

Digital Handovers for the Built Environment





Three Reasons Why You Should Care

- 1. Digital delivery is faster, more accurate and cheaper than analogue / paper
- 2. Digital provides clarity plus visibility = Accountability
- 3. BIM, COBie, The Golden Thread, even the property world is now moving to digital

Traditional vs. Digital Handovers

It is estimated that approximately 95% of data captured in the Construction & Engineering Industry goes unused^[1] [FMI]. Moreover, approximately a fifth of UK construction firms say that their projects are entirely paper based [Autodesk].

This is due to organisations being unable to successfully structure, manage and process the vast amounts of data handed over on projects.

Traditional handovers are paper-based or a data dump of MS word or PDF files with scanned images embedded, that lack structure, usefulness and accessibility of the information contained.

Digital handover brings together all the necessary information containing building data.

Digital Handover benefits include:

- 1. Access at the speed of a search to all building data / information
- 2. Integration with 3D BIM Models
- 3. Interoperability e.g., ability to export to external software such as CAFM systems

Digital Handovers allow these benefits to be realised while reducing time in use and improving accuracy while avoiding unnecessary duplication.



The Golden Thread

Building information and data accuracy plus accountability via auditability are becoming encoded into law in the UK and in our opinion, will spread to other jurisdictions.

Following the tragic London UK Grenfell Fire in 2017, Dame Judith Hackitt's 'Building a Safer Future Report' highlighted the urgent need to change attitudes and behaviours towards building safety within the construction industry. The recommendations led to the need for critical collection, storage and continuation of data and information throughout the lifecycle of a building – this thread of data being "the Golden Thread".

Digital handover enables evidence of governance and compliance of building design and delivery of information within legislation and building regulations.

The Golden Thread provides a live archive of building design and handover information stored digitally that is authored, approved, and validated by the responsible parties, the process of which can be demonstrated through a digital audit trail.



BIM = Information Management

Building Information Modelling, 3D models or BIM adoption continues to grow and define the way information is defined, shared, and managed throughout the project lifecycle.

3D models are often thought of as the cornerstone of BIM. However, it is important to note that BIM is more than just 3D Models, BIM is about information management.

ISO 19650 is an international standard for managing information over the whole life cycle of a built asset BIM and is being increasingly implemented on projects across the world. ISO 19650 requires project teams to think of the various parameters and processes that ensure the right data is collected throughout the project into handover.

While BIM has provided a significant move towards digitisation within the property industry, there are still many construction companies and facilities managers unaware that they could easily and economically integrate the delivery of handover information and O&M Manuals within the BIM process itself.

To successfully implement a BIM-compliant digital handover of a building design and construction project, it is necessary to begin with the end in mind. To this extent it is vital to define the employer's information requirements at the very beginning of the project, particularly the requirements of the FM, operations teams and users who will utilise the handover information during the legacy phase of the project.

To identify 'useful' information and set up the rules needed to accurately capture a project from inception to completion, the following questions should be addressed:

- What information is required to be produced? (i.e., Level of Information)
- Who is responsible for producing that information? (i.e., Designers, Contractors, Suppliers etc.)
- At what stage does that information get produced? (i.e., Design, Construction, Handover etc.)
- Where does that information need to be stored? (i.e., CDE, 2D Drawing, BIM Model etc.)

AESG recommend a "Data Management Plan" is developed at project inception to ensure all project stakeholders begin with data governance as a priority.

Once a data plan is agreed and implemented the project team can proceed to initiate, track, and automate the necessary workflows to ensure information is addressed and delivered by all project team members throughout the project therefore ensuring a successful digital handover that contains:

- Reviewed & approved information.
- Structured and validated sets of data.
- Links to the BIM Model(s).
- Interoperability and ease of onboarding of external software.



AESG DATA+ Information Management Model

Data+ is AESG's digital information management platform that serves as a central repository to define, create, review, and validate all handover information in line with the Employer's Requirements throughout the project from inception into operation.

AESG's strategy is to enable a digital version of the built asset which includes Buildings and Site-wide Services including infrastructure.

By using a data-driven approach, AESG delivers successful, digital handovers for project teams, building owners and operators that is consistent, compliant, scalable, resilient plus easy to access and update.



AESG Data + Information Management Model

For help with digital handover or project information management, contact our Associate Digital Delivery -Rohan Chandavarkar at r.chandavarkar@aesg.com

References

- ^[1] <u>FMI</u>
- [2] <u>Autodesk</u>

How can AESG help?

AESG is a specialist consultancy, engineering and advisory firm with offices in London, Dubai, Abu Dhabi, Riyadh and Singapore working on projects throughout Europe, Asia and Middle East. We pride ourselves as industry leaders in each of the services that we offer. We have one of the largest dedicated teams with decades of cumulative experience in sustainable design, sustainable engineering, fire and life safety, façade engineering, building commissioning and digital asset management, waste management, environmental consultancy, strategy and advisory, acoustics, cost management and carbon management.



Rohan Chandavarkar Associate - Digital Delivery, AESG

Rohan is AESG's Digital Delivery Associate and leads the design and implementation of AESG's proprietary web-based commissioning & handover management platform, DATA+. He is an alumni of The Ohio State University with a Master's degree in Mechanical Engineering.

Rohan has worked in the construction industry for over 9 years, serving initially as a Mechanical Design Engineer and subsequently specialising in Digital Delivery where has successfully delivered several high-profile projects in the MENA region across various sectors such as Education, Commercial, Residential, Industrial, Rail, Hospitality & Retail.

Rohan has developed an expertise in digitally handing over O&Ms, Asset Information Models and Digital Twins through the effective use of BIM and Data Standards that entail a structured, process-driven approach in the definition and approval of project information.

He has a deep understanding of the various challenges involved in obtaining accurate information and data throughout the lifecycle of a project. Through his experience, he has developed a strong skillset in liaising with and managing the various project stakeholders and supply chain to overcome these challenges in ensuring a digital handover.

Furthermore, Rohan is a SmartScore Accredited Professional in commercial real estate that enables him to assess, improve and certify Smart Buildings to possess and promote a digital infrastructure that accommodates user functionalities such as individual and collaborative working, health and well-being, safety and security, and sustainability.

For further information relating to specialist consultancy engineering services, feel free to contact us directly via info@aesg.com

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