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THE benefits of 3D digital modelling in construction and building maintenance are being tested on the Sydney Opera House, with initial signs promising.

The Cooperative Research Centre (CRC) for Construction Innovation, through its Sydney Opera House Facilities Management Exemplar Project, has found the approach can save time while improving the operation of the iconic facility through the provision of consistent, accurate and current data, enabling faster and more effective management.

Because the Opera House was completed without the assistance of even basic two-dimensional digital drawings, and varies from the architect's original drawings, it has no definitive set of plans or documentation incorporating service changes made over the years.

"The lack of consistent data in a single source has become an ongoing issue to the management of the facility, one that the exemplar project aims to resolve," the CRC said.

The project was started in April 2005 with a two-year lifespan. Since that time, CRC researchers have developed strategies to best respond to the direct needs of the Opera House while gaining knowledge about the most current facilities management systems available.

The three main research areas of the project are building information modelling (BIM), benchmarking and procurement.

The first stage of research on the BIM section has been completed, bringing to light a number of significant opportunities for the Opera House. It has also highlighted the possibilities the technology holds for the broader construction and facilities management industries.

The CRC said the BIM process did more than record the physical structure of a building; it also incorporated huge amounts of servicing, maintenance and costing information.

"This type of digital modelling is called a rich model as it includes all information about objects within a building, such as lifts, ventilation and fire systems, and importantly the relationship between them, in a single repository, ensuring consistency, accuracy and up-to-date access," the group said.

The Opera House has a multi-million dollar annual budget for maintenance and employs 40-50 maintenance technicians, additional external contractors and another 200 workers each week.

"All demand an excellent management system. A BIM system that shares information, saves time and makes cost-planning a reality is one Sydney Opera House is enthusiastic to implement," the CRC said.