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INCORPORATING BIM INTO CONSTRUCTION CONTRACTS

A review of construction news publications over the last couple of years leaves no doubt as to the rapid and widespread adoption of BIM on projects in the Middle East. What do parties need to consider when incorporating BIM obligations into their construction contracts?

Introduction

The Roads and Transport Authority (RTA) in Dubai was the first government entity in the world to be awarded the BIM Kite-Mark for digital project delivery, with The Red Sea Development Company following close on its heels, as the first global asset owner in the world to achieve the BIM Kitemark.

Not to mention major construction stakeholders such as ALEC and Atkins who have also attained the BIM Kite-Mark for digital project delivery.

The BIM Middle East conference and Digital Construction Summit (formerly ME BIM Summit) are now firm annual fixtures in the calendar.

Much of this rapid uptake in BIM adoption has been driven by the acknowledgement, by key stakeholders, that BIM produces greater project efficiencies in terms of time and cost savings.

The BIM Mandate

In Dubai, the BIM revolution has also been driven by the BIM mandates issued by Dubai Municipality since 2015, which have gradually increased the requirement for the implementation of BIM in defined classes of projects.

The current BIM mandate from Dubai Municipality is to be found in Dubai Building Code 2021 (DBC 21). DBC 21 applies to new buildings and to certain classes of changes to existing buildings (except where an alternative solution is permitted in DBC 21).

DBC 21 provides that when producing information, the project team shall follow industry recognized standards such as the ISO 19650 series and ISO 29481-1 to facilitate interoperability between software applications used during all stages of the asset's lifecycle.¹

ISO 19650 and ISO 29481-1 are international standards for managing information over the life cycle of an asset using BIM.

BIM is defined in ISO 19650 as the *"use of a shared digital representation of a built asset to facilitate design, construction and operation processes to form a reliable basis for decisions process."*²

In addition to the ISO 19650 definition, Dubai Municipality has identified BIM as the route to drive a more efficient building permit process, defining BIM as, *"the digitisation of construction information to be used and re-used throughout the project lifecycle to improve the quality and efficiency in the building permit process"*³

DBC 21 also mandates the use of Open BIM⁴ which means that parties work with BIM using non-proprietary open software, processes and standards, which are accessible to all of the parties, making it easy to integrate and exchange the BIM data between all parties.

¹ Section H.11.4 of DBC21

²ISO 19650 - Organisation and digitisation of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using BIM - Part 1: Concepts and principles, 2018.

³ DM Roadmap for BIM implementation, 2020

⁴ Section H.11.2.5

Information and how it is exchanged and managed is a crucial aspect of implementing and using BIM successfully. The ISO 19650 standards are an internationally recognised set of documents for managing BIM related information through the whole life cycle of a built asset, from design through construction and onto project handover.

Incorporating BIM into construction contracts

Where BIM is required (either by DBC 21 or as part of employer's requirements), the parties involved in the design and construction of the project will need to determine, themselves, how it should be implemented into the contract.

In doing so, the contracting parties will need to consider:

- clauses relating to BIM management responsibilities;
- the selection of and incorporation of a protocol;
- the provision of documents; and
- the hierarchy of contractual documents.

Construction contracts based upon the FIDIC forms of contract are widely used across the Middle East, albeit usually subject to extensive modifications.

The standard forms of FIDIC contracts issued to date do not include any standard provisions referring to BIM.

Instead, the BIM Advisory Note appended to the suite of FIDIC contracts launched in 2017 highlights the issues to be considered when using BIM on a FIDIC project.

The BIM Advisory Note states that the co-ordination of the material issues relating to BIM on a project are generally achieved by an Information Protocol and a BIM Execution Plan.

An Information Protocol is a document which sets out the requirements imposed on the parties in respect of the scope and application of BIM. There are no BIM Protocols published which apply specifically to the UAE market.

The parties will therefore either need to adopt a standard Protocol (modified to suit their needs) or create bespoke terms for the implementation of BIM.

A BIM Execution Plan (BEP) is a comprehensive document that helps project participants move forward with clear roles and expectations. A BEP is an essential element to create before beginning any construction project, especially for those that are large or complex with many collaborators.

Therefore, in terms of adapting FIDIC-based contracts to include provisions relating to BIM, it is for the drafting team for each individual contract to decide what to incorporate and what to cover.

NEC 4 Approach

One standard form contract that has been updated to include provisions relating to BIM is the NEC 4 suite of contracts,⁵ which provide for the creation or modification of a Building Information Model in secondary Option X10.

Under NEC 4, Information Model Requirements, i.e. the Client's requirements for the Building Information Model, are detailed in the Scope.

The Contractor collaborates with other Information Providers as stated in the Information Model Requirements.

The Client owns the Information Model and the Contractor's rights over the Project Information, except as otherwise stated in the Information Model Requirements.

The Client is liable for:

- A fault or error in the Information Model other than a Defect in the Project Information.
- A fault in information provided by Information Providers other than the Contractor.

The Contractor is not liable for a fault or error in the Project Information unless it failed to provide the Project Information using the skill and care normally used by professionals providing information similar to the Project Information. The Contractor must provide insurance for claims arising out of such failures.

NEC4 ECC Practice Note 6 also proposes that the parties incorporate into the Information Model Requirements, a provision requiring compliance by the parties with an Information Protocol.

⁵ Except for NEC short forms of contract

The Information Protocol published in May 2020 by UK BIM Framework⁶ is recommended for use by parties, as it specifically supports ISO 19650-2 (which covers the delivery phase of the Project).

Option X10 of NEC 4 also provides for the provision of a BEP by the Contractor, to define roles and responsibilities, and to be agreed by the Employer's Project Manager.

The NEC 4 approach may provide a useful starting point for parties looking to incorporate BIM provisions into their construction contracts, albeit such amendments should always be drafted and/or reviewed by a construction lawyer to ensure they will be upheld.

For more information, please contact the author of this alert



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⁶ The BIM Framework Information Protocol can be downloaded here [UK BIM Framework – BIM Standards, Guides & Resources](#)

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