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Issues- Value of Digital FM

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1.0 Introduction

This research paper looks to explore the complexities of Building Information Management (BIM) implementation in assisting Facilities Management (FM). A focus of the research paper is to explore the potential value from digital assets and the move towards the Government's prediction of 33% lifecycle saving for digital construction and operations. It looks to provide an overview of the challenges facing implementation of digital technologies using a higher educational (HE) case study. [Digital Britain HM Government \(2015\)](#)

It has become apparent that this is still very much a contentious topic especially within the public facilities management sector with growing opinions still unsure whether they are for or against BIM support within facilities management. The intention within the researched paper is to provide a representation of the key elements ascertained from the various lines of research whilst also looking to provide a systematic analysis of how BIM digital solutions aim to address and support facilities management higher education sector.

Initial research and evidence has been, gained from books, academic journals, white papers, current news articles, government information, organisational documents, and websites. This was used to develop my own opinions of BIM usefulness within FM. Further to the research in the pursuit of practicable perspectives, interviews were held with key estate personnel associated with BIM at the University of the West of England. By conducting a more objective approach, with UWE used as a case study, it helped determine an understanding of the challenges that BIMFM brings about in the higher educational environment.

2.0 The Building Information Model

There are currently four levels of BIM (scaled 0 -3) with level 2 being classified by the UK Government as the minimum target level for all public sector work as of April 2016. This means all those involved with the running and operation of existing public sector (HE) environments higher will need specific detail, knowledge and understanding of BIM if they are to continue acknowledging a new digital environment. [Appendix 1 – BIM Level Overview.](#)

The benefits of BIMCAFMs are found to be well documented and some of the key ones are shown below; [Deriving Meaningful data from FM software and BIM Service Works Global \(2018\).](#)

- Access to 3D model for placement of sensors and sensors, is valuable when investing in control and monitoring systems or IoT. (Internet of Things)
- Access to graphical reports and lists of areas, spaces, rented space, etc. makes it easy to see what spaces are available or what rooms to be cleaned and in what way.
- Provides accurate information about surface coverings on floors, walls and ceilings which can be used for calculations at refurbishment and renovation, e.g. when replacing floor coverings.
- Allows you to view areas for ventilation, heating and water for installation and troubleshooting
- Reduces damage costs and disruptions in operations in crisis management, such as water leakage, through quick access to accurate building information (round the clock).
- Improves building user satisfaction by handling reported complaints quickly and accurately.

- Reduces / helps to avoid unnecessary inventory, as the building information is already collected and available.
- Allows you to work more environmentally and make fewer trips as the need for site visits to check information, such as the type of equipment and or component to be, replaced is minimised.

All building information can be, used by all employees, and invited external partners, on computers and mobiles, saving time and money as well as increasing quality as everyone has access to the same information.

Despite the industry growth of BIM since 2016 within the design engineering and construction environments, challenges are still highly prevalent. In order for these challenges to be managed, to enable this to happen a greater emphasis should be placed on a collaborative focus prior to target date 2025.

A recent NBS survey supports this suggestion stating a third of respondents are not clear on what they needed to do in complying with the HM Government BIM mandate. One of the main reasons for this may be due to a lack of understanding compounded with limited education of these government BIM directives enabling clients to benefit from them. [BIM Mandate HM Government \(2017\)](#)

Further NBS statistical information suggests that just over half of those survey agreed that the government was heading in the right direction with its program of BIM with the industry seeing growth from around 2014. The survey also stated that work, still needs to be, done with over 65% of the survey result suggesting BIM has potential to bring benefits beyond the project design element however, of those surveyed 72% believe clients will still not fully understand the BIM benefits. [National BIM Report NBS \(2017\)](#)

The Case Study University itself understands the benefits however; they cannot manage this yet with the challenges of data and software compatibility.

Both professional and academic researched feedback have indicated concerns in relation to the overall implementation and level of involvement required of BIM to enable its integration with current Computer-aided facilities management systems (CAFAM). There are also concerns raised with the constraints of data management, training requirements, and the time needed to implement BIM facilities management strategies. [Edirisinghe R, Anne K, Kalutara P, Aranda-Mena G \(2017\) Building Information Modelling for facility Management: are we there yet?, International workplace report RICS \(2014\)](#)

It is worth noting that in 2016 The Royal Institute of Chartered Surveyors (RICS) were able to provide the world first certified BIM training programme. This has led to other BIM courses being, developed by other training providers although, mostly due to the costs, training is not on the agendas of some other fellow institutes. [Training and Events RICS \(2018\)](#)

Although some industry professionals and or stakeholders argue that in terms of BIM integration barriers still need addressing, as they are perhaps still too complex with investment paybacks being unrealistic. [BIM4FM Survey BSRIA \(2013\)](#)

Benchmarked data, received by the UWE BIM representative suggest projects being, done demonstrating cost savings. [Appendix 3 – Higher Educational Case Study Information.](#)

Whereby the technology suggest its key benefits are the time and money saved with having access to digital building information.

Who knows what the future holds going forward but the reality in meeting government mandate targets for the digital Britain will inevitably require serious investment into this type of digital technology.

3.0 Current Challenges representing BIMFM

The implementation of BIM within the design, planning and construction industry especially since the government mandate April 2016 has grown proportionally as education; awareness and usage have developed however, the chasm between the use of BIM solutions within the higher education existing building stock has been far less documented in contrast to new buildings.

This is despite the fact that new buildings only create a very small proportion of existing building stock. It's estimated that only around 2% of BIM is apportioned to design with 13% to new build construction leaving a massive 85% outstanding to operation and facilities management elements. Therefore, we are now starting to see a major change in the acceptance, education, awareness and integration of BIM especially within the higher education sector.

Currently, one of the key challenges facing the higher education industry when looking into how they embrace the era of digital BIM consolidation with facilities management is how the method of informing the model with as-built drawing information will be completed.

It's understood the rights of BIM data are still a contentious area of discussion and debate through reasons of copyright protection and other governmental factors, which are still yet to be agreed upon. Therefore, another question would be is who is accountable for producing and retaining the model through the life of the building, as this element in itself still, seems extremely vague.

In relation to evaluations made and possible advantages using researched documentation into the use of BIMFM it's become apparent the need for enhancement of all handover processes. It's broadly anticipated and assumed that if information collected through the use of a BIM process throughout a buildings lifecycle progression it will help aid and facilitate a reduction in costs and or time required to both collect and build facilities management systems with the ability to replace and make use of the data.

According to a survey conducted by the BIM task group in 2013 *"Early FM involvement is seen as a key opportunity for facilities management in the BIM4FM"* [BIM4FM Survey BSRIA \(2013\)](#)

It's soon becoming evident from the research evaluation that any form or adoption in relation to BIMFM will undoubtedly need permanent monitoring procedures that capture refurbishments, and all modifications in order for the model and data to continue being appreciated.

The BIM4FM survey 2013 also supported this by emphasising that there is a challenge around the initial costs of software, but staff training is also a cost that has to be, allocated. [BIM4FM Survey BSRIA \(2013\)](#)

A further report written and published around 2013 by RICS recommends that the BIM4FM Group should look to develop further understanding of BIM within professional organisations and in partnership with computer software developers to safeguard the BIM digitalisation within the operation of buildings. [FM Behind on BIM RICS \(2013\)](#)

One of the main factors For RICS to recommend the statement above was due to the survey they conducted at the time with industry professional that conclude over one third of facilities management experts were ignorant when it came to understanding BIM ability to support them and their buildings.

Although a government poll taken around a similar time and supported by BIM4FM concluded a slightly different viewpoint. They established that around *“65% of those experts surveyed were indeed aware of BIM with a further 62% agreeing that BIM itself would support facilities management functions”*. However, an estimate quarter of experts also suggested they already adopt BIM processes within their building projects. This feedback led the BIM4FM to agree that facilities management sector are, still confused by the capabilities of BIM by thinking it is just a 3D modelling software platform. [BIM4FM Survey BSRIA \(2013\)](#)

According to the 2016 NBS survey, 65% of respondents believe BIM is not sufficiently standardised, yet 22% neither agree nor disagree and only 13% disagree, possibly caused in part by the array of software solutions currently in the market place. [National BIM Report NBS \(2016\)](#)

4.0 General FM Industry Practical Applications

In order to seek further professional opinions and practicable applications in the integration of BIM within the higher educational sector contact was, established with a representative at the UWE. This opportunity allowed consideration and perspective from a University environment as a case study approach.

The UWE representative describes the projects and challenges they have brought to the UWE in relation to BIM. These implied challenges faced by the UWE were in relation to their new build projects and the '3D Modelled Buildings'. The difficulty was how they could prevent contractors sending them models lacking information.

In discussing this a little further, the UWE described one of the buildings as an academic environment (Faculty of Business and Law) and the other was their new student accommodation (Walls Court Park 2). It became apparent through this communication that both buildings had their own set of issues, which mainly surrounded the level of information. For example, WCP 2 handed over to the UWE with six separate models, with the mechanical and electrical and asset information missing. Whereas the FBL building had far better detail handed over to the UWE, which included full mechanical and electrical and asset rich information.

These experiences and lack of information in regards to new build have had a positive impact for the UWE as they have completed a major review of its own processes in relation to BIM. Their decision to invest and develop processes has been, seen to be a positive step in the HE sector and has help understand how the UWE can use BIM data and more importantly how they manage BIM within the existing estate.

From an FM perspective, the current CAFM system utilised by the UWE in relation to their day-to-day operation and maintenance has left representatives that control these software platforms in some respect at odds. The UWE CAFM system has already, been developed to support UWE and is still being invested in with all staff and contractors trained in its usage.

The major challenge this now presents is that UWE BIM team wishes to invest and further develop BIMFM by using another software platform called but unfortunately this system does not currently interface with the current UWE CAFM system so in effect no data sharing can take place meaning they operate as two completely separate systems.

Currently the UWE has met the government targets set out in May 2011 for 'collaborative 3D BIM' with all project and asset information, documentation and data being electronic, by 2016. The UWE aims to continue complying with this process and work towards BIM level 3 maturity. To assist with this process the UWE have developed a range of documents to achieve this goal and these documents are describe further within [Appendix 2 – Controlling the Process](#).

5.0 Integration of BIMFM into Existing Estates

It has become apparent from this research that the main discussions informing BIM mainly support new constructions projects.

The disadvantage to this is becoming more evident in that new buildings only account for a fraction of existing building stock meaning that facilities managers, clients, occupants and owners especially within the higher educational establishments recognise this and are starting to implement plans for digital laser scanning techniques to be conducted. This provides method of converting these scans into valuable digital data along and 3D models whereby allowing facilities managers evaluate lifecycle analysis options for future refurbishment offering the client more accurate budget forecasting. The UWE for example have just completed digital scanning process of their Bower Ashton campus that covered around 10,000m² of space and included scanning above ceilings at a cost of £60k.

6.0 Conclusion

The key factors established from this research paper identifies the need for all BIM experts to work at a greater pace in support of the facilities managers who operate and maintain existing building portfolios. Early partnerships with Facilities management could assist in enabling the transfer of skills and expert knowledge in relation to existing buildings. This would be of great benefit especially if the future government BIM mandates are to be successful in being promoted through the public sector and further afield.

It would be a fair assessment that from analysing survey results from around 2013 onwards that the industry have seen a positive growth with the digital Britain implementation of BIM however, this is still predominantly in relation to new build construction projects. It still seems a contentious topic within the FM sector with many still sceptical on whether they are for or against BIM support within the FM, in part possibly due to the complexities surrounding the terminology used which confuse the capabilities of BIM within the FM sector allowing them to think it's just a 3D modelling software platform.

Evidence tends to support this comment in some respect as its estimated that only around 2% of BIM is allocated to design with a further 13% to new build construction projects leaving a major proportion of 85% outstanding to operation and FM elements in relation to higher education or public sector estates.

It seems higher educational sectors from a BIMFM perspective still have a long road ahead if they are to meet the proposed 2025 government targets, especially in the implantation of costs, education, training, software platforms integral and common to the BIM process. They also need to take into consideration evaluations into how the BIMFM structure will be, physically managed operated and maintain through the life cycle of buildings.

The decision from a case study UWE estates facilities management perspective is if they do not engage with the relevant parties and embrace some form of common approach to BIM we could end up with limitations and technical constraints such as current building portfolios being far less documented and or studied in relation to new builds. This could theoretically lead to a reputational

stigma across other highly recognised educational environments in relation to the government mandates and implementation of digital BIM technology.

After conducting interviews with the UWE BIM manager, I'm of the opinion that the complexities of integrating BIM with FM still exist within this and possibly other public sector environments. It's seems apparent from a UWE FM perspective that insecurities to BIMFM may have been inadvertently influence by the challenges described by the UWE case study new build projects specifically in the limitations of BIM model data and asset collection.

BIM is being, promoted from a project perspective but it is still evident there is a void to full in relation to BIM integrating with existing estate properties and FM. If you are to promote BIM within FM then work must be, done to alleviate industry concerns in particular reference to managing incomplete data.

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Appendix 1 – BIM Level Overview

BIM Level 0 - Used by only a few parties and is generally a paper based method with information transfer as hard copy formats and involves 2D CAD.

BIM Level 1 – Generally, a more improved solution compared to Level 0 however, it uses 3D CAD at a concept stage and 2D designing. There is some information sharing via a common data environment (CDE) but no evidence that supports other party disciplines who own the information.

BIM level 2 – This is an assessment of BIM development, defined by a British standard in a collection of publicly available specifications: BS1192 and a suite of PAS1192 documents. These standards have been partially superseded by ISO 19560-1 and 19560-2: Information management for BIM. Classed as a step in the right direction for BIM allowing all parties to utilise 3D models. Information at this level is largely shared data formats and it has a distinct advantage to how this information is shared to all parties.

BIM Level 3 – Usually referred to as Open BIM and it denotes co-operation between all parties by the use of a collectively shared project model accessed which allows full access by all parties concerned. It is likely that BIM level 3 will involve multiple parties working on the same model across a wide area network or the web. This may result in all disciplines (Architects, Structures and MEP (Mechanical Electrical and Plumbing)) working on the same live model for example. The governments overall aim is for all public sector developments to be performing at level 3 by 2025.

Industry Foundation Classes (IFC) – In its simplest form a software information collection and sharing platform used by many in the public sector established by buildSMART to simplify interoperability in the building environment. It allows for information integration between other important BIM software solutions such as Revit design modelling platforms.

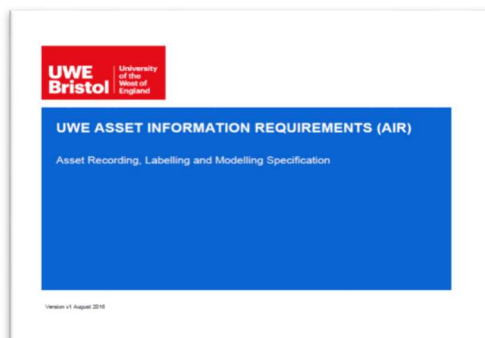
Construction Operations Building Information Exchange (COBie) – Similar to the IFC described above and widely used within the construction industry, building developments. It allows for information integration between other important BIM software solutions such as Revit design modelling platforms.

Appendix 2 – Controlling the Process



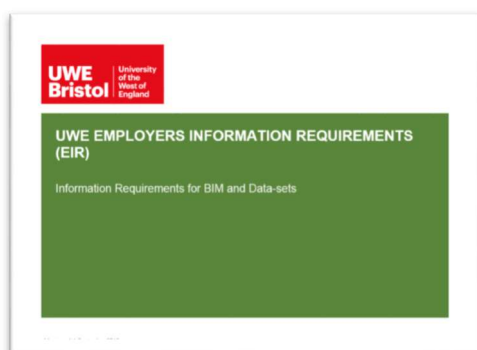
BIM Objectives

Describing what they have done, what they want to do, who's involved, levels of resource required to reach objectives, times scales, risks and opportunities.



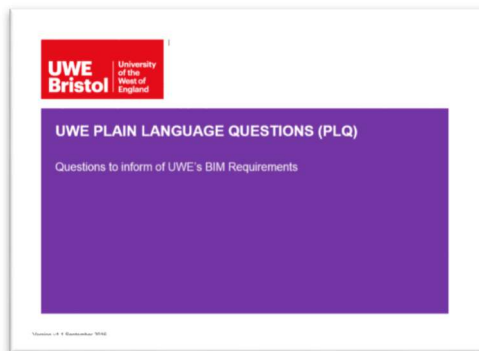
Asset information requirements

This is a document commonly referred to by PAS1192 along with the Employers information requirements, the BIM execution Plan and the Plain language questions. The AIR describes the level of asset information that we want to capture. We also have an accompanying asset management spreadsheet, this document also instructs on how to use it.



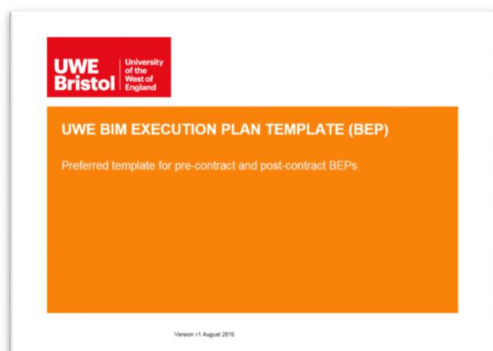
Employer's information requirements

This document describes the level of graphical detail that the model should contain and when during the design and construction process we want to receive information.



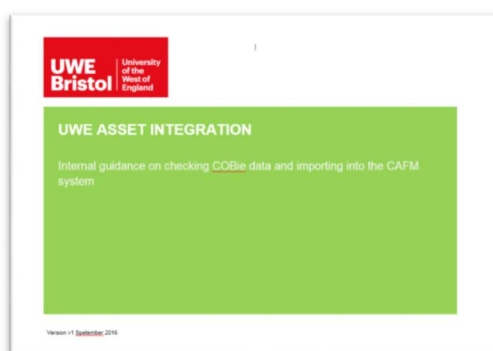
Plain Language Questions

Very simple questions and answers designed to give a designer or contractor an impression of UWE's BIM capability.



BIM Execution Plan

This document is a template for pre-contract and post-contract BEPs

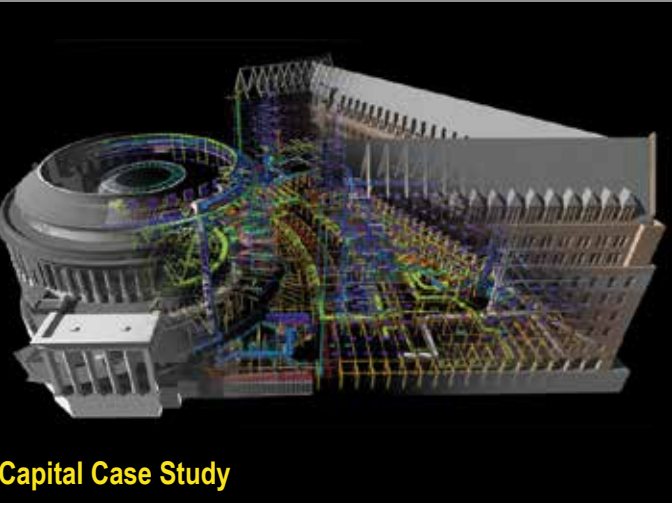


Asset Integration

Internal guidance on checking COBie data and importing into the CAFM system.

Appendix 3 – Some example Higher Educational Case Study Information.

BIM CASE STUDY



USING BIM TO ENHANCE ON-SITE HEALTH & SAFETY (Manchester Town Hall Complex Refurbishment Project)

Summary:

This case study highlights Laing O'Rourke's innovative approach to using BIM as a site induction tool & creating visual method statements to enhance Health & Safety and workmanship on site.

Aims & Objectives:

- Provide clarity from day one of site safety requirements to all site personnel (Operatives & Managers)
- Use BIM to clarify demarcation of site boundaries, safe access routes & areas out of bounds
- This inner city site is very tight and can be quite confusing. The use of BIM helped to provide clarity for all.
- Use visual method statements to enhance workmanship and Health & Safety, by breaking down operations into logical visual stages.
- BIM virtual animation to fly through and around site, indicating all H&S issues on site during site inductions.
- Communicate visually to a multi ethnic workforce (English not first language).

Project Overview

Project Value

£100m

Contractor

Laing O'Rourke

Client

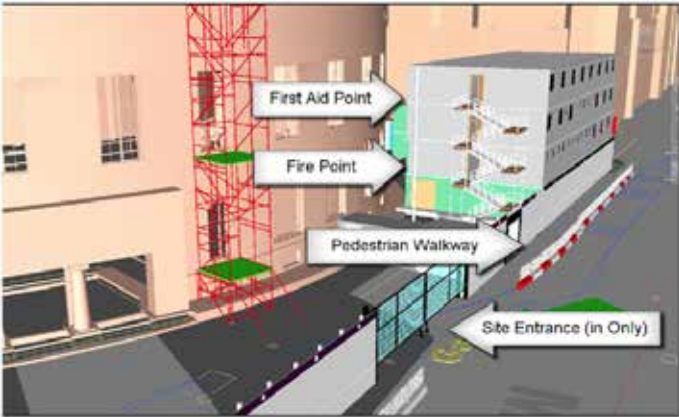
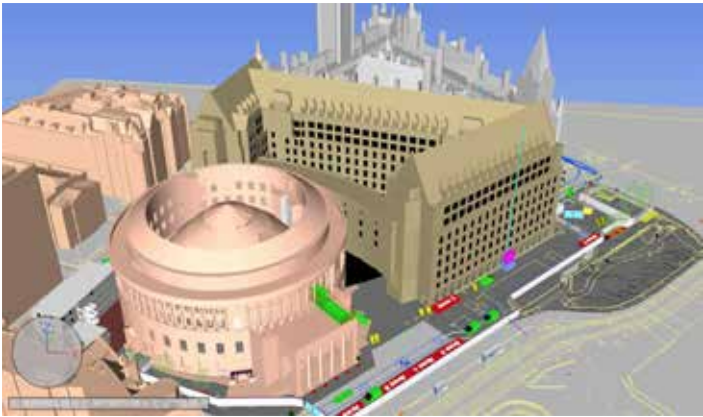
Manchester City Council

Start

April 2011

Completion

2013



Benefits & Value:

Using BIM provides clarity on a very complex site and reduces confusion and enhances on site Health & Safety standards.

Use of visual method statements enables works to be right first time, which reduces mistakes and saves time & money.

BIM can help explain complex information in a visual way that meets the need for a varying audience from all different backgrounds to understand how the site is laid out, things to watch out for, etc.

Quote: D. Grayson, Manchester City Council Lead Health & Safety Officer

"BIM has provided us with an extremely useful tool to familiarise staff on the design and location of fire protection measures and their Means of Escape prior to having hand-over/full access to the building. "

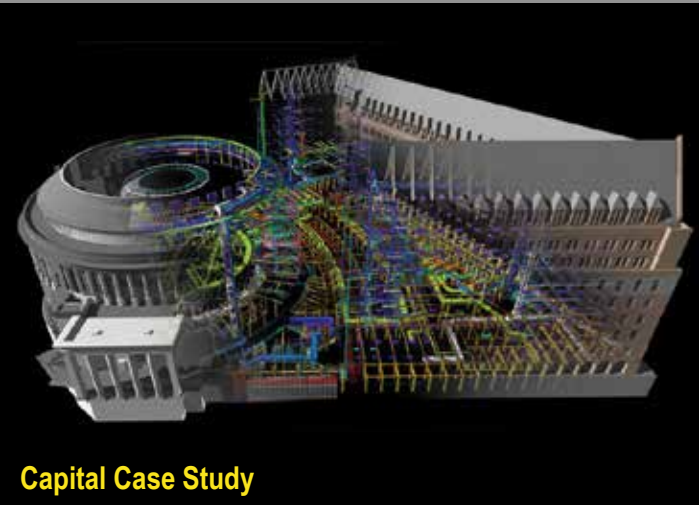
Quote: G. Fenton, Laing O'Rourke Project Manager

"We have used the BIM successfully on the Town Hall Complex Transformation Project to educate site personnel in variety of Health & Safety initiatives from site inductions, logistics and Fire & Emergency evacuation.

The use of BIM has given the construction team the opportunity to review tasks virtually prior to undertaking any physical works. By doing this the team could identify and understand hazards at an early stage and were able to introduce mitigation measures to manage risk before works got to site."



BIM CASE STUDY



Capital Case Study

THE GLAZED LINK (Manchester Town Hall Complex)

Summary:

With it's steel and glass technology, Waagner-Biro is at the heart of bold architectural visions, impressive contemporary architecture and the creation of widely acclaimed landmarks.

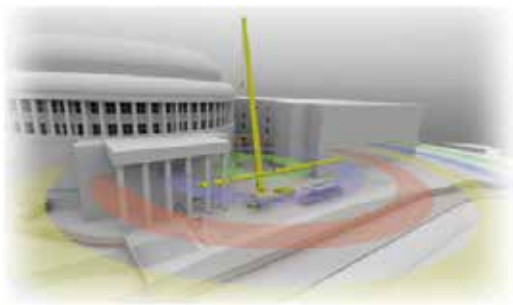
The Glazed link embraces this philosophy and the design has been developed using BIM technologies and has promoted positive engagement with MCC, has aligned the design, quantities and commercial model enabling collaborative involvement of conservation and heritage designers.

Waagner-Biro are also using BIM to manufacture key elements of the design and they are using BIM for the programming and sequencing of the on-site works including crane position, unloading material, crane usage, temporary structure, access, planning and ultimately cleaning repairs & maintenance.

Aims & Objectives:

The Glazed Link BIM was vital to give the full team appreciation of a very;

- An Innovative design
- Coordination during development concept and construction phases
- Phasing / Sequencing & logistics organised using BIM
- Design, quantities & commercial model all developed using BIM
- Direct to manufacture on key elements
- Used to give the operational team an understanding of a unique design / structure
- Vital to give the full team understanding of complex building



Project Overview

Project Value

£4m

Contractor

Laing O'Rourke
Waagner-Biro

Client

Manchester City Council

Architect

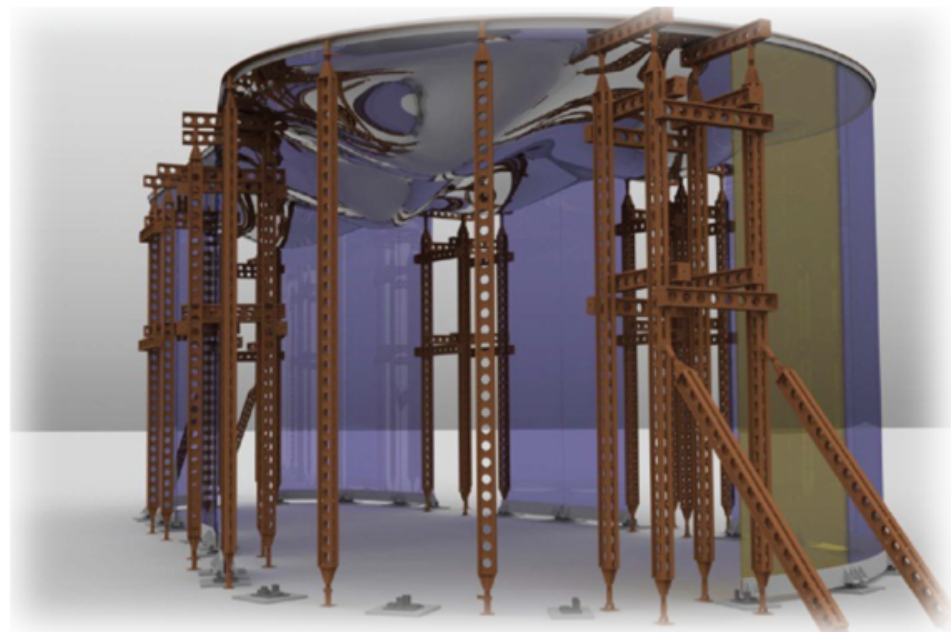
Ian Simpson Architecture

Start

April 2014

Completion

2014



Benefits & Value:

BIM has enabled MCC develop a very impressive contemporary design which will add considerable value and quality to the City Centre of Manchester.

Using BIM has enabled the design development and commercial model to be completely aligned and developed 'as one'.

60% reduction in estimation times

Impact assessment on change is fully coordinated regarding quality and time implications.

Robust cost impacts are predicted during the problem solving phase.

Waagner-Biro are proposing to use BIM for the programming and sequencing of works on site.

Quote: S. Williamson, Manchester City Council Commercial Manager

"Cost estimating and cost control is yet another aspect of the building process which has benefit from Building Information Modelling (BIM). By using BIM instead of a more traditional approach to estimating and cost control, measurements have been generated directly from the underlying model, therefore the information is always consistent with the design . When a change is made in the design the change has an automatic ripple to all related construction documentation and schedules, as well as the take offs, counts and measurements that are used by the estimator. "



BIM CASE STUDY

VERTICAL CIRCULATION CORE (Manchester Central Library)

Summary:

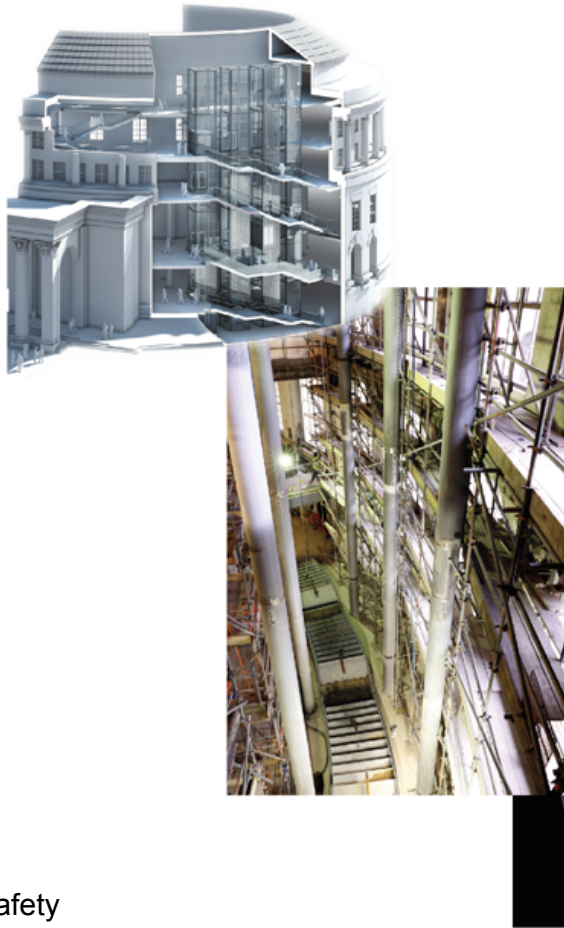
This Case study demonstrates the power of BIM as a communication tool to key stakeholders, design team & construction teams to provide the clarity required to undertake such an intricate and complex intervention in a Grade 2 Star Listed building.

Using BIM has enabled all parties to engage with confidence and absolute clarity during design development and during the Planning approval and heritage process. Laing O'Rourke's innovative use of the architects model to develop visual method statements for the Vertical Circulation Core by breaking down the sequence of works into steps identifying workmanship and health & safety requirements has enhanced understanding operational activities and the quality of the end product.

The time saved in consultation with stakeholders, English Heritage and MCC Design and Conservation Planner has been considerable when compared to a more traditional approach, this reduction in probably has potentially saved MCC £250,000 (10% off value) and untold frustration.

Aims & Objectives:

- Improved 3rd Party understanding of interventions using interactive model (see quote below)
- Provided greater operational understanding of building and structure
- Was vital to give the full team understanding of a complex building
- A useful tool for organising investigations
- Enabled Coordination through concept and construction stages
- Phasing and logistics organised using BIM
- Quantities taken from the model for programming logistics and phasing
- Direct to manufacture in key elements
- Coordination of modelled elements to services and structure
- Direct benefits to cost and programme
- Time saved in consultation with English Heritage
- Cost saved in construction £250,000 (10% off value)
- Use of visual Method statements enhanced workmanship and health & safety
(See images below)



Project Overview

Project Value

£46m

Contractor

Laing O'Rourke
URS Structural Engineers

Client

Manchester City Council

Architect

Ryder Architecture

Start

April 2011

Completion

2013

Benefits & Value:

Would the Vertical Circulation Core design been possible or approved by English Heritage in the time available without using BIM?

BIM has enabled the design team and MCC develop a very innovative and complex design solution in which they have confidence. BIM has contributed to developing and understanding the sequencing and programming of the works.

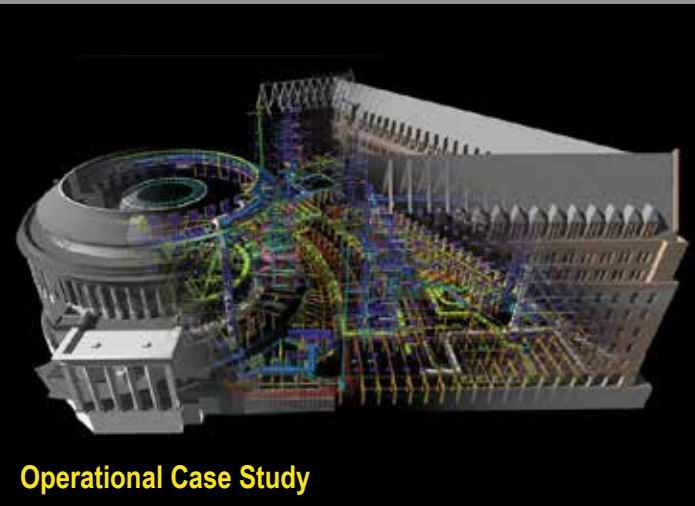
This clarity has saved time in consultation with English Heritage and has help enhance workmanship and safety on site. Value and benefits have been achieved during design, consultation and construction, using BIM has also reduced the programme which has potentially saved MCC £250,000 (10% off Value)

Quote: P.Mason, Manchester City Council Design & Conservation Manager

"The BIM was used during several consultation meetings on Central Library. In addition to drawings and rendered images, using the model 'Live' in presentations gave a unique understanding of the nature of the interventions and gave us greater confidence in our decisions and agreements on design."



BIM CASE STUDY



ALCOVE LIGHT REPLACEMENT (Manchester Central Library)

Summary:

This case study compares how historically one of the Alcove lights in a heritage area of the Central Library needed a detailed investigation on how the light could be repaired and how this would be managed if the Facilities Management Team had access to accurate and robust BIM data, the saving in disruption, time and money is considerable.

The anticipated saving having access to BIM is £108.00

Using BIM Technologies would have potentially reduced the investigational period from 6 week to 1 day (dependant on if a further asbestos test would have been required)

TIME LINE

TRADITIONAL METHOD



Initial Investigation

- Light fails to come on in an alcove on 1st floor (Heritage Area)
- Lamp type unknown, so area cordoned off to allow FM to access light via ladders
- 100W SON lamp but none in stock. Area re-opened until replacement of lamp can be carried out. (2 days wait)
- Staff/Customers not happy - conditions too dark to see books
- Man Hours for Labour - 2 hour

Further Investigation

- Area Cordoned off & Lamp replaced. Still not working.
- Electrician called in (1 day waiting time)
- Electrician struggles initially to isolate power as the 2x nearest fuse distribution boards are not adequately marked up.
- After further testing, the Electrician deems the lamps control gear (Ballast, etc) is at fault & assumes the kit is directly above the fitting in the roof void.
- Access to the control gear needs investigating
- Man Hours for Labour - 3 hours

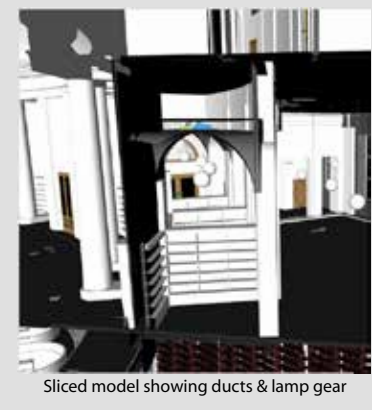
Outcome

- Access to the relevant void is worked out and nearest access point is via 2nd floor.
- Asbestos plans checked & initial access hatch area not identified as a risk.
- However, peering into the relevant duct route highlights that the area is extremely confined. Various H&S representatives also join in the discussion & further Asbestos tests carried out. (5 hrs)
- Due to many 'Unknown Factors' the job was never resolved.

6 Weeks
10 Man Hours

TIME LINE

USING BIM



Initial Investigation

- Model used to find out what lamp fitting is needed. Lamp replaced but not working.
- Electrician called to investigate. Electrician deems the lamps control gear is at fault & uses BIM data to establish that the kit is directly above the fitting in the roof void.
- BIM checked to show relevant access routes, duct space size, Load bearing, length of access point to source, asbestos presence, light specifications, etc.

Outcome

- With the detail provided from the BIM, a thorough Method Statement and Access/repair Method could be put together to ensure the safety of the electrician & to procure relevant materials/parts prior to commencing with the job, therefore minimising the need & risk to access the duct more than necessary and increasing the repair time.
- Alternative repairs maybe investigate (i.e. accessing the lamp kit from below but English Heritage would want reassurance on how this would be done. Therefore the model could not only provide Material information but also visual representation of proposed repair method.

1 Day
2 Man Hours

Benefits & Value of using BIM

- Anticipated cost Saving £108.00
- Time Saved man hours - 8 Hours
- Reduced disruption & inconvenience to Public/Staff.
- Avoids adverse reputational damage

Quote: P. Thompson, Manchester City Council Facilities Manager

"BIM provides an Operational FM Team the ability to provide right first time, every time solutions to everyday issues."

BIM manages multiple information sources and presents them in a logical manner that Operational Teams understand. This brings real savings in cost, time and effort and ultimately an enhanced service for my customers."