

PERIODIC REVIEW OF CONSTRUCTION MANAGEMENT AND ENGINEERING

INTRODUCTION

- 1 An internal review of programmes in the Department of Construction Management and Engineering was held on 27 and 28 March 2019. The members of the Panel were:
 - a. Dr Katrina Bicknell, Teaching and Learning Dean (*Chair*)
 - b. Dr Simon Smith, Senior Lecturer, University of Edinburgh (*external member, subject specialist*)
 - c. Dr Fred Sherratt, Senior Lecturer, Anglia Ruskin University (*external member, subject specialist*)
 - d. Mr Jon Spencer-Hall, Core Five (*external professional member*)
 - e. Dr Philippa Cranwell, School of Chemistry, Food and Pharmacy (*internal member*)
 - f. Dr Kate Harvey, School of Psychology and Clinical Language Sciences (*internal member*)
 - g. Ms Hazel Lewis-Farley, Part 3, BA Art, University of Reading (*student member*)
 - h. Ms Jennie Chetcuti, Centre for Quality Support and Development (*Secretary*).
- 2 The Panel met the following members of staff:
 - a. Dr Tim Lees (*School Director of Teaching and Learning*)
 - b. Professor John Connaughton (*Head of Department*)
 - c. Nur Amirah Abd Wahab (*BIM Tutor, UoRM*)
 - d. Dr Tabarak Ballal (*Programme Director, MSc Construction Management & International Development*)
 - e. Dr Pippa Boyd (*Teaching Fellow*)
 - f. Ms Aly Chesswas (*Programme Manager, Support Centre*)
 - g. Dr Ruth Dowsett (*Probationary Lecturer*)
 - h. Dr Emmanuel Essah (*Director of Undergraduate Studies*)
 - i. Dr Martin Green (*Teaching Fellow*)
 - j. Dr Maizon Hashim (*Lecturer, UoRM*)

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- k. Professor Will Hughes (*Director of Taught Postgraduate Studies*)
 - l. Dr Katherine Hyde (*School Director of Academic Tutoring*)
 - m. Dr Shabnam Kabiri (*Examinations Officer and Probationary Lecturer*)
 - n. Dr Faris Khamidi (*Head of Section, UoRM*)
 - o. Dr Mustafa Klufallah (*Lecturer, UoRM*)
 - p. Dr Noor Azeyah Khiyon (*Lead of Undergraduate Studies and Senior Tutor Representative, UoRM*)
 - q. Dr Sivaraman Kuppusamy (*Director of Taught Postgraduate Studies, UoRM*)
 - r. Yusuf Ibraheem (*Lecturer, UoRM*)
 - s. Ms Celine Lee Cen Ying (*Lecturer and Careers Coordinator, UoRM*)
 - t. Dr Colm Lundrigan (*Probationary Lecturer*)
 - u. Dr Zhiwen (Vincent) Luo (*Departmental Director of Academic Tutoring and Study Abroad Coordinator*)
 - v. Dr Laura Maftei (*Probationary Lecturer*)
 - w. Dr Lawrence Mbugwa (*Probationary Lecturer and Quantity Surveying Lead*)
 - x. Ms Susanna McFeely (*Head of Edith Morley and London Road Support Centres*)
 - y. Ms Suzie Mellor (*Disability Representative*)
 - z. Dr Eugene Mohareb (*Co-Director of Inclusivity and Diversity*)
 - aa. Dr Fara Diva Mustapa (*Lecturer, UoRM*)
 - bb. Dr Dragana Nikolic (*Programme Director, MSc Information Management for Design, Construction and Operation*)
 - cc. Dr Hiral Patel (*Teaching Fellow*)
 - dd. Dr Michael Peters (*Admissions Officer*)
 - ee. Dr Florence Phua (*Programme Director, MSc Construction Cost Management*)
 - ff. Ms Sarah Stuckey (*Student Advice and Support Manager, Support Centre*)
 - gg. Mr Adrian Tagg (*Careers Coordinator and Building Surveying Lead*)
 - hh. Dr Bruno Lot Tanko (*Lecturer, UoRM*)
 - ii. Kalai Arasi Thaluma Rethinam (*Programme Administrator, UoRM*)
 - jj. Dr Maria Vahdati (*Programme Director, MSc Renewable Energy: Technology and Sustainability and Co-Director of Inclusivity and Diversity*).
- 3 The Panel met students (including undergraduate students from all Parts) who represented the following degree programmes:
- a. BSc Building Surveying
 - b. BSc Construction Management and Surveying
 - c. BSc Quantity Surveying
 - d. MSc Construction Cost Management
 - e. MSc Construction Management
 - f. MSc Renewable Energy: Technology and Sustainability.

- 4 The Panel also met three recent graduates from the BSc Building Surveying and BSc Quantity Surveying programmes.

GENERAL OBSERVATIONS

- 5 As indicated above, the Panel met with a wide range of staff from across the Department (UK and University of Reading Malaysia (UoRM) campuses), the wider School and the Support Centres. It extends its thanks to all staff members who participated in the Review, and in particular to the School Director of Teaching and Learning (Dr Tim Lees). Staff were fully engaged with the review process and supplied the additional information requested by the Panel in a timely manner.
- 6 The Panel welcomed the opportunity to meet with a number of current and former students, who were passionate about their discipline and gave a very positive endorsement of the Department and the programmes under review. The Panel wishes to express its thanks to these students, and to those who contributed to the two Student Submissions, for their valuable input to the Review.
- 7 The Panel was impressed by the strong sense of community within and between cohorts and alumni. Current students and recent graduates who met with the Panel commented very positively on the network that existed across different year groups, which allowed students to make “great connections that last for the rest of your career” **[Good practice a]** (see also the section on **Learning environment and student support** below).
- 8 The Panel also wishes to commend the committed and enthusiastic staff team within the Department and wider School, who are clearly very dedicated to their discipline and to their students **[Good practice b]**. The staff team had been praised by several External Examiners (“the programme team are exceptionally student focussed and should be applauded for this high level of student engagement”, “The staff are clearly very dedicated and there is a strong bond between them and the students. This close connection continues after graduation and offers opportunities for discussions about improvement and feedback”).
- 9 The Panel noted that the Department had experienced a number of key changes since the last Periodic Review in 2013, including: the formation of the Department of Architecture, which now sits alongside the Department of Construction Management and Engineering within the School of the Built Environment; the introduction of a number of undergraduate programmes delivered at UoRM; and the (temporary) relocation to the Chancellor’s Building.
- 10 It should be noted that this Review did not include scrutiny of the new BEng/MEng Architectural Engineering, which the Department plans to introduce from 2020-21.

ACADEMIC STANDARDS OF THE PROGRAMMES

Committee structures

- 11 The Panel noted that the committee structures in place followed University policy and guidance and it concluded that these committees were effective in ensuring the quality assurance and enhancement of programmes delivered at both the UK campus and at

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UoRM. The membership of the committees was considered and deemed to be generally appropriate.

- 12 The Panel noted that there were some inconsistencies in student attendance and representation at the School Board for Teaching, Learning and Student Experience (SBTLSE) and Boards of Studies (BoS) meetings. It was also noted that student input at these meetings was not always captured in the published Minutes. In discussions with staff and students, the Panel was assured that student representation was a priority for the Department and that students felt that they had opportunities to voice their views through these formal committee structures.

Programme design

- 13 The Panel received and considered programme specifications, module descriptions, programme handbooks, External Examiners' reports and samples of student work and feedback. Additionally, the Panel spoke with staff and students, both at Reading and via Skype at UoRM, and with recent undergraduate alumni about their experiences of the programmes under review. On the basis of this evidence, the Panel was able to confirm that the academic standards of the programmes under review were appropriate and comparable to programmes on offer at other universities.
- 14 The Panel was satisfied that the programmes were designed in accordance with external reference points, including relevant QAA Subject Benchmark Statements and the requirements of relevant Professional, Statutory and Regulatory Bodies (PSRBs). The programmes under review held accreditations from a number of PSRBs, including the Chartered Institute of Building, Royal Institution of Chartered Surveyors and Board of Quantity Surveyors Malaysia.
- 15 Within the documentation provided, the Panel was unable to find any explicit reference to programme aims or learning outcomes. Where the terms 'aims' and 'learning outcomes' were stated, they were vague and did not provide any explicit guidance. The Panel therefore felt unable to confirm whether these aligned with the University's key strategies, and it suggested that they were not explicitly shared with students, staff and External Examiners. The Panel was also unable to confirm how programme aims were reviewed and developed, although it was noted that the Department reported a large number of internal reviews which suggested they were being proactive in this respect. It should be noted that the lack of detail in these areas did not hinder the Panel in coming to the conclusions noted in paragraph 13 above. Subsequent to the Panel's visit, it was confirmed that programme learning outcomes were located in the Further Programme Information, which could be accessed through the RISIS portal. A University-wide project was currently underway to review the structure of programme learning outcomes and to make them more visible to current and prospective students and staff. The Panel was supportive of this project's aims.
- 16 The Panel noted that the Department's undergraduate and taught postgraduate programmes had been subject to thorough review and had undergone substantial revision in recent years, and agreed that this had improved their appeal to potential students, and the students' learning experience. The Panel noted that the Department had not yet engaged fully with University strategy and timeframes in respect of the implementation of the Curriculum Framework, and that the undergraduate programmes under review were therefore not fully aligned with the principles set out in the Framework. The Panel was therefore unable to confirm whether the graduate attributes articulated in the Framework are inculcated and progressively developed by the programmes. The Panel noted the Department's reasons for not participating in the Curriculum Framework Review of

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undergraduate programmes, but would nevertheless encourage the Department to reflect on whether some aspects of programme design could be reviewed with the Curriculum Framework principles in mind. The Panel noted that the Department had confirmed in its Self-Evaluation Document that it would “review our undergraduate curriculum to ensure we have included the principles of the Curriculum Framework within our programmes by 2019/20”. It also noted that the University-wide Curriculum Framework Review of taught postgraduate programmes was due to begin in 2019/20 and it would strongly advise the Department to actively engage with the process.

- 17 Through scrutiny of the programme documentation, the Panel comfortably concluded that the degree programmes were all coherently developed. As the Panel included subject specific experts, as well as industry representation, it was also able to conclude that the scope and breadth of the programmes were very appropriate for the development of graduates in the built environment sector.
- 18 The Panel considered that the programmes contained an appropriate range of modules that had been developed to allow a connection of knowledge and skills from different modules to form a coherent integrated whole. This was achieved horizontally across a programme part, as well as vertically in progressively developing key subject areas. Indeed, the Panel identified some prominent areas of good practice in this respect and it would like to make a specific reference to the inclusion of a number of undergraduate ‘Projects’ modules that expose the students to a variety of complex case studies, enabling a detailed understanding of the way in which the built environment sector operates [**Good Practice c**]. These modules were praised by current UoR and UoRM students, graduates and employers, who recognised the clear benefits they offered. Students found these modules both challenging and rewarding, and staff showed a strong commitment to their effective delivery. The Panel was also pleased to note the relatively recent introduction of the 40-credit ‘integrating studies’ modules within all Masters programmes, which challenged the students to bring together their learning from across their programme.
- 19 The Panel also wished to highlight as a particular feature of good practice the inclusion of a good foundation of sector specific technology within the curriculum such as subject specific software and technological innovations in the area of visualisation that were heavily underpinned by the Department’s excellent research profile and industry engagement [**Good Practice d**].
- 20 In summary of paragraphs 17-19 above, the Panel concluded that the programmes very effectively developed graduates with attributes that were well aligned with the needs and expectations of the built environment sector.
- 21 As noted in paragraph 19 above, the Department has a deservedly excellent research reputation. The subject specific experts on the Panel were able to confirm that, overall, the staff within the Construction Management and Engineering Department engaged in nationally and internationally leading impactful research. The diffusion of this research in to the curriculum was very apparent and thus it was clear that the programmes allowed ample opportunities for students to learn about current research, as well as ensuring its delivery was relevant to global issues.
- 22 No specific details around language learning and study abroad were provided within the curricula documentation, however this was not explicitly excluded as a potential opportunity for students on the programmes, nor was it raised by students as a desirable that they could not undertake. The programmes appeared to be sufficiently flexible to allow for this, although it would seem that there is not significant appetite within the undergraduate cohort for such options, as they are very self-directed towards their future careers in the UK industry.

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- 23 The Panel noted that while the UK and UoRM programmes were quite well aligned, there was no absolute mirroring. This was considered to be a positive and the Panel noted that the content of UoRM programmes had been modified as appropriate to reflect the needs of the Malaysian built environment sector [**Good Practice e**] (see also the comments in the **Employability** section in respect of the 'Professional Practice' module, in particular Desirable recommendation d).
- 24 The Panel noted that 'championing' of UK-based undergraduate programmes was not consistent. All undergraduate programmes shared the same Programme Director, which appeared to be a functional position to ensure effective administration about which the Panel had no concerns. Nevertheless, it was apparent that the Building Surveying programmes enjoyed a very enthusiastic and engaged champion (see also the section on **Employability** below), which was not seen in the Quantity Surveying and Construction Management programmes. The Panel **recommends** that the Department extend the clear leadership in place for the Building Surveying programme to its Quantity Surveying and Construction Management provision [**Desirable recommendation a**].

Assessment and Feedback

Assessment policy, design, methods and arrangements

- 25 The Panel found evidence that the undergraduate and taught postgraduate programmes included a variety of assessment methods, including examinations, essays, reports, presentations, laboratory work, fieldwork, dissertations and group work, and that students were generally satisfied with the range used and their level of difficulty. External Examiners' Reports indicated that they were satisfied with the range of assessment methods for both undergraduate and taught postgraduate programmes. As indicated in paragraph 18 above, the 'Projects' modules were particularly well received by students and alumni as being very appropriate for learning and skills development in the built environment sector.
- 26 As indicated in paragraph 15 above, the current lack of visibility of programme learning outcomes meant that it might be difficult for staff to ensure that the assessments appropriately covered the programme objectives and requirements, and so allow confidence that the students were demonstrating their ability to meet the programme learning outcomes through the module learning outcomes, which were more clearly articulated.
- 27 While the range and difficulty of assessments appeared to be satisfactory, based upon discussions with both staff and students the Panel concluded that the quantity of assessment might in some cases be too high. The Department had resorted on occasion to utilising marking teams and PhD students in order to meet the 15-day turnaround time, but this was not good practice in the view of the Panel.
- 28 The Panel also noted that there was a great deal of variability in the number of assessments, particularly noticeable in the large number of 10-credit modules in Part 2, with some modules having one 100% examination and others with two coursework-based assessments as well as an exam. This was suggestive of over-assessment in some modules.
- 29 In light of the above observations, the Panel **recommends** that the Department review their assessments across all programmes to ensure they are aligned with the Curriculum Framework principles and programme learning outcomes. In undertaking this review, the Panel advises the Department to ensure that assessments reflect the credit weighting for modules to ensure that over-assessment is avoided. This should lead to better assessment load for both students and staff, eliminate the need for marking teams, and also increase

the likelihood of meeting the 15-day turnaround requirement [**Advisable recommendation a**].

Feedback to students

- 30 The Panel reviewed the student work made available to it, including the accompanying feedback. Generally, the Panel concluded that the range and quality of feedback given to students was appropriate and satisfactory. However, the Panel noted that the quantity of feedback provided was much more variable, with some staff providing extensive written notes in comparison with the feedback found in other modules. This variability had been noted by a number of External Examiners. The Panel also noted reports from both staff and students of the difficulties seen on occasion in meeting the expected 15-day turnaround. This was reflected in the sharp reduction in student satisfaction with assessment and feedback, and in satisfaction with the timeliness of feedback, in the 2017/18 National Student Survey (NSS) results.
- 31 The Panel noted comments from External Examiners with regards to the extent to which comments about examination answers were provided and the need for clarity and consistency in approach (“Once again, several examiners had provided no comments whatsoever, while one ticked every line! For many of the final year examination papers it was impossible to see how the markers had allocated marks to the students’ responses”, “As with last year some of the exam scripts do have some annotation to explain the marks, but the majority do not”).
- 32 Therefore, the Panel **recommends** that the Department undertake a further review of assessment and feedback to ensure that:
- a) the delivery of feedback is done in a more consistent manner across modules and markers, taking full cognisance of accepted good practice of feedback preparation. This should lead to a better management of the 15-day turnaround requirement; and
 - b) annotation of examination answers is provided consistently and aligned with University requirements and expectations, as set out in Section 12 of the *Assessment Handbook* [**Advisable Recommendation b**].

External Examiners and accreditation

- 33 The Panel noted that External Examiners’ Reports were full and comprehensive and agreed with the Panel’s view that the programmes met the minimum expectations for awards and complied with appropriate levels of the Framework for Higher Education Qualifications. The External Examiners’ Reports also confirmed the Panel’s view that the programmes met the standards expected and laid down by the professional institutions used to accredit the programmes.
- 34 The Panel considered that the procedures for receiving and responding to External Examiner reports appeared to be appropriate and in alignment with University expectations and policies. However, the Panel noted that some comments made by External Examiners in recent years did not seem to have been satisfactorily responded to. These comments related to the standard of exam questions in Part 3 of the undergraduate programmes, which were considered to rely too much on the simple recall of module material. The Panel considered the examinations in question and agreed with the External Examiner’s views. The Panel therefore **recommends** that:
- a) appropriate and rigorous procedures are implemented to ensure that External Examiners’ comments are reflected upon and, where necessary, changes implemented, and that this is clearly articulated and evidenced as part of a feedback process to the External Examiners themselves. This also forms part of a number of

PSRB review processes, and so may prove beneficial to the Department in a number of ways;

- b) the Department respond to repeated calls from External Examiners to ensure that Part 3 exams are prepared to an appropriate format and standard for the level being assessed. The Department should attempt to have exam assessments that allow a demonstration of full understanding of the material and allow better discrimination of student abilities, and do not simply expect a recall of material [**Advisable recommendation c**].

QUALITY OF LEARNING OPPORTUNITIES OFFERED BY THE PROGRAMMES

Teaching and learning

- 35 The Panel found good evidence of high quality teaching and learning, delivered by committed staff. This was supported by module evaluations, and by NSS and Postgraduate Taught Experience Survey (PTES) results.
- 36 The reduction in the use of sessional lecturers over the past few years was noted with approval by the Panel. The Panel also noted that the use of Undergraduate Teaching Assistants (UTAs), Part 3 students who help to support teaching at Parts 1 and 2, had been well-received by students. The Panel considered that the guidance and support offered to UTAs was clear and appropriate. The Panel would encourage the Department to engage further with peer-to-peer learning through University initiatives such as Peer-Assisted Learning (PAL).
- 37 The Panel noted several examples of diverse and inspiring approaches to teaching and learning, such as the Construction Live project, and students commented on their teaching with enthusiasm. The Construction Live module provided an opportunity for students across all years of the programme to work together on a hands-on construction experience, working with young professionals from a partner contractor and their supply chain. This provided a valuable opportunity for students to contribute different skills to the team, and to observe and develop valuable new skills which they would need for employment [**Good practice f**].
- 38 There were also examples of modules that encouraged reflection on thinking and practice, such as the 'integrating studies' modules on the Masters programmes. Likewise, several modules afforded students opportunities to learn by research and enquiry, including the 'Projects' modules (see also paragraph 18 in the section on **Programme design**). The students who met with the Panel and contributed to the Student Submissions commented favourably on the way in which teaching was informed by staff research and professional activity.
- 39 The Panel found clear evidence, especially in relation to undergraduate programmes, that most students actively participated in their learning and were highly engaged. The Panel considered that the close sense of community across the Department facilitated a culture where student feedback on teaching and learning was direct and ongoing.
- 40 The Panel noted that students appreciated the diversity of modules, and the diverse range of assessments. This was also commented on favourably by External Examiners ("It was nice to observe diversity in the teaching and learning approaches used (including assessment strategies)"). The Panel considered that teaching and learning methods were well aligned with module and programme outcomes.

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- 41 The Panel noted that the written evidence provided suggested some dissatisfaction with the assessment of group work; however, when the Panel explored this further with students, alumni and staff, responses indicated that students valued group projects, appreciated the rationale for group assessments, and that staff had endeavoured to ensure that group assessment was robust and fair. The Panel recognises that the assessment of group work poses several challenges, and it would encourage the Department to continue to consider ways to improve the students' experience of assessed group work, perhaps including learning outcomes relating to team work.
- 42 The Panel noted that recent progression rates for BAME (UK-based) students suggested that the Department could do more to ensure that teaching and learning was designed to appropriately address the needs of diverse students. This issue is explored further in the sections on **Student admission, retention, progression and attainment** and **Learning environment and student support**.

Student admission, retention, progression and attainment

- 43 The Panel noted that there was a link between the economic fortunes of the UK and the ability to recruit onto Construction Management and Engineering programmes. However, since the last recession there had been a sustained recovery and undergraduate student numbers had increased steadily over the past four years. This large increase was primarily a result of increased Home applications but quality had been maintained.
- 44 The Panel acknowledged that the large growth in student numbers had substantially impacted staff workloads, and that the Department was now looking at capping the undergraduate intake. The Panel saw this as an opportunity to further increase student quality and to consolidate the Department's high league-table position.
- 45 The Panel noted that taught postgraduate student numbers had remained largely stable over the same period, although there had been a small decline in the number of Home applications between 2016/17 and 2017/18, whereas International applications and Firm Acceptances had increased. The number of International enrolments was significantly lower than the number of Firm Acceptances.
- 46 The large number of international students was seen by the Panel as a possible risk, particularly with the unknown implications of Brexit and the global economy.
- 47 The Panel noted that the Self-Evaluation Document had highlighted poor recruitment on two Masters programmes. It was satisfied that the Department was monitoring the situation and taking appropriate action, including the introduction of recent changes to programme content and to the title of one of the programmes.
- 48 The Panel noted that student recruitment at UoRM had increased steadily until 2017/18, when there had been a sharp drop. This was attributed to an administrative error and was not expected to negatively impact upon future recruitment. The Panel noted that, subsequent to the Review visit, a separate, wider University-level review of provision at UoRM had concluded and a decision had been taken to suspend the BSc Construction Management and BSc Building Surveying at UoRM, which would not be recruiting any new students.
- 49 Progression from Part 1 to Part 2 and Part 2 to Part 3 within the UK-based cohort was seen to be in-line with the University average. However, it was brought to the Panel's attention that there had been a significant drop in progression at first attempt of Part 1 BAME students in recent years, although progression from Part 2 to Part 3 for these students was in-line with the cohort. This was tentatively attributed in part to the removal of attendance monitoring in lectures and to increased class sizes. The Panel viewed the BAME

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attainment gap as an issue that was extremely complex, and was pleased that the Department was beginning work to mitigate this. The School Director of Teaching and Learning showed a strong commitment to better understanding the issue and had introduced a number of measures to address it, including re-introducing attendance monitoring and attempting to create a shared positive cohort identity.

- 50 Progression at UoRM from Part 1 to Part 2 was broadly in-line with progression at UoR. However, the Panel noted indications that progression rates at first attempt were falling, and it advises the Department to monitor this situation. Progression at UoRM from Part 2 to Part 3 showed a significant dip in 2016/17 to 65% of students passing at first attempt. The Panel considered this to be concerning. When raised with the School Director of Teaching and Learning, this was attributed to a number of ongoing changes at UoRM and the Panel was assured that the Department was monitoring this closely.
- 51 In light of the above observations in paragraphs 49 and 50, the Panel **recommends** that the Department continue to investigate the attainment gaps that have recently been identified in student cohorts, specifically with regard to progression of UK-based BAME students and progression from Part 2 to Part 3 at UoRM [**Desirable recommendation b**] (see also paragraphs 58 and 59 in the section on **Learning environment and student support**).
- 52 The Panel noted that overall student attainment for undergraduate and taught postgraduate programmes at UoR was excellent, with a large proportion of 'good' degrees awarded each year (First/Upper Second Class at undergraduate level; Distinction or Merit at taught postgraduate level).

Learning environment and student support

- 53 The Panel concluded that students in the Department benefitted from expert teaching and support from staff with diverse expertise and experiences, and that they achieved the intended learning outcomes of the curricula.
- 54 The Panel noted that the Department received appropriate support from Technical Services, Student Support Centres and other support functions, such as Careers. The Department reported that the recent restructuring and centralisation of the University's technical and administrative support had impacted on how the Department operated, particularly in terms of support for teaching. Whilst recognising the challenges faced by the Department as a result of the loss of its teaching office, the Panel concluded from discussions with academic staff and Support Centre staff that effective support was being provided, and that effective working practices and working relationships between the Department and the relevant Support Centre had now been established. There was a discussion about the challenges presented by the location of the Student Support Centre in the Edith Morley Building, but these appeared to have been largely overcome and students were accessing support when required.
- 55 The Panel recognised that the Department's accommodation in the Chancellor's Building was temporary but considered that the space had been used effectively and that resources were suitable. The student study spaces and resources were observed to be well used by students and the Department had worked with students to maximise access to these spaces. Whilst it was noted that some of the learning resources, equipment and software would benefit from updating (see also the comments in the **Employability** section below), the Panel recognised that students benefited from access to cutting edge technologies (e.g. computer modelling and the virtual reality cave). The students who met with the Panel and contributed to the Student Submissions were very positive about the resources made

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available to facilitate their learning, including the study spaces, Resource Room and technology/software.

- 56 The Panel considered that the learning spaces did not currently capture the activities of staff and students as effectively as they could, and **recommends** that the Department make more effective use of building display spaces to showcase and celebrate student, staff and graduate achievements [**Desirable recommendation c**].
- 57 The Panel noted that staff and students highly valued the sense of community that had been built and fostered in the Department (also referred to under **General observations** above). This sense of community was actively supported by the Department through extra-curricular initiatives, support of student led activities and effective use of study spaces and other learning resources. The Panel noted as a particular feature of good practice the key role played by the student learning community in organising extra-curricular activities and careers and networking events [**Good practice g**]. The Panel also commends the practice of allowing students to use Departmental meeting rooms when not in use by staff [**Good practice h**]. The Panel observed many examples of strong peer-peer support networks and good rapport between staff and students on the tour of Departmental facilities and during its meeting with students.
- 58 There were some discussions during the Panel's visit about how inclusive the learning community was for students from different backgrounds and whether all students felt the same sense of belonging. As referred to previously in the section on **Student admission, retention, progression and attainment**, the Panel was pleased to note that the Department had begun to investigate student engagement and attainment in terms of the diversity and inclusion of the Department's programmes. The Panel noted that links between a sense of belonging and student achievement were recognised within the HE sector and, in view of the strength of the Department's learner community, the Panel considers that this should be an area of focus, with comparison of academic achievement across student groups and engagement with the learner community undertaken. The Panel wishes to highlight that this work aligns strongly with the objectives of the University's Curriculum Framework Review and it would strongly encourage continuation of this work. The Panel advises the Department to involve the student-led Reading University Construction Society in these discussions to ensure that extra-curricular events are also inclusive and welcome diversity.
- 59 As noted in the section on **Student admission, retention, progression and attainment**, the Department had highlighted concerns about student attendance, and initial investigations had suggested that particular cohorts of students were less likely to attend taught sessions. The Panel noted that the learning arrangements for student support were inclusive and supported diverse cohorts of students but would encourage the Department to continue its investigation into why particular student groups might not engage in the learning environment as others do. As mentioned previously, work that looks at the challenges facing the different student groups within the student body will be important, including the impact of ethnicity and commuter groups on sense of belonging.
- 60 It was documented in Minutes from Student/Staff Liaison Committee meetings that students had made repeated requests for teaching materials to be made available prior to lectures. Whilst these requests were made by students wishing to prepare for, and get the most out of, their lectures, the Panel noted that certain student groups might be disadvantaged or that disability recommendations might not be fully implemented if teaching materials were not made available ahead of taught sessions. It was acknowledged that staff had engaged in training and workshops on inclusive teaching. The Panel **recommends** that the Department ensure that adequate adjustments are in place

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for students with disabilities, including ensuring that key learning resources are uploaded to Blackboard at least 48 hours in advance of the relevant teaching session for all modules, in line with the University's *Policy on Inclusive Practice in Teaching and Learning* [**Advisable recommendation d**]. The Panel encourages the Department to consider how to create a more inclusive learning environment for all student groups that extends beyond the classroom, including experiential learning opportunities and placements.

- 61 The Panel noted that the School had openly expressed concerns regarding the introduction of the University's Academic Tutoring System (ATS). The separation of pastoral support from academic support in the new Academic Tutor role had not been welcomed. The School had only recently appointed a School Director of Academic Tutoring (SDAT) and the Panel noted that this new role had yet to fully adopted within the School. A formal allocation of time for the SDAT role did not appear to have been agreed and the roles of other academic staff were not clear. The Panel noted that, although this delay in appointment to the SDAT role did not appear to have affected student support directly, it was impacting the implementation of the ATS within the School and the effectiveness of academic staff in related roles. The Panel **recommends** that the School continue to implement the ATS, in accordance with the requirements set out in the University policy on the Academic Tutor System. This should include ensuring that an appropriate time allocation is made for the SDAT and Academic Tutor roles when considering workload models, and providing support for the SDAT [**Advisable recommendation to the School a**].
- 62 The Panel enjoyed meeting with the Department's undergraduate students and learning about the steps they were taking as they worked towards personal and academic goals. As noted in the section below on **Employability**, placement and work experience opportunities were particularly valued by students, as were the networking opportunities with industry professionals and employers organised by the Reading University Construction Society. Opportunities to develop personal skills and professional skills were also provided within the curricula (for example, the Construction Live project outlined in the **Teaching and Learning** section above). It was noted that postgraduate students would welcome additional professional support (see also Advisable recommendation f below).

Employability

- 63 The Panel concluded from its discussions with recent graduates, current students, and employers that graduates from the Department were highly employable and, on balance, were overall well prepared for the workplace. This was confirmed by the undergraduate and postgraduate DLHE survey statistics.
- 64 It was clear to the Panel that the Department made clear efforts to ensure that the programmes were informed by the wider industry, and that students were encouraged to make connections between their learning and the wider world. The Department maintained close links with its alumni and industrial partners, which had measurable benefits for students in terms of their curricular and extra-curricular experiences and their future employment opportunities. The students who met with the Panel highlighted particular benefit from the learning and teaching activities developed and delivered by practising industry professionals, who ensured that programmes remained relevant and that students were prepared for current and future industry practices and standards. In particular, the Panel commends the proactive work undertaken by the Lead for Building Surveying and Employability Lead [**Good practice i**].
- 65 That being said, the Panel considered that there was a need for continued vigilance to ensure that the right balance between general education and vocational training was being

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struck. The Panel noted mixed views from current students and recent graduates regarding whether they felt as prepared for the workplace as graduates from other universities in terms of discipline-specific skills. The Panel also noted comments from students and recent graduates that some elements of the programmes were in need of ‘modernising’, and it was concerned to note that the Department had only recently switched to electronic measurement techniques, which had been commonplace in industry for many years. Therefore, the Panel **recommends** that the Department establish a way of capturing the good practice relating to industry engagement, enabling it to be shared across, and embedded in, modules and programmes [**Advisable recommendation e**]. This should ensure that all programme material remains suitable going forwards. Given the practical difficulties associated with ‘industry advisory boards’, the Panel suggests that this might instead be achieved by inviting recently chartered alumni from the Department to provide feedback on a number of programmes each year. Additionally, the Panel wondered if the Department’s good links with industry could be leveraged further, perhaps encouraging input from potential employers in programme development, delivery and review as part of their participation in the careers fair events.

- 66 In addition to the above points, the Panel noted some specific suggestions which emerged from the discussions with students that could be ‘quick wins’. In this context, the Panel **recommends** that the Department consider how Part 3 could be better aligned with professional practice and industry accreditation. This might include aligning modules and material with the professional body competencies, and replicating the ‘Professional Practice’ module delivered at UoRM in the UK (possibly as discrete, non-credit bearing modules in the Summer Term or embedded in the Careers module in Part 3) [**Desirable recommendation d**]. The Panel would also encourage the Department to explore the scope to further embed workplace skills and build students’ familiarity and confidence in applying their knowledge in workplace-relevant scenarios or with the resources they will use on graduation, such as up-to-date software.
- 67 The Panel noted that, at undergraduate level, the Department demonstrated an exemplarily high degree of commitment to placements in industry and career opportunities after graduation. The year in industry option, formal placements, informal placements and the Reading University Construction Society events were well supported and appeared to be very appreciated by students [**Good practice j**]. The undergraduate students who met with the Panel commented positively on the communications about, and support for, placement opportunities, and on the abundance of opportunities for them to network with representatives from industry, including the informal ‘beer and pizza’ evenings organised by the Reading University Construction Society.
- 68 At taught postgraduate level, the Panel noted that the picture was more complex, in part reflecting the vastly more varied student body at this level. Some members of the cohort that were not on a research path, and not studying part-time alongside existing employment, did not feel that they were included in the Department’s employment opportunities and industrial connections. Therefore, the Panel, whilst noting the challenges presented by the diverse student body, **recommends** that the Department review its communications about career opportunities to ensure they are framed in a way that ensures taught postgraduate students feel included [**Advisable recommendation f**].
- 69 The Panel noted that the role of the professions in the construction industry continued to evolve, particularly with new technologies such as Building Information Modelling (BIM) and off-site manufacture, and that some traditional roles and/or skills might become redundant in the next 5-10 years. The Department had clearly embraced this at an operational level, for example with numerous BIM suites; however, the Panel was not clear how the Department planned to deal with this at a more strategic level. The Panel noted that a

similar concern had been raised in the previous Periodic Review which did not appear to have been acted on (Desirable recommendation b: “The School develop a strategic level board to facilitate the School’s awareness of medium to long-term issues within industry particularly in light of changes in government regulation”). The Panel **recommends** that the Department develop a process for strategic level view and ‘horizon-scanning’ of the industry, to ensure that it remains market-leading in the medium and longer term [**Advisable recommendation g**]. This should be seen as an opportunity for the Department to lead the industry conversations in this area, as it does in other areas of research.

ENHANCEMENT OF QUALITY AND ACADEMIC PROVISION

- 70 The Panel was pleased to note that teaching was delivered in a supportive environment. Many staff had undertaken, or were currently undertaking, appropriate training and HEA accreditation via either the Academic Practice Programme or CPD route, and several staff had received Students’ Union nominations or awards.
- 71 The Panel noted the Department’s structured use of Teaching Fellows to support the delivery of teaching, help manage workload and to support staff development. It was pleased to note that a number of staff who had previously occupied Teaching Fellowships had since secured lectureships at Reading and elsewhere. The Teaching Fellows and probationary lecturers who met with the Panel confirmed that they felt integrated in the community of the Department, and that they received a good level of support, both formal and informal, from more senior colleagues. Teaching Fellows were encouraged to contribute to curriculum development, and felt valued in terms of their contribution to the Department.
- 72 As noted previously, the Panel was pleased to note that the Department was committed to regularly reviewing its undergraduate and taught postgraduate provision. The Panel has made a number of recommendations/suggestions in respect of the Department’s engagement with the implementation of the Curriculum Framework, which should help the Department to further enhance the quality of its provision.
- 73 In addition to the formal committee structures in place, outlined in the **Committee structures** section above, the Panel was pleased to note that the Department also held a series of less formal, more frequent meetings which aimed to address emerging issues at programme level and explore possible enhancements to provision.
- 74 The Panel was satisfied that module evaluation took place on a regular basis, in line with University policy, and that these evaluations were reviewed by Module Convenors and Programme Leads to direct enhancement activity. Module evaluation information was also considered at BoS and SBTLSSE meetings. The Panel supports the plans to create a School-level process to synthesise and review module evaluation data. The Panel also supports the Department’s plans to introduce a more formal annual programme evaluation process, in line with the *Policy on Student Evaluation of Teaching and Learning*, which would reflect on student evaluation obtained via the SSLC alongside other data.
- 75 The Panel was pleased to note that academic staff were engaged with peer review of learning and teaching and that they considered it to be an effective way to enhance their practice. However, the Panel noted that the Department did not currently have a process in place for monitoring and reporting on peer review. The Panel **recommends** that the Department introduce systematic implementation and reporting of peer review of learning and teaching on an ongoing basis, in accordance with the University policy on *Peer review*

of learning and teaching [**Desirable recommendation e**]. The Panel also supports the Department's plans to conduct a staff-led peer review of teaching and learning focussed on assessment and feedback practices.

MAIN CHARACTERISTICS OF THE PROGRAMMES UNDER REVIEW

- 76 The Panel considers that the degree programmes offered by the Department are coherent, well-designed and relevant. The programmes facilitate a connection of knowledge and skills across modules, encourage reflection on thinking and practice and allow students opportunities to learn through research and enquiry, which are underpinned by the Department's strong research profile and industry engagement. Students benefit from excellent curricular and extra-curricular opportunities for personal and professional development, including placement and work experience opportunities, learning and teaching activities delivered by practising industry professionals and networking events. Graduates from the Department are highly employable.
- 77 The programmes benefit from high-quality teaching delivered by a committed and enthusiastic staff team in a supportive environment. There is a strong sense of community within and between cohorts and alumni which is actively supported by the Department. The Panel commends the Department's evident commitment to regularly reviewing its undergraduate and taught postgraduate provision, thereby enhancing the student learning experience.

CONCLUSIONS ON INNOVATION AND GOOD PRACTICE

- 78 The Panel identified the following as representing particularly good practice:
- a. the strong sense of community that exists within and between cohorts and alumni of the Department;
 - b. the committed and enthusiastic staff team within the Department and wider School, who are clearly very dedicated to their discipline and to their students;
 - c. the inclusion of a number of undergraduate 'Projects' modules that expose the students to a variety of complex case studies, enabling a detailed understanding of the way in which the built environment sector operates;
 - d. the inclusion of a good foundation of sector specific technology within the curriculum such as subject specific software and technological innovations in the area of visualisation that is heavily underpinned by the Department's excellent research profile and industry engagement;
 - e. the modification of the content of UoRM programmes as appropriate to reflect the needs of the Malaysian built environment sector;
 - f. the Construction Live module, which provides an opportunity for students across all years of the programme to work together on a hands-on construction experience, working with young professionals from a partner contractor and their supply chain;
 - g. the key role played by the student learning community in organising extra-curricular activities and careers and networking events;
 - h. the practice of allowing students to use Departmental meeting rooms when not in use by staff;
 - i. the proactive work undertaken by the Lead for Building Surveying and Employability Lead; and

- j. at undergraduate level, the Department's exemplarily high degree of commitment to placements in industry and career opportunities after graduation. The year in industry option, formal placements, informal placements and the Reading University Construction Society events are well supported and appear to be very appreciated by students.

CONCLUSIONS ON QUALITY AND STANDARDS

- 79 The Panel has concluded that the quality and standards of the programmes reviewed are appropriate.

CONCLUSIONS ON NEW DEGREE PROGRAMME PROPOSALS

- 80 The Panel received no submissions with regards to new programme proposals.

RECOMMENDATIONS

- 81 The Panel **recommends** to the University Programmes Board that the following degree programmes taught by the Department of Construction Management and Engineering are re-approved to run for a further six years:

- a. BSc (Hons) Building Surveying (delivered at UoR and UoRM)
- b. BSc (Hons) Construction Management (delivered at UoR and UoRM)
- c. BSc (Hons) Construction Management and Surveying
- d. BSc (Hons) Quantity Surveying (delivered at UoR and UoRM)
- e. MSc Construction Cost Management
- f. MSc Construction Management
- g. MSc Design and Management of Sustainable Built Environment
- h. MSc Construction in Emerging Economies
- i. MSc Information Management for Design, Construction and Operation
- j. MSc Project Management
- k. MSc Renewable Energy: Technology and Sustainability
- l. EngD in the Technology in the Sustainable Built Environment (TSBE) Centre

- 82 The report will categorise any issues as follows, in order of priority:

- Those areas where the Review Team believes it is **necessary** for action to be taken urgently to safeguard the standard of provision;
- Those areas where it is **advisable** that the issues be addressed as soon as possible;
- Those areas where it is **desirable** that the issue be addressed over a longer time span.

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- 83 The Panel does not consider that any recommendations must be addressed as a condition of re-approval.
- 84 The Panel makes the following recommendations to the **Department**:

Necessary

There are no necessary recommendations.

Advisable

The Panel **recommends** that the Department:

- a. review their assessments across all programmes to ensure they are aligned with the Curriculum Framework principles and programme learning outcomes. In undertaking this review, the Panel advises the Department to ensure that assessments reflect the credit weighting for modules to ensure that over-assessment is avoided;
- b. undertake a further review of assessment and feedback to ensure that:
 - i. the delivery of feedback is done in a more consistent manner across modules and markers, taking full cognisance of accepted good practice of feedback preparation; and
 - ii. annotation of examination answers is provided consistently and aligned with University requirements and expectations, as set out in Section 12 of the *Assessment Handbook* ;
- c. in respect of External Examiners' Reports:
 - i. implement appropriate and rigorous procedures to ensure that External Examiners' comments are reflected upon and, where necessary, changes implemented, and that this is clearly articulated and evidenced as part of a feedback process to the External Examiners themselves;
 - ii. respond to repeated calls from External Examiners to ensure that Part 3 exams are prepared to an appropriate format and standard for the level being assessed. The Department should attempt to have exam assessments that allow a demonstration of full understanding of the material and allow better discrimination of student abilities, and do not simply expect a recall of material;
- d. ensure that adequate adjustments are in place for students with disabilities, including ensuring that key learning resources are uploaded to Blackboard at least 48 hours in advance of the relevant teaching session for all modules, in line with the University's *Policy on Inclusive Practice in Teaching and Learning*;
- e. establish a way of capturing the good practice relating to industry engagement, enabling it to be shared across, and embedded in, modules and programmes;
- f. review its communications about career opportunities to ensure they are framed in a way that ensures taught postgraduate students feel included; and
- g. develop a process for strategic level view and 'horizon-scanning' of the industry, to ensure that the Department remains market-leading in the medium and longer term.

Desirable

The Panel **recommends** that the Department:

- a. extend the clear leadership in place for the Building Surveying programme to its Quantity Surveying and Construction Management provision;

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- b. continue to investigate the attainment gaps that have recently been identified in student cohorts, specifically with regard to progression of UK-based BAME students and progression from Part 2 to Part 3 at UoRM;
- c. make more effective use of building display spaces to showcase and celebrate student, staff and graduate achievements;
- d. consider how Part 3 could be better aligned with professional practice and industry accreditation. This might include aligning modules and material with the professional body competencies, and replicating the 'Professional Practice' module delivered at UoRM in the UK (possibly as discrete, non-credit bearing modules in the Summer Term or embedded in the Careers module in Part 3); and
- e. introduce systematic implementation and reporting of peer review of learning and teaching on an ongoing basis, in accordance with the University policy on *Peer review of learning and teaching*.

85 The Panel makes the following recommendation to the **School**:

Advisable

The Panel **recommends** that the School:

- a. continue to implement the ATS, in accordance with the requirements set out in the University policy on the Academic Tutor System. This should include ensuring that an appropriate time allocation is made for the SDAT and Academic Tutor roles when considering workload models, and providing support for the SDAT.

86 The Panel does not have a recommendation to the University Programmes Board as to whether any proposal(s) for new degree programmes should be approved, as this is not applicable.