



ISO 19650: 2103

BUILDING INFORMATION MODELLING

INTRODUCTION

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We begin our research by setting the stage for the digital change that is driving the built environment. We next provide three viewpoints, showcasing three quite distinct businesses' Building Information Modelling (BIM) journeys within the larger framework of this digital transition. The perspectives presented here by organizations from around the world describe the lessons learned from real-world examples and projects, backed up where possible by evidence and statistics that demonstrate the benefits of BIM adoption – the "before and after BIM" – such as cost and time savings, quality and efficiency improvements, risk reduction, and return on investment. Both the DTA and the featured organizations are completely committed to BIM and recognize the benefits it can offer to the whole built environment.

Moving Toward Organizational Resilience

In today's built environment, projects are developed, built, and managed against a backdrop of tremendous and complicated challenges, ranging from coping with COVID-19 to reducing carbon emissions. Organizations, on the other hand, will have the tools they need to achieve and sustain resilience if the correct digital transformation plans and support are in place. Digital transformation may assist companies in meeting a variety of difficulties, ranging from economic risks to regulatory compliance, while also allowing them to capitalize on new opportunities given by the fourth industrial revolution.



The 4th Industrial Revolution

The term "fourth industrial revolution" refers to today's automated/digital trend, which is one of the most rapid eras of change in the industry's history. Digital transformation, which is centered on the automated collecting and sharing of data, transforms physical assets from static structures into networked ecosystems.



The fourth industrial revolution offers incredible prospects for the built environment. Big Data, the Internet of Things (IoT), artificial intelligence (AI), and building information modeling (BIM) are all helping to improve the way buildings are designed, built, and maintained by enabling communication between humans and machines, as well as machines with each other.

This combination unifies a previously fragmented landscape by connecting building owners, designers, construction teams, facilities managers, and occupants via shared asset data, whereas integrated workplace management solutions enable multidisciplinary teams to collaborate and communicate more effectively, resulting in more efficient and profitable projects.

What Is The ISO 19650 International Standard Series?

ISO 19650 is a set of international standards for building information modeling (BIM). When BIM is employed, it outlines the collaborative methods for successful information management throughout the asset delivery and operating phases. ISO 19650 is based on the same ideas and high-level specifications as BIM Level 2 and is closely connected with the current UK 1192 standards. Initially established to foster a single language of BIM in the UK and inspire built environment experts to embrace BIM, the benefits of these standards have now been recognized more broadly, having been accepted globally from the Middle East to Australia.

The release of ISO 19650 provides an opportunity for multinational organizations working on projects to reduce unnecessary processes and enhance predictability in terms of cost and time by using a standard approach to information management.

It provides a chance for individuals working locally to demonstrate alignment to industry-acknowledged best practice while also generating resilience and differentiation.

BIM has a long history, but the impetus for it truly arose in the mid 2000s, when digitalization began to revolutionize construction. Since April 2016, the UK government has compelled construction providers vying for centrally purchased government projects, including buildings and infrastructure, to work at BIM Level 2. To help with this, BSI produced the UK 1192 family of standards, which define BIM Level 2, in collaboration with construction industry professionals.

BS 1192 was the first of these standards to be released in 2007. In 2013, PAS 1192-2 (Specification for information management for the capital/delivery phase of construction projects utilizing building information modeling) was issued, which was based on BS 1192. DTA has now developed additional standards in this suite, as well as a wide range of certification, verification, and training options to assist enterprises in embedding and demonstrating best practices.

Today, the 1192 standards form the foundation of most of the worldwide approaches to BIM. For example, in 2015, Hong Kong's Construction Industry Council (CIC) issued BIM guidelines that cross-reference 1192. As global markets undergo digital revolution, the development of the first ISO standard for BIM is both rational and opportune.

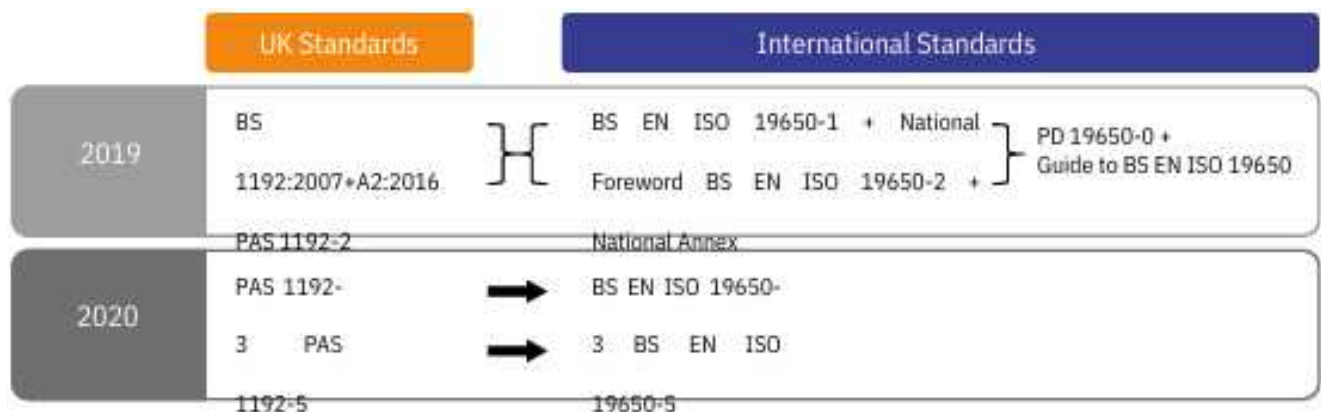
What Is Included In The ISO 19650 Suite?

The following standards, which are accessible on the BSI Shop, have superseded BS 1192:2007+A2:2016 on principles and PAS 1192-2 on the capital delivery phase:

- **BS EN ISO 19650-1:** Building and civil engineering information organization and digitalization, including building information modeling — Building information modeling for information management: Concepts and principles
- **BS EN ISO 19650-2:** Building and civil engineering information organization and digitalization, including building information modeling — Building information modeling for information management: The asset's delivery phase Along with these standards, the following material is accessible on the BSI Shop:
- **PD 19650-0** - UK Transition Guidance, which, together with the UK National Forewords and National Annex, will facilitate the implementation of ISO standards in the UK and within the ISO framework.

PAS 1192-3 and PAS 1192-5 (the information management of assets and security-minded BIM standards) are expected to be supplanted by the following standards in 2020:

- **BS EN ISO 19650-3** Building and civil engineering information organization and digitalization, including building information modeling — Building information modeling for information management – Part 3: Asset operational phase
- **BS EN ISO 19650-5** Building and civil engineering information organization and digitalization, including building information modeling — Building information modeling for information management – Part 5: An approach to information management that is concerned with security



Moving From The UK 1192 Series To The ISO 19650 Series

The good news is that the discrepancies between ISO standards and UK standards are minor because the approach to BIM is fairly similar, with the primary variances being to terminology and meanings. This landmark book provides an excellent chance to make even greater advances in cooperation and customer satisfaction through the use of BIM.

Taking On The Challenge

Despite their aspirations to invest, just 12% of firms saw themselves as leaders in terms of digital transformation initiatives. In terms of achieving digital transformation standards, 32% feel unprepared and behind.

Budget constraints, overcoming internal team prejudices and attitudes, and a lack of external expertise/knowledge are the top three challenges to adopting digital transformation plans.

The worldwide challenge for enterprises is to overcome these hurdles in order to develop a common digital strategy and standards that focus on cooperation through the use of structured data. Organizations are one step closer to accomplishing their digital transformation goals now that they have a solid foundation of data and information in place.

Embracing BIM

BIM is an information management process that unlocks value by collecting contextualized asset data throughout its lifecycle and making it available to multidisciplinary teams across the supply chain for use in everything from project planning, design, and construction to asset operation and management.

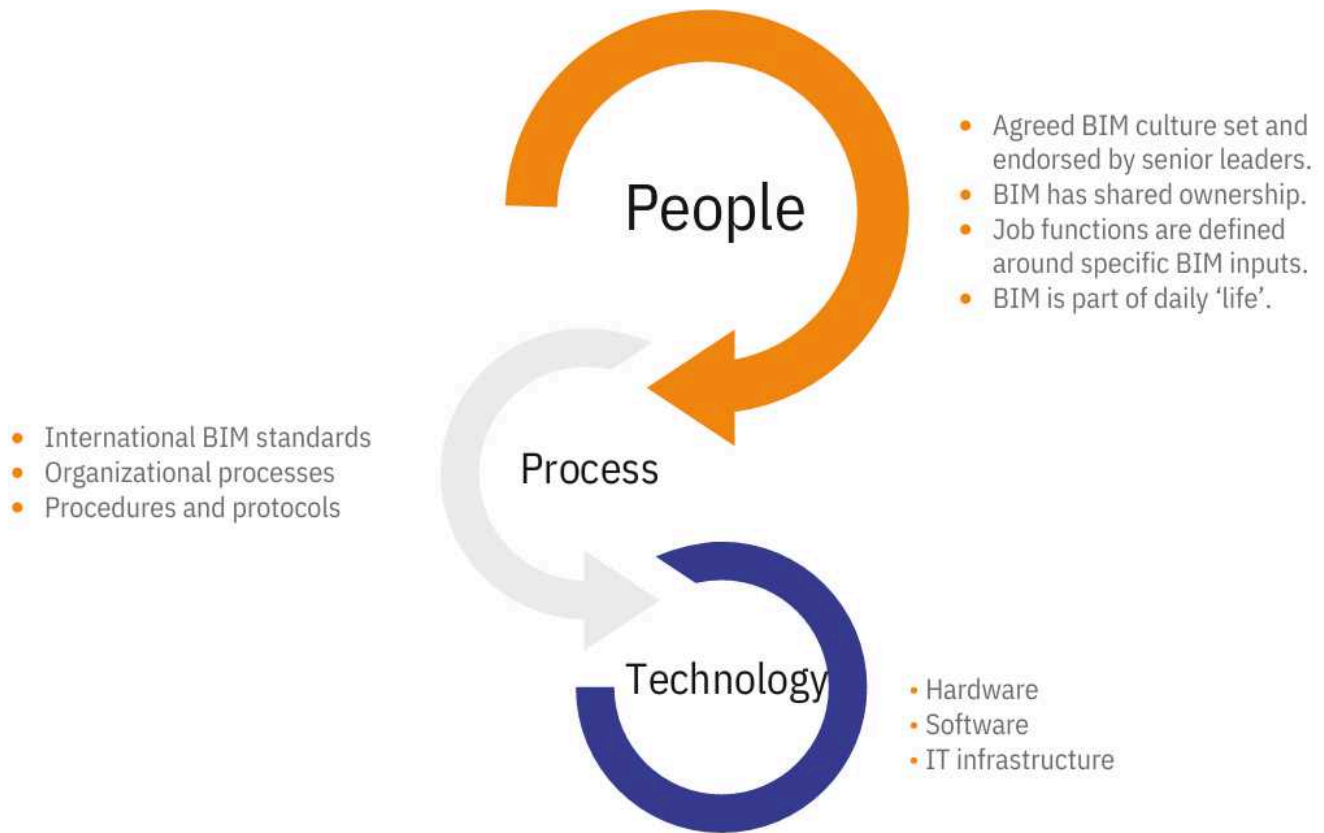
BIM is fundamentally a procedure that ensures all relevant information is available to the appropriate people, at the appropriate time, and in the appropriate format. It brings together all of the components that comprise projects in the development stage, resulting in a single language, shared information, and enhanced transparency among all stakeholders involved, including developers, architects, primary and subcontractors, and facility and asset managers.

Problems may be prevented across the supply chain by developing three-dimensional models (digital twins) and exchanging precise information, from designs and specifications through materials, measurements, and performance indicators. The benefits include increased design, decision-making, concept communication, and information quality, as well as decreased risks in terms of project cost, timeline, quality, and environmental performance.

BIM Benefits

- According to DTA research, employing BIM methods to resolve issues saves an average of 15% of project time.
- According to the project's lead consultant, Dubai's Museum of the Future, known internationally as one of the most difficult construction projects ever attempted, "would have been an impossible task without parametric design and BIM."
- The Beijing Institute of Architectural Design's project team used the BIM technique to build all the components for the planning and design stages of China's new stadium for the 2022 Hangzhou Asian Games, saving 100 resource days and cutting design time by 60%.

Three Essential Components For Effective BIM Deliver



A Method Based On Standards

BIM is backed up by a set of standards that describe the collaborative methods for effective information management while utilizing BIM. These are the worldwide ISO 19650 series and the UK's PAS 1192 series, on which ISO 19650 is based, which address the requirements and recommendations for information management during asset briefing, design, building, operation, and decommissioning.

In 2019, the first International standard for information management using BIM (ISO 19650 parts 1 and 2) was published, expanding potential for enterprises in the built environment to operate across borders and throughout the world.

The standard has encouraged enhanced communication and trust throughout the supply chain, allowing international and local projects to be handled uniformly while also addressing the requirement to communicate information throughout the asset lifespan.

International standardization for BIM, thanks to the advent of ISO 19650, has leveled the playing field for companies all over the world. The last phase is to establish an open ecosystem in which supply chain partners may readily interact across project delivery procedures.

Taking a standards-based strategy, along with strong communication to break down obstacles and develop support, is a significant step toward successful BIM adoption and digital transformation. The three distinct BIM viewpoints that follow go deeper into these and other topics.



About DTA

Delta Tech Africa Limited Is An ICT And Quality Consulting Organization Focused On Performance Management Across Business Verticals. Delta Means“ A Finite Increment”. We Help Organizations To Achieve This Increment Across Departments And Functions And To Improve The Overall Organizational Performance While Adding Value To The Stakeholders. Evolution Is A Constant Change. When The Pace Of Evolution Renders Societies Impatient, It Is A Technology That Accelerates Evolution Leading To The Transformation Of Societies. When That Evolution Happens, It Doesn't Limit The Human Endeavors, To Get The Technology Evolution, It Has To Be Supported By Processes And Management Of The Best Quality. Hence, We At Delta Tech Africa Thought Of Bringing Both Technology And Quality Management Processes Together To Get The Best Organizational Performance And Value Across The Fast Growing Continent Of Africa.



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