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Project Proposal	Document Sharing

Introduction

The day-to-day management and running of facilities has moved from simply 'turning on the lights in the morning' to a more complex task of ensuring a building can function normally throughout its entire life cycle. Computer Aided Facility Management (CAFM) software has evolved into very complex, sophisticated and vital tools to aid and assist those responsible for the day-to-day management and running of a facility or building and to improve environments for staff and visitors. Nowadays it is much more beneficial to all concerned to take control of a facility prior to occupancy with as much information as possible in the form of digital databases rather than be handed a static 'Operation and Maintenance Manual' comprising of paper documentation to help support facility managers achieve their goals. (See Fig.01)

At the design stage of a building project a design team may work on details of the design relevant to them and compile this information into an O&M Manual for handover of a completed project by a required date. Traditionally this was considered acceptable, but with advancements in technology and in particular information and communications technology (ICT) we are seeing greatly improved and efficient ways to put this information at the fingertips of facility owners, operators and clients. Building Information Modelling (BIM) is a process of collecting, organising and managing data in a digital software environment for use in the full life cycle (design, build, operation and demolition) of a facility. (See Fig.02)

An approach such as using BIM to achieve better results like, for example, increased efficiencies, minimising duplication of data, reducing time taken to retrieve important information, improving decision making etc. can seem very daunting to some, particularly if a specific task has been

undertaken in the same way for a long time. An existing employee might think “if something is not broken then why fix it?” but should this opinion be accepted by a facility owner if they are to hope to improve various elements of the operation of a valuable asset? Also, is it possible to improve on efficiencies if BIM was not implemented at the beginning of a facilities life cycle?

Information collected, organised and managed in a model can be used for a wide range of valuable and important everyday tasks and a review of existing and proposed Computer Aided Facility Management (CAFM) software tools can be seen as a possible solution to some, if not all, problems that occur when using traditional ways and thinking in relation to facility management.

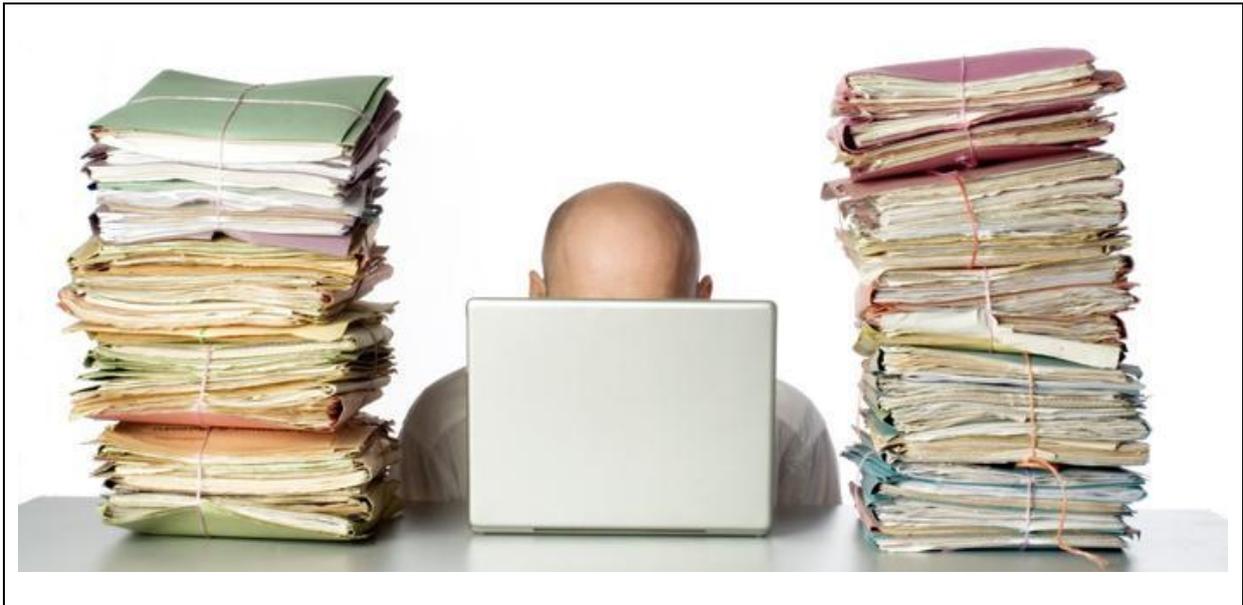


Fig. 01 – Operation and Maintenance Manual Handover

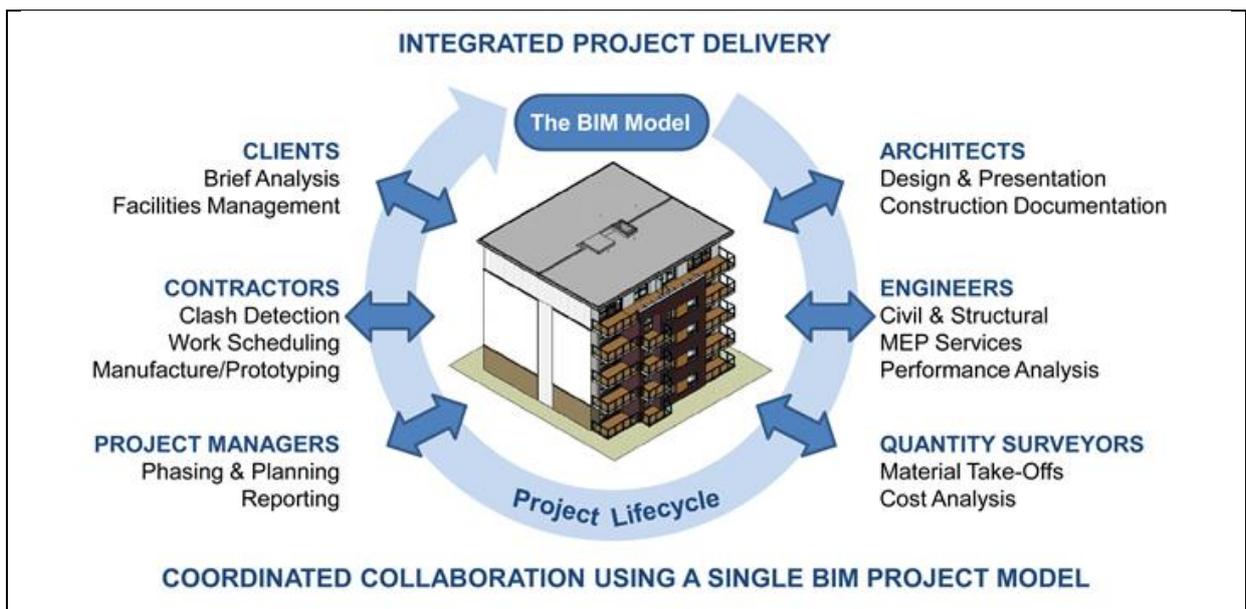


Fig. 02 – Building Information Modelling and Integrated Project Delivery Method

Project Aim and Objectives

The main focus of this project will be to review the current organisational structure and existing systems and processes in place within a large university and to investigate solutions to particular problems with workflows and data storage techniques. While reviewing the existing way in which valuable data/information is collected, stored and shared within a large organisation and the issues associated with methods already in place, I will also review how a Small to Medium Enterprise (SME) might overcome the same issues and report on possible implementation strategies that could be undertaken or put in place to combat and remove these. *Measuring change brings the perception of value in line with actual value. When an organisation fails to measure progress in any change process, resistance to change is likely to increase throughout the organisation, even if the change is beneficial. We just don't remember how bad things were, so we don't see what the big deal is about where we are (Building Information Modeling: A Strategic Implementation Guide for Architects, Engineers, Constructors and Real Estate Managers, Dana K.Smith, Michael Tardif 2009).*

Project Structure

The project will be based around the existing CAFM tools available to a large university and analysis of problems with these by reviewing particular aspects of data/information collection, storage and sharing. The importance value of data will be assessed and potential issues such as data duplication and/or data loss reviewed to help evaluate how efficient and time consuming an existing workflow might be over a new improved workflow were it to be introduced into the organisation. For the purposes of this project it will be necessary to view the data to be analysed as having been gathered and stored over a long period of time and this data as having been 'historic' by nature rather than setting out on a data gathering exercise from the initial concept/design of a facility

As outlined in the 'Project Briefing' the main structure of this project will be as follows:

- Define the role of informatics in society in general and in AEC in particular
- Describe the strategic importance on the informatisation of the AEC sector
- Explain the potentials of construction informatics in general and of various specific application areas
- Discuss critically the specific problems of construction informatics

Project Conclusion

The project will aim to research and identify possible improvements to day-to-day data collection, storage and sharing methods used in a fully operational facility and outline benefits that may be achieved should new processes or systems be put in place. It is hoped that improvements in the existing methods can be reported and improved on if and when encountered.

Software Tools

TBC

Project Information Sources

BIM Handbook: A Guide to Building Information Modelling for Owners, Managers, Designers, Engineers and Contractors, Second Edition, Chuck Eastman, Paul Teicholz, Rafael Sacks, Kathleen Liston 2007

Building Information Modeling: A Strategic Implementation Guide for Architects, Engineers, Constructors and Real Estate Managers, Dana K.Smith, Michael Tardif (2009)

Phenomenological Foundations of Conceptual Product Modelling in AEC, Ziga Turk, International Journal of AI in Engineering 15 (2001) 83-92