

# NEC Secondary Option X10 Information Modelling

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## About Us


**GVE**  
CommercialSolutions

GVE Commercial Solutions Ltd are a commercial management consultancy providing quantity surveying and programming services. Our consultants specialise in the NEC forms of contract.

Our NEC capability has principally been acquired through practical application and experience within 'live' project environments assisting both contractors and subcontractors.


Our specialist NEC services include;

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## Information Modelling

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### What is it?

This is commonly known as 'Building Information Modelling' or BIM.

A more accurate description would be 'Asset Information Modelling'.

This doesn't describe the entire process, however, which may be more appropriately referred to as 'Management of Asset Information Modelling'.

BIM is an evolution from paper based 2D technical drawings to computerised 3D models of the built asset.

These models are intended to span the entire lifecycle of a project from concept to construction through to operational use.

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## Definitions



The National Building Service (NBS) describes BIM as follows;

*'BIM is a process for creating and managing information on a construction project across the project lifecycle, to produce a digital description of every aspect of the built asset.'*

BIM is defined in BS EN ISO 19650-1:2018 as follows;

*'Use of a shared digital representation of a built asset to facilitate design, construction and operation processes to form a reliable basis for decisions.'* (3.3.14)

## History and timeline



Charles M. Eastman was a professor of architecture and a pioneer of computer-aided design in the early 1970's.

Eastman focused on tool development for practitioners with the 'building description system' and 'Building Product Modelling', later re-branded as 'Building Information Modelling'.

The hardware needed to operate these systems, however, was prohibitively expensive during the 1970's and 1980's.

The need for change within the construction industry was identified by the Latham Report in 1994 which recommended the use of coordinated project information as a contractual requirement.

The Government Construction Strategy report (2011) stated as an objective that all government projects should use BIM by 2016.

## BIM Maturity Levels



These describe the measures required to be adopted to attain BIM compliance.

They were originally identified in 2008 within the Bew-Richards maturity model and defined the levels as follows;

**Level 0** – Project information is predominantly paper based.

**Level 1** – A mixture of paper based (2D) and a 3D environment with some sharing of project information across the team.

**Level 2** – This is where each discipline produces its own project information within a 3D environment, with information added to the model. Each discipline model is integrated using middleware software.

**Level 3** – This is a fully integrated and collaborative model which is accessible to all team members in real time.

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## Information Management



BS EN ISO 19650 shifted the focus away from 'maturity levels' towards a framework for information management.


This effectively replaced PAS 1192, which was more UK centred, and allows for the use of common terminology.

BS EN ISO 19650 introduces information management maturity 'stages' which allows for overlaps with the previously defined levels.

The intention is to facilitate the use of digital technologies to integrate the information into a model.

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## X10 – Information Modelling

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## NEC Suite

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Secondary option X10 can be found in the following NEC forms of contract;

- Engineering and Construction Contract (ECC),
- Engineering and Construction Subcontract (ECS),
- Professional Service Contract (PSC),
- Professional Service Subcontract (PSS),
- Term Service Contract (TSC),
- Term Service Subcontract (TSS),
- Facilities Management Contract (FMC),
- Facilities Management Subcontract (FMS),
- Supply Contract (SC),
- Design Build and Operate Contract (DBO),
- Alliance Contract (ALC).

**Note:** Secondary Option X10 (Information Modelling) is not found in NEC3.

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## Clause X10.1 ECC



This adds FIVE additional defined terms as follows;

### 1. The Information Execution Plan

This is prepared and submitted for acceptance similar to the procedure for a programme, as detailed at X10.4.

### 2. Project Information

This is information that is used in the Information Model.

### 3. The Information Model

This is the electronic integration of Project Information.

### 4. Information Model Requirements

These requirements are identified in the Scope and are used to produce the Information Model.

### 5. Information Providers

These are parties that contribute to the Information Model.

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## Clause X10.2 ECC



This requires collaboration with other Information Providers as stated in the Information Model Requirements.

This differs from the obligation to 'act in a spirit of mutual trust and co-operation' which operates within the boundary of the contractual relationship with the other Party and named roles.

The required 'amount' of collaboration is essentially determined by the BIM information management requirements.

Should secondary option X12 – Multiparty Collaboration be a 'standard' addition with Option X10?

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## Clause X10.3 ECC



This includes a further reason to notify an early warning for *'any matter which could adversely affect the creation or use of the Information Model.'*

This requirement supplements the stated bulleted 'reasons' at sub-clause 15.1

Unlike the bulleted reasons above, however, the meaning of 'adversely affect' is not clearly defined or reasonably obvious.

Should secondary option X12 – Multiparty Collaboration be a 'standard' addition with Option X10?

## Clause X10.4 ECC



This details the submission and acceptance procedure for the Information Execution Plan (IEP), which is treated in a similar manner as a programme at clauses 31/32.

An IEP may be identified in Contract Data or submitted for acceptance within the period of time stated.

There is a formal acceptance procedure at X10.4 (2).

Clause X10.4 (3) states when a revised IEP is to be submitted for acceptance, although there is no regular update.

Project Information is to be provided in accordance with the IEP.

Unlike a 'clause 31/32 programme' there are no details on content.

## Clause X10.5 ECC



This includes the requirement for alterations to the Information Execution Plan (IEP) to be submitted with a compensation event quotation – see also sub-clause 62.2.

It is not clear whether these 'alterations' are accepted as part of the quotation acceptance procedure.

Unlike the Accepted Programme, the IEP is not detailed within compensation events at sub-clause 60.1.

## Clause X10.6 ECC



This details the ownership of the Information Model and use of Project Information, including transfer of rights.

This is in addition to secondary option X9 – Transfer of rights and other stated rights of 'use' within the contract conditions.

This doesn't detail what 'rights' are required and whether this requires transfer of ownership or rights of use under licence.



## Clause X10.7 ECC



This has 3 sub-clauses that provide for;

(1) The 'higher' party's liabilities in relation to a **fault**,

- This supplements the stated liability at sub-clause 80.1 3<sup>rd</sup> bullet.

(2) A liability in relation to a **Defect** in the Project Information, using the standard of 'skill and care',

- This reflects the stated position under secondary option X15.1.

(3) The professional indemnity insurance requirements in relation to the liabilities under X10.7 (2), with the duration and amount stated in Contract Data.

- This is in addition to the insurances provided under the Insurance Table or as stated in Contract Data.

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## Differences between forms



Notwithstanding the different Parties, defined roles and defined terms, the variances between the NEC forms are as follows;

**PSC** - X10.7 (3) 'liability' clause is not included.

**PSS** - X10.7 (3) 'liability' clause is not included.

**TSS** – Prior to the October 2020 amendments the wording of sub-clauses X10.7 (1) and (2) differed from the other forms.

**DBO** - An additional clause is added at X10.2 which obliges the Contractor to create the Information Model.

**DBO** – Sub-clauses X10.5 (2) and (4) both refer to the 'Information Requirements' but this should be 'Information Model Requirements'.

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## Differences between forms



**DBO** – The ‘Use of the Information Model’ clause is amended to account for the responsibility for the Information Model.

**DBO** - The ‘liability’ at sub-clause X10.7 is not included.

**ALC** - An additional clause is added at X10.2 which obliges the Alliance to create the Information Model.

**ALC** - The ‘liability’ at sub-clause X10.7 is not included.

**ALC** – The ‘Use of the Information Model’ clause is amended to account for the responsibility of the Information Model.

## Issues to Consider...



Intellectual Property Rights (IPR).

Data hosting, storage and security.

Data exchange and interoperability.

Liabilities and risk allocation.

Contractual relationships between parties.

Consistent contract requirements.

Timetable and programme.

Collaboration as a contract obligation.

Insurances.

Use of a BIM protocol.

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