



ARCOM Newsletter



Dear members and readers, welcome to a new issue of the ARCOM newsletter.

It is a great pleasure to share with you in this issue the success of the ARCOM Doctoral Workshop, hosted by Reading University and chaired by Dr. Will Hughes. On behalf of ARCOM, I would like to thank Will not only for his valuable contribution towards the great success of this event, but also for his continuous contribution to the newsletter. You can read about this event on pages 1 & 2.

You may already know that 2004 marks the 20th anniversary of the ARCOM conference, which is taking place in Edinburgh. Our thanks go to Dr. Chris Fortune from the host university 'Heriot-Watt', for updating us with this important event on pages 1 & 2. ARCOM promises this conference to be an exciting celebration of its achievement. We hope to see you there.

This issue also shares successful stories of EPSRC grants with the 'ReCoUPS' team on Page 3, while our congratulations are extended to CEBE for their new government funding, which is also on Page 3.

(Continued on page 2)

ARCOM doctoral forum



ARCOM recently hosted an international doctoral forum on procurement and contract management at the University of Reading on the 1st of June 2004. The workshop was convened and chaired by Dr Will Hughes, Reader in Construction Management and Economics at the University of Reading.



their work particularly on methodological and ontological issues and the novelty of the work presented. This year's workshop was organised with a focus on procurement and contract management with special emphasis on the PFI... (Continued on page 2)



The Forum, as part of the tradition of ARCOM, is held at least once annually to give the opportunity for students writing PhDs to present their work and receive a valuable critique on



ARCOM 2004 in Edinburgh



The 2004 ARCOM conference returns north of the border to Edinburgh from Weds Sept 1st to Fri Sept 3rd. The conference will be based at Heriot-Watt University, which is the first time it has hosted the ARCOM event. A high number of abstracts have already been received for the conference and so it promises to be a well-attended event. ARCOM's local contacts at Heriot-Watt University are Chris Fortune and Kate Carter and they have been working hard to put the required logistics in place to accommodate the anticipated large number of delegates. Accommodation will be available either on-campus or in one of several city centre hotels and potential delegates are advised to contact the hotels listed on the ARCOM website as soon as possible. The Heriot Watt campus is some 6 miles outside the city centre and it is planned to provide transport for delegates to and from their hotels. Chris Fortune comments, "The timing of the conference is such that the main music, drama, comedy and film festivals will have just closed but the special 'buzz' Edinburgh has over the summer may still be evident". The Heriot-Watt team are looking to put in place social events that will give delegates the opportunity to see some of the attractions available in the old town, which is part of the city centre that has been declared a world heritage site. However, if you are planning to visit Edinburgh in September then do remember to bring a coat and perhaps an umbrella as the weather can be unreliable. Full details will be placed on the ARCOM web-site as soon as they are available.

By: Dr. Chris Fortune



(Continued from page 1)

The previous issue of the ARCOM newsletter, included the academic profile of professor Andrew Price, reflecting a leading example of academic research in Construction Management, and a remarkable leadership in his field. Many thanks to Professor Price for sharing his valuable supervision experience with the ARCOM community on Pages 4 & 5 of this issue.

Our congratulations go to David Heesom for recently achieving his PhD from Wolverhampton University. David shares the abstract of his research with the readers on Page 5. Well done David !!

Thanks to Andrew Dainty for sharing his book review on Page 7. On the same page, the editor hopes to share a smile with the readers.

Last but not least, I am sure the ARCOM community would like to share their congratulations to David Boyd for his new chair at the university of Central England (Page 5).

I hope you enjoy reading this issue of the newsletter. Your comments, feedback and future contribution are much appreciated.

Dr. Vian Ahmed
Editor



ARCOM doctoral forum

experience across the globe. The one-day forum started with an unconventional but very warm welcome to the participants by the workshop convenor Dr Will Hughes. In his opening welcome address he highlighted among other things, issues relating to PFI and how the PFI theme run through most of the papers being presented.



Eight PhD students presented their work to the international audience. Most of the PhD candidates were in the first and second year of their studies. The presented papers generated high amicable and constructive interaction between the student presenters and the audience. It was enjoyed and appreciated by all the participants. More than 30 participants attended the workshop, coming from various part of the world including UK, Sweden, Germany, Malaysia and Australia. In total 8 papers were presented. The bulk of the presenters come from universities in the UK including Reading University, Glasgow Caledonian University, University of Salford, Loughborough University, University of Brighton and University College London. Two international presenters come from the Queensland University of Technology, Australia, and Chalmers University of Technology, Sweden.

In the morning session, Billy Hare of Glasgow Caledonian University presented his work, the integration of health and safety planning in construction project management through best practice gateway model. His presentation followed by stimulating debate about the number of accidents in construction site is still as high as it was ten years ago despite the introduction of stringent laws, which emphasis the need of such models. The animated Rifat Akbiyikli, from Salford University, pre-

sented his paper on the holistic realisation of PFI infrastructure project objectives with a focus on road construction in the UK.



After a lunch break full of heated discussions, there were three presenters in the afternoon session included: Debbie Ancell, University of Reading who presented her paper on performance-based contracting. Fadhil Mohammed from Loughborough University gave a contrasting talk on developing new approaches to the procurement strategies for the oil and gas industry. Kai Rintala from the University College London, who is at the final stage of his PhD work, presented



an alternative organisational framework for private sector actors in PFI projects

In the final session, Tim Rose of Queensland University of Technology, Australia, gave a presentation about optimisation of finance incentive contracts in Australian commercial building projects. Fredrik Waara from Chalmers University of Technology in Sweden presented his work on non-price criteria in municipal construction procurement. The final presenter was David Rutter, Brighton University, who presented his work on the performance of constructed facilities delivered through the PFI.

This one day ARCOM forum has provided a platform for PhDs students at various stages of their research work to interact with fellow students, academics and practitioners in the built environment. The critique of the presented work consolidated the methodological approach and gave the students new avenues to explore and tap into extra sources of data and information. The workshop was thoroughly stimulating and enjoyed by all who

By: W. Kwawu and A. Muallim



EPSRC Grants 'The ReCoUPS Project'

The Reengineering Construction Using Payment Systems (ReCoUPS) is a £152k research project commissioned by the EPSRC to evaluate existing novel payment systems. It aims to draw out good practice features that can assist develop a decision aid that construction industry professionals can use to better advise their clients. It is anticipated that this research will change the industry's perception of cash-flow from being regarded as a project performance indicator to it being regarded and applied as a project performance enabler.

The research is split into three phases lasting a total of 36 months. Phase I involves conducting a thorough and detailed review of alternative payment and pricing mechanisms being used by construction clients. Phase II involves developing a simulator for modelling the outcomes of various payment systems. Whilst Phase III comprises verifying the simulator on 'ready to build' projects to explore different cash flow outcomes from different payment systems. Phase I

is on-going from the University of Strathclyde in Glasgow. Whilst Phases II and III will be carried out from Heriot-Watt University in Edinburgh.

The research project engages practitioners in quarterly meetings to provide feedback and direction. The Industrial Partners are Amey, Currie and Brown, Barnados, Gardiner and Theobald, Graham & Sibbald, RMJM Architecture, Servite Housing Association and Standard Life. The present Steering Committee members are Dr Chris Fortune (co-investigator), Shonagh Hay (Ex Chair of the "Partnering the Supply Chain Working Group" of the M4I), Prof. Ammar Kaka (Principal Investigator), Prof. David Langford (co-investigator), Jim Meikle (visiting Professor and member of the RAE panel for Built Environment), and Gibril Njie (Research Assistant)

Further information can be obtained from the designated website at <http://www.sbe.hw.ac.uk/recoups/>. Reviews of literature from Phase I are also proposed to form an initial paper at the forthcoming ARCOM 2004 conference.



Congratulations to the ReCoUPS group on their great achievement

Congratulation to CEBE

The Centre of Education in the Built Environment (CEBE) is aimed at assisting the UK Higher Education built environment community to improve educational quality and innovation.

The CEBE team are pleased to announce the success of its bid to Higher Education Innovation Fund for a Construction Knowledge Exchange. The project has a total value of more that £2.5m over the

next five years and means that the School and CEBE will be recognised as the leaders in knowledge transfer activities for the built environment.

The Government decided to create 20 knowledge exchanges as part of its drive to improve the added-value of the university sector. There are over 130 higher education institutions and clearly those universities who are successful with their bids are being identified as beacons

for others to follow.

CEBE also announced that it has been successful in attracting funding to support phase 2 of its ACBEE project (Accelerating Change in Built Environment Education). CITB-Construction Skills is providing £50k for the next 12 months. This project is aims to promote better dialogue between HEIs and industry and has been very successful at identifying case studies of excellence.



By: Mel Lees
CEBE Co-director
University of Salford



Supervising PhD students

The selection process

Selection is a two way process. In agreeing to supervise, it is essential to check that a prospective student is not just academically qualified to study at a higher level but is motivated and has appropriate funding in place. The first points to be considered are: the quality of the academic qualification and reputation of the awarding body; the source of funding and has it been awarded on a competitive basis; the references; English ability including assessment of written English; the student's ability to produce a project definition document. Ability and expectations will vary from one student to another and is influenced by such factors as: age; country; part-time or full-time registration; home or overseas; and Research Assistant or Research Student. These should be taken into account during the selection process.

The student's motivation may be driven by the desire to obtain a higher qualification; satisfaction obtained from the research process; as a way to increased career prospects; they become more skilled in English, research, IT etc.

Agreeing research scope, definition, aims and objectives

It is important that the research scope, definition, aims and objectives are established as soon as possible. Sometimes this can be done at the on set of the research but may require refinement once a full literature review has been conducted. However, the research scope, aims and definition will inevitably develop and change as the research progresses. As a guide:

- there should be a single aim with multiple measurable objectives;
- they should be achievable and worthwhile; and
- they should be ambitious and involve an element of risk management.

Literature review and referencing

The literature review and referencing are important not only because they set the foundation for the work to follow but also because Examiners tend to use it to assess the quality of the research and as evidence of research training. It is important that the supervisor checks the student's organisation skills and record keeping, this will save considerable time later. It is important to check where the student is looking for information; set and keeps deadlines; and ask for written evidence of progress from the student. The student should state the aim of each aspect of literature review and look to publish the results as conference papers to obtain early feedback on their research.

Agreeing to progress to the next stage of the research

It is not only important to give the student good advise but it needs to be timely: too soon and the student may forget as other issues take priority; too late will result in considerable wasted effort by both the supervisor and the student. In order to avoid this and to guide the future work, the student and supervisor must agree on the following before work progresses further.

- Initial idea or field of research
- Objective and scope definition
- Structure and content of first year report
- Research Methodology
- Data collection instruments
- Work plan with milestones and deliverables



Professor Andrew Price
Loughborough University

Over the years Professor Price made a remarkable contribution to the research community. The previous issue of the ARCOM newsletter reported on some of Professor Price's achievement. In this article, Professor Price shares good practice from his valuable research experience.



Supervising PhD studentsContinues

Planning the research phases

Although the three year period for full-time research to PhD may appear more than adequate, this may lead to a sense of false security and if progress is not planned and control the student will run out of time at the end of the research. The situation has improved over recent years with planning skills being recognised as key to successful research. Also the use of word processes has enabled students to write up most of their research as it is ongoing and not leave it until the end of the three years. The importance of publishing in good quality journals and conferences has provided to opportunity to develop interim deliverables. However, the research must be broken down and planed as key phases to enable progress to be monitored, these phases usually include: Literature; Objectives and scope; definition; Data collection; Data analysis; Model or framework construction; Validation and verification; and Writing up.

Key deliverables



In addition to using phases of a project to monitor progress, it is import that key deliverables are identified and produced as work progresses. These should be used by the supervisor to check that tasks are being complete to an appropriate quality. These should be mapped on to the research programme and usually include: project definition; annual updated work plan and deliverables; literature review; flow chart for research methodology; flow chart for thesis structure; research instruments; data and analysis; contribution to knowledge; annual reports; conference and journal papers; thesis chapters; and final thesis. External publications are import deliverables and in construction management a stretch target could include: three conference papers produced throughout the research; and three journal papers produced and sent to publishers towards the end of the research. The papers should be linked to individual chapters and used to monitor student's progress.

Thesis presentation

As groups or Departments produce a number of students a presentation house style tend to emerge as students refer to previous Thesis. A good house style is important for consistency and efficiency. Thesis house style can have three key elements:

Thesis structure - Specific Chapters

Thesis layout - Tables, Figures, Headings, References

Thesis writing style - Positive, technical avoid first person etc.



It should be possible early on in the research to agree with students Specific Chapter Headings. This will help the student to envisage what is going to be produced. It will also help them to avoid wasted effort on work that will not appear in the final thesis. If a structure is visualised students can ask them where will this work appear in the final thesis.

The Viva

It is possible to prepare the student for the viva, in doing so the supervisor should: emphasise that this is not a typical exam but a defence of the thesis; clarify what the student should and should not defend; and attend as an observer if the student wishes. The conduct of the VIVA varies slightly from institution to institution, and all examiners have their individual approaches. These tend to be modified depending on the Thesis being examined. It is crucial that the Thesis is present to a high quality, which enables the Examiner to understand and appreciate the research without having to over come the barriers due to poor English and presentation. Throughout the research the student needs to be reminded of the potential requirement of the VIVA. The research will generally be assessed as:





An analytical system for space planning on construction sites

ABSTRACT

Effective construction planning is essential to the successful completion of a construction project. Although workspace requirements are essential aspects of construction planning, they are often either overlooked or left to the intuition of the construction planner. Emerging computer based techniques are becoming predominant within the construction industry. In recent years, the development of four dimensional computer aided design (4DCAD) has particularly proved beneficial to construction project planning practice. The purpose of this study was to develop a novel computer based method to allow workspace, required during the construction process, to be planned and analysed using 4D CAD techniques. It is predicted that this approach will allow potential time-space conflicts to be foreseen.

Based on a review of a large body of work, it emerged that specialist trade contractors were one of the primary parties affected by spatial constraints. Consequently, industrial case studies were carried out on UK construction sites to observe workspace planning practices for a general contractor, a groundwork contractor and a mechanical and electrical contractor. As a result, a conceptual framework was put forward to depict software development requirements to assist construction space planning and analysis. Using the framework as a basis, an approach was developed to represent the key processes required to plan construction workspace using a 4D methodology. Based on the proposed approach, a software tool was developed, the Specialist Trade Site Space Analyser (STraSSAn). The proposed tool allowed a CAD based product model to be formalised into a product breakdown structure, compliant with the Uniclass standard. The scheduling of construction tasks used a novel interactive 3D scheduling technique. The product model could then be decomposed into dynamic

weekly geometry through use of an innovative method of decomposing 4D product geometry. Dynamic weekly site plans could then be generated and various contractors could allocate required workspaces. Potential time-space conflicts could be detected, and the severity of these conflicts could be analysed using a numeric Space Conflict Classification value. Subsequently, the construction process could be visualised in a 4D virtual reality environment, which included for the building product evolution and workspace requirements.

Finally, construction practitioners evaluated the implemented prototype to test its usefulness for space planning requirements. It emerged that the implemented tool had achieved the fundamental requirements of the proposed conceptual framework. Furthermore, the evaluators deemed the software as having potential to assist space planning throughout the construction process.



Dr. David Heesom
Univ. of Wolverhampton

David, completed his PhD in 2004. His PhD abstract makes a n interesting reading in this column.

David, many congratulations on your achievement.

New Chair !!!

Congratulations to David Boyd for his new professorship chair at the University of Central England. David has been the treasurer of ARCOM for a number of years and made a valuable contribution to the construction research community. A chair well deserved .



Professor David Boyd

On behalf of ARCOM and its members we wish Professor David Boyd every success for the future.



Book review

Introduction to Building Procurement Systems

by Jack W.E. Masterman, Spon Press

Published 2002, 239 pages, £29.99.

ISBN 0-415-24642-3

I really liked the first edition of this book from the perspective of both a student of building procurement and more recently, as a lecturer in contract administration and practice. This eagerly awaited second edition is written

in the same clear and easy to follow style and adopts a similarly logical and systematic approach to its coverage of the various procurement options. The chapter structure leads the reader through the project implementation process and the nature of the industry's clients, before going on to cogently discuss the three generic procurement routes - *separated*, *integrated* and *management-oriented*. In this edition, Dr Masterman also defines a new category of *discretionary* procurement systems, which he uses to categorise the British Property Federation system and partnering. Other variants are also dealt with in a separate chapter, before the various mechanisms for selecting the most appropriate system are discussed. The book also explores possible trends for construction procurement in the future.

The particular strength of *Introduction to Building Procurement Systems* is its explanation of the principal advantages and drawbacks of each approach under clearly defined performance criteria. This leaves the reader with a well-developed understanding of how different procurement routes can influence desired project outcomes. This is facilitated through the use of clear diagrams, tables, models and practical examples. On the downside, it could be criticised for adopting a rather UK-oriented focus and for its rather cursory treatment of Public Private Partnerships, which are arguably going to be increasingly significant in the future. However, these issues do not detract from what I would regard as one of the most readable construction procurement texts. I would strongly recommend it as a core text for students and practitioners with an interest in understanding the various approaches to building procurement.



Dr. Andrew Dainty
Loughborough University

In this article, Andrew shares his thoughts of a book reviewed.

Let us share a smile !!

Three men and a genie

A project manager, a superintendent, and a field engineer are in Ft. Lauderdale for a two-week period helping out on a project. About midweek they decide to walk up and down the beach during their lunch hour. Halfway up the beach, they stumbled upon a lamp. As they rub the lamp a genie appears and says "Normally I would grant you 3 wishes, but since there are 3 of you, I will grant you each one wish."

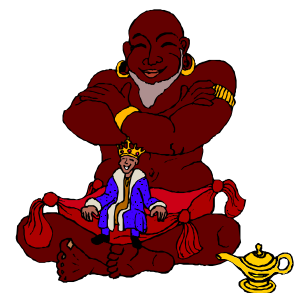
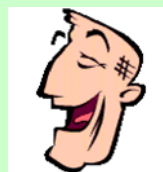
The superintendent went first. "I would like to spend the rest of my life living in a huge house in St. Thomas, with no money worries and surrounded by beautiful women who worship me." The genie granted him his wish and sent him

on off to St. Thomas. The field engineer went next.

"I would like to spend the rest of my life living on a huge yacht cruising the Mediterranean, with no money worries and surrounded by beautiful women who worship me."

The genie granted him his wish and sent him off to the Mediterranean. Last, but not least, it was the project manager's turn.

"And what would your wish be?" asked the genie. "I want them both back on site after lunch" replied the project manager.



The editor is known for her bad taste of jokes !!

Share a smile with our readers and post us your favourite joke or funny research story.

Get in touch with us and contribute

For comments, ideas, articles, events, photographs, news in general, research experiences, achievements, workshops, funny stories, serious stories...

...anything that you would like to share with other members, through this newsletter please contact the editor, Dr Vian Ahmed.

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Committee Members

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