recommendations by the Head of School, Professor Simmons, and by the School Executive. The School has embraced the need for structural adjustment that will enable the full implementation of the “One School” policy.

Possibly, the most contentious recommendations are those concerning the relationships between school and research centres. The external members of the review panel were concerned by the number of independent centres and the divide that seems to be growing between the School and the Centres that derive from its disciplines. This is a matter of wider concern for the University.

In summary, I strongly support the report of the Review of the School of Engineering and I fully endorse the response of the School to the Standing Committee.

Yours sincerely

Michael Keniger
Executive Dean

Cc: Professor John Simmons, Head, School of Engineering
School of Engineering

School Response to Standing Committee on Report by Review Committee

10 November 2003

Summary

The Review Committee has stated that it “was generally very favourably impressed with the quality of undergraduate education, and postgraduate training and research”. The School is encouraged greatly by this finding, yet we acknowledge the identified areas for improvement and the significant challenges posed to us in:

- Operating the School as a single unit
- Balancing the budget
- Reducing the proportion of the budget committed to salaries
- Drawing strength from well integrated research centre activity
- Establishing world leadership in education for the mining and mineral processing industry
- Rationalising course offerings
- Expanding postgraduate coursework offerings
- Developing new areas of national research strength in mechanical engineering
- Developing forward-looking innovative research programs in civil engineering

The University has informally found a crude measure of its excellent performance in the ratio of the number of commendations to recommendations in the recent AUQA Quality Audit Report. The Review of the School of Engineering contains 15 recommendations and the following commendations.

- The School of Engineering has internationally competitive strengths in numerous areas.
- The Committee endorses the concept of “One School” proposed by the School of Engineering.
- The School should build on its excellence in teaching and learning by . . . . . .
- The School has made a long standing commitment to income generation by attracting full fee paying students largely from South East Asia.
- The existing in-division strength in mineral processing (pyrometallurgy) is of high standing.
- The appointment of Professor Mike Hood as Professor of Mining Engineering has been a very positive step . . . .
- The School’s ambition to be the Australian leader in engineering education is commended. Current and planned initiatives (Catalyst Centre, Undergraduate Site Learning program and Project Centred Learning) support this objective.
- Overall, undergraduate students expressed strong satisfaction with the engineering programs and this is reflected in the course evaluation data supplied.
- The School attracts students of high calibre . . . .
- Overall, postgraduate students reported positively on their experiences.
- Overall, research performance in the School is strong with many areas of high international standing.
- The chemical engineering discipline is outstanding nationally and internationally . . . . research performance is very high by all measures . . . .
- Materials engineering . . . . are also outstanding . . . .
- Environmental engineering as a new grouping are performing well by all measures of research output.
- The mechanical engineering discipline has a unique strength in Hypersonics, an area in which it has become a world leader.
- Smart machines is a growing area showing considerable potential.
• Civil engineering is a mature discipline which, by conventional research measures, is performing reasonably well.
• The committee wishes to commend the efforts of the School in internationalisation in teaching and learning and research linkages.
• The School . . . has been a pioneer in attracting international undergraduates . . . .
• International links in research are excellent.

We are encouraged by the faith the Review Committee has shown in the School’s ability to respond to the challenges set in the Report. The Committee has pointed the way to a higher level of operation and achievement, while trusting the School to handle the details. The Report is far from being prescriptive. We are also pleased with the resounding endorsement given to the School’s own One School vision.

The Review has been a timely and positive experience for the School. We greatly appreciate the efforts and foresight of the Committee. Work has already begun on addressing the Review recommendations. A productive retreat has just been held (6-7 November) for a large part of the School.

Specific comments on the recommendations follow.

One School

Recommendation 1:
The Review Committee recommends the abolition of the current divisional structure and that the School operate as a single unit with a single Head of Engineering. The Review Committee recommends that the removal of the divisional structure be implemented by January 2005.

The School supports this recommendation in principle but realises that there will be challenges in abolishing the divisions as recommended while "retaining disciplinary identities for students, staff and external constituents" which is "strongly encouraged" in the Report. We plan to implement change by January 2004, one year early.

Recommendation 2:
The Review Committee recommends that the single new School structure be managed through an Executive Committee based on functional lines with, for example, representatives for Teaching and Learning, Postgraduate Learning, Research and Strategic Planning. The Review Committee expressly would not wish to see an Executive Committee based around pre-existing divisional groups.

The School supports this recommendation because it is a recommendation for the status quo. The School’s current Management team (or Executive) is in no way based around “pre-existing divisional groups”. Presumably, the Review Committee is endorsing the present executive structure rather than misunderstanding it. This said, there is scope for expanding the Executive along the lines suggested. This will be done from January 2004.
Finances and Resources

Recommendation 3:
The Review Committee recommends that the full implementation of the One School structure be facilitated with the assistance of structural adjustment funding.

The School supports this recommendation and notes the elaboration in the text of the Review Report, namely “..... the process of change needs to be supported by the University through an allocation of funds .....” and “..... the School will be required to change the staffing profile and to provide incentives for people to make the necessary changes”. The School is already working on a number of scenarios with a view to putting a comprehensive submission to the University in late December 2003.

Recommendation 4:
The Review Committee recommends that the costs and incomes associated with all activities be made transparent.

The School strongly supports this recommendation and will implement it fully from the start of 2004.

Recommendation 5:
The Review Committee recommends that the School pursue new sources of income and increased levels from new and existing sources to address the serious financial position.

The School supports this recommendation, albeit with reservations about the potential for growth from some of the suggested sources. A significant growth in international fee income has already been factored into the forward budget estimates, and a considerable effort with the Development Office a few years ago produced nothing by way of substantial benefaction from industry. (Industry already supports the School through funded positions (Thiess, Minerals Council of Australia and a number of scholarships and prizes). The School will consider the possibility of a ‘School Foundation’ in 2004. The new income source with the most potential is postgraduate coursework. Certainly, we need to more fully cost our research proposals. All of the above will be pursued, beginning in January 2004.

Reference is made in the recommendation to the School’s “serious financial position”. The University’s guidelines for preparation of a School’s submission to a review required the School of Engineering to benchmark against a number of other Australian universities and to report any changes to funding formulas. This we did – and the School’s unfavourable position compared with other Go8 Schools of Engineering remains a matter of fact.

Relationships between the School and Centres

Recommendation 6:
The Review Committee recommends that Faculty Centres outside the School, University Centres and Institutes, be properly interfaced with School activities. Faculty Centres that have grown out of the School or the departments that pre-dated the School should be reinstated within the School structure or disbanded.
This is a recommendation to the University and the Faculty and is strongly supported by the School. It is not inconsistent with the sentiment behind the recent AUQA Recommendation 8, namely, “That in line with expressed intent, UQ better define the relation between research centres and schools in order that the presence of the centres and their staff enhance the student experience and the research opportunities of non-centre staff”.

The School plans to work closely on this recommendation in January 2004 with the Executive Dean and the heads of relevant centres, beginning in November 2003.

**Recommendation 7:**
The Review Committee recommends that the University establish no new Faculty centres. Where the establishment of university-wide institutes is justified, that specific actions be taken to ensure that such Institutes are fully complementary to School goals.

This is a recommendation to the University and the Faculty and is strongly supported by the School. Again, this is not inconsistent with AUQA Recommendation 8.

**Mining and Mineral Processing**

**Recommendation 8:**
The Review Committee recommends that the focus for mining and mineral processing at the University of Queensland be firmly placed within the School of Engineering.

The School strongly supports this recommendation and will begin work with the Director of SMI in early 2004 to achieve the best outcome.

**Recommendation 9:**
The Review Committee recommends that the Executive Dean and the Head of school encourage the Director or an equivalent senior staff member of the JKMRC to accept a fractional appointment within the School, along similar lines and with similar intent to the recent appointment in Mining Engineering.

The School strongly supports this recommendation and the Head of School will negotiate it with the Director of SMI in early 2004.

**Recommendation 10:**
The Review Committee recommends that the School explore and develop the potential for substantially increased internationalisation of teaching and learning in the mining and minerals processing area.

The School supports this recommendation, although the way forward will only become clear when relationships with the non-school centres are resolved and a proposal for a ‘virtual’ national mining school is worked through in early 2004.
Teaching and Learning

Recommendation 11:
The Review Committee recommends that the School reduce course offerings through a process of rationalisation of the delivery of courses covering similar areas of study in all degree programs offered by the School. A program to implement greater utilisation of common laboratory facilities should also be considered.

The School strongly supports this recommendation, both components of it being in the School’s Strategic Plan. Sharing of a single fluid mechanics laboratory across degree programs has begun in semester 2 of this year. Further rationalisation will be introduced in 2005 course offerings.

Recommendation 12:
The Review Committee recommends that the School establish a suite of modular postgraduate coursework offerings in areas of research strength. Collaboration at the postgraduate level with other groups within and beyond this University should be undertaken.

The School strongly supports this recommendation but recognises that we shall have to be quite savvy in our approach because there is not likely to be a ‘pot of gold’ waiting for us. By early 2004 the School will have developed a postgraduate coursework plan based on a strategic market analysis.

Recommendation 13:
The Review Committee recommends that the Head of School ensure that University policies in relation to the supervision, support and monitoring of research students are followed.

The School supports this recommendation and will introduce new procedures in 2004.

Research Quality

Recommendation 14:
The Review Committee recommends that the School needs to grow at least two new areas of national research strength in mechanical engineering.

The School supports this recommendation. A concentration on clean energy is in the School’s Strategic Plan and an appointment has very recently been made in the area. Digital manufacturing and biomedical engineering are emerging research strengths that might have significant mechanical engineering involvement. More strategic planning will be done in early 2004.

Recommendation 15:
The Review Committee recommends that the School of Engineering build on strong industry links and develop forward-looking innovative research programmes in civil engineering; potential areas could include infrastructure, transport and water.
The School supports this recommendation. Research strength in water is being developed through the formation of the School Centre for Water Futures. More strategic planning will be done in early 2004.

John M Simmons
10 November 2003