

Optimising Space through macro and micro planning and scheduling

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Key words:

Planning, Optimisation, Sustainable, Verifiable

The presentation will explore how research into the development of powerful scheduling algorithms can now be applied to validate a University's space plan. Traditional methods of projecting space requirements have contained significant elements of guesswork, based upon the discipline to be accommodated however recent software developments can now take the guess work out of these projections. Institutions will stand to save considerable capital and operational resources through implementing this approach. The presentation will focus on not only on the research but also provide examples of where this research has been applied.

Facilities planning has often taken place without any direct link to the academic activities it seeks to support. By integrating space projection tools with the detailed academic curricular activities, it is possible to gain a strong understanding between the academic programs and the facilities required to support their delivery. Integration of space projection and event scheduling means that it is possible to have confidence in the outputs of the facilities planning exercise. This ensures that the resources required to build and maintain the physical form are both appropriate and efficient.

New campus developments are extremely expensive, in some cases, well over US\$500 million. The return on this investment is driven by the teaching and learning and research activities of the University as, over time, they train graduates and produce research to serve the needs of their country and region. However new University developments are often poorly planned, resulting in either too little or too much space being constructed. If too little is provided, the University can not operate at its full potential; if too much is provided, millions of dollars of capital and operational expenditure are wasted.

Through adopting an integrated approach to space planning and event scheduling, it is possible to satisfy internal and external stake holders that the proposed new build is optimal. In mixing the macro world of space projections with the micro world of event scheduling, it is possible model numerous scenarios and identify the optimal scenario for the provision of new facilities.

The intended primary audience includes senior University executives, academic planners and facilities planners. The presentation will illustrate a new approach, based on recent research, for an entire new University, or new campus development or new building. The audience will be invited to share their experiences of pitfalls of facilities planning, which will be used to illustrate how this new model can be contextualised. Handouts will be provided, as well as more detailed on the case studies.

Outline of the session:

1. Scoping the Issue
 - a. The cost of poor planning, UK estimates on capital and operational wastage
 - b. Developments in scheduling algorithms
 - c.
2. Macro and Micro Planning and Scheduling
 - a. Critical review of traditional space projection techniques
 - b. Fleshing out the detail – taking space projections to the activity level
 - c. The use of scheduling tools and its application to space projections
3. Case Studies
 - a. United Kingdom examples of integrated space planning and event scheduling
 - b. Middle East examples of green site planning using this technique
4. The Model
 - a. Strengths and weaknesses of the model
 - b. How the model can be applied at the participants institution