

# NATSPEC BIM STANDARDISATION

Richard Choy - CEO

NATSPEC // Construction Information

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June 2018



# ***NATSPEC// Construction Information***

Founded in 1975, with the  
objective to improve the construction quality  
and productivity of the built environment  
through leadership of information.

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ConstructionInformation***

We are a not-for-profit organisation owned by government and industry.



Australian  
Institute of  
Architects



**20 owners**

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# Standardise

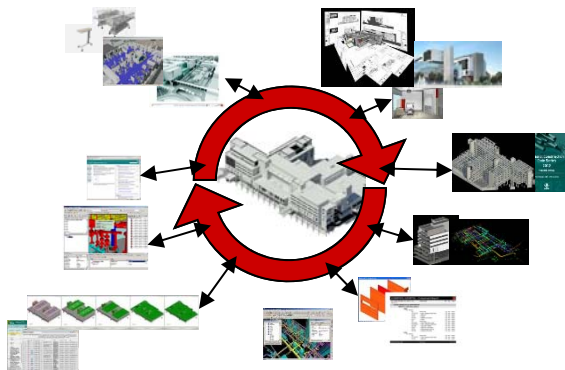
**To make one thing the same as others of that type, or to compare one thing to something accepted as a model. Cambridge Dictionary**

BIM is a digital form of construction and asset operations. It brings together technology, process improvements and digital information to radically improve client and project outcomes and asset operations. BIM is a strategic enabler for improving decision making for both buildings and public infrastructure assets across the whole lifecycle. It applies to new build projects; and crucially, BIM supports the renovation, refurbishment and maintenance of the built environment – the largest share of the sector. (EU BIM Taskgroup, 2018)

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# Building Information Modelling

- NATSPEC believes that digital information, including 3-D Modelling and Building Information Modelling, will provide improved methods of design, construction and communication for the industry.
- Further, NATSPEC supports open global systems. This will result in improved efficiency and quality.



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**ConstructionInfor**





# NATSPEC BIM Collaboration



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Project



Department



National



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# BIM Standardisation options

- BIM Library
- BIM Standard
- BIM Tools





# Option: BIM Library

- Australian global consultants not happy with quality of existing BIM Libraries from around the world
- Libraries not quickly updated to be compatible with newer versions of software
- BIM MEP <sup>AUS</sup> is still a world leader



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# Option: BIM Standard

- Failure of MOU with NBS
- Continued work with Masterspec NZ & ICIS
- Adoption of ISO/EU Standards



## BD-104 Building Information Modelling

Mirror Committee of ISO TC 59/SC 13



- ISO: International Organization for Standardization
- TC 59: Technical Committee 59 *Buildings and civil engineering works*
- SC 13: Subcommittee 13 *Organization of information about construction works*

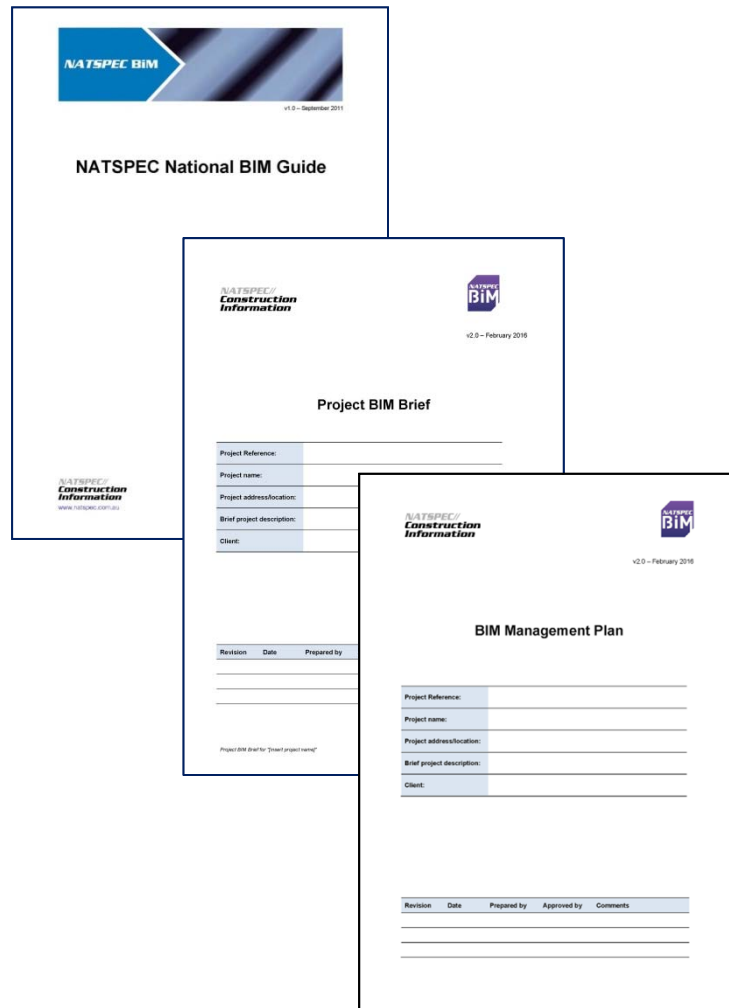


# Object Standardisation

Key issues for exchange and interoperability

- Object Designation/Assignment
- Inconsistency of included properties
- Inconsistency of property naming

# NATSPEC BIM Tools 2011+



## Purpose:

To assist clients, consultants and stakeholders to clarify their BIM requirements for construction projects in a nationally consistent manner.

# NATSPEC BIM Object/Element Matrix

[illegible]



# IFC - Difficult to interrogate

**IFC4 Add2 - Addendum 2 [Official]**

<a href="#">Cover</a> <a href="#">Contents</a> <a href="#">Foreword</a> <a href="#">Introduction</a>	<a href="#">1. Scope</a> <a href="#">2. Normative references</a> <a href="#">3. Terms, definitions, and abbreviated terms</a> <a href="#">4. Fundamental concepts and assumptions</a>	<a href="#">5. Core data schemas</a> <a href="#">6. Shared element data schemas</a> <a href="#">7. Domain specific data schemas</a> <a href="#">8. Resource definition data schemas</a>	<a href="#">A. Computer interpretable listings</a> <a href="#">B. Alphabetical listings</a> <a href="#">C. Inheritance listings</a> <a href="#">D. Diagrams</a>
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6.1.3.12 [IfcCovering](#)

6.1.3.13 [IfcCoveringType](#)

6.1.3.14 [IfcCurtainWall](#)

6.1.3.15 [IfcCurtainWallType](#)

6.1.3.16 [IfcDoor](#)

6.1.3.17 [IfcDoorStandardCase](#)

6.1.3.18 [IfcDoorType](#)

6.1.3.19 [IfcMember](#)

6.1.3.20 [IfcMemberStandardCase](#)

6.1.3.21 [IfcMemberType](#)

6.1.3.22 [IfcPlate](#)

6.1.3.23 [IfcPlateStandardCase](#)

6.1.3.24 [IfcPlateType](#)

6.1.3.25 [IfcRailing](#)

6.1.3.26 [IfcRailingType](#)

6.1.3.27 [IfcRamp](#)

6.1.3.28 [IfcRampFlight](#)

6.1.3.29 [IfcRampFlightType](#)

6.1.3.30 [IfcRampType](#)

6.1.3.31 [IfcRelConnectsPathElements](#)


6.1.3.32 [IfcRelCoversBldgElements](#)

6.1.3.33 [IfcRelCoversSpaces](#)

6.1.3.34 [IfcRoof](#)

6.1.3.35 [IfcRoofType](#)

**6.1.3.12 IfcCovering**



**► Natural language names**

**► Change log**

**6.1.3.12.1 Semantic definitions at the entity**

**▼ Entity definition**

A covering is an element which covers some part of another element and is fully dependent on that other element. The type, that (if given) is expressed by the [IfcCoveringType](#).

NOTE Definition according to ISO 6707-1: final coverings and treatments of surfaces and their intersections.

Coverings are elements with relationships to the covered element and the space on the other side, they may contain information, assigned by [IfcRelAssociatesMaterial](#), and others.

EXAMPLE Coverings include wall claddings, floorings, suspended ceilings, moldings and skirting boards.

NOTE A more basic information about claddings, floorings, and ceilings of a space can be attached to [IfcSpace](#)'s using the [Pset\\_SpaceCommon](#) properties. The quantities would be interpreted from the space quantities.

Coverings can be assigned to

- a space represented by [IfcSpace](#)
- using the inverse relationship [CoversSpaces](#) pointing to [IfcRelCoversSpaces](#). The space is then associated with which space a covering is facing towards.



## F

### Flooring ( 10 )

[Carpet](#)[Ceramic Floor Tiling](#)[Resilient Floor Finish](#)[Stone Floor Tiling](#)[Terrazzo In Situ Flooring](#)[Cementitious Floor Topping](#)[Engineered Panel Flooring](#)[Seamless Resin Flooring](#)[Terrazzo Floor Tiling](#)[Timber Flooring](#)

### Foundations ( 11 )

[Beam Footing](#)[Driven Pile](#)[Pile Cap](#)[Undefined Footing Type](#)[Bored Pile](#)[Jet-Grout Pile](#)[Screw Pile](#)[Undefined Pile Type](#)[Caisson](#)[Pad Footing](#)[Strip Footing](#)

### Furnishings ( 8 )

[Bed](#)[Desk](#)[Fixed Furniture](#)[Sofa](#)[Chair](#)[Filing Cabinet](#)[Shelf](#)[Table](#)

## G

### Gates ( 1 )

[Gate](#)

## I

### Insulation ( 2 )

[Acoustic Insulation](#)[Thermal Insulation](#)



## Desk

Furniture defines complete furnishings such as a table, desk, chair, or cabinet, which may or may not be permanently attached to a building structure.

A desk is an item of furniture with a countertop and optional drawers for a single person.

### IFC 2x3 note

For IFC2x3 use the IfcObjectType of IfcFurnitureType and include the 'Name' attribute/property completed with the value of 'Desk'.

IfcElementType	IfcFurniture	=IfcExportAs (REVIT)
IfcPredefinedType	DESK	=IfcExportType (REVIT)
Suggested Filename:	Desk	
Suggested LOD (Design Model)	300	
Suggested Primary Discipline	Interiors	

### Source

- ☐ COBie
- ☐ IFC 2x3
- ☐ IFC4 Add2
- ☐ NATSPEC BIM
- ☐ NATSPEC Spec

### Property Categories

- ☐ Admin data
- ☐ Code compliance data
- ☐ Construction logistics data
- ☐ Cost data
- ☐ Facilities management data
- ☐ Geometric data
- ☐ Manufacturer data
- ☐ Scheduling data
- ☐ Spatial and location data

### Classification

(Select the classification you'd like to be included in the Excel export)

Masterformat	12 55 16 : Detention Desks	<input type="checkbox"/>
	12 59 23 : Desk System Furniture	<input type="checkbox"/>
	12 51 23 : Office Tables	<input type="checkbox"/>
NatspecWorksection	0571 Workstations	
	0572 Miscellaneous furniture	
Omniclass Table 21 Elements	21-05 20 50 30 : Furniture	





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NatspecWorksection	0571 Workstations	<input type="checkbox"/>
	0572 Miscellaneous furniture	<input type="checkbox"/>
Omniclass Table 21 Elements	21-05 20 50 30 : Furniture	<input type="checkbox"/>



# Curtain wall

A curtain wall is an exterior wall of a building which is an assembly of components, hung from the edge of the floor/roof structure rather than bearing on a floor.

IfcElementType	IfcCurtainWall	=IfcExportAs (REVIT)
IfcPredefinedType	NOTDEFINED	=IfcExportType (REVIT)
Suggested Filename:	CurtainWall	
Suggested LOD (Design Model)	300	
Suggested Primary Discipline	Architectural	

## Source

## Property Categories

## Classification

BIM Forum	Admin data	Masterformat	08 44 00 : Curtain Wall and Glazed Assemblies
IFC 2x3	Code compliance data	NatspecWorksection	0432 Curtain walls
IFC4 Add2	Construction logistics data	Omniclass Table 21 Elements	21-02 20 10 40 : Fabricated Exterior Wall Assemblies
NATSPEC BIM	Cost data	Omniclass Table 22 Work Results	22-08 44 00 : Curtain Wall and Glazed Assemblies
NATSPEC Spec	Facilities management data	Omniclass Table 23 Products	23-13 33 19 11 : Cladding and Curtainwall Panels
	Geometric data		23-13 33 27 11 : Curtain Walls
	Manufacturer data	Uniclass Elements	EF_25_10 : Walls
	Performance data	Uniclass Systems	Ss_25_10_20 : Curtain walling systems
	Scheduling data	Unifomat	B2010.40 : Fabricated Exterior Wall Assemblies
	Spatial and location data		
	Specification data		
	Sustainability data		



AutoSave Off



CurtainWallExport.xlsx - Excel

File Home Insert Draw Page Layout Formulas Data Review View Developer Help Tell me what you want to do

B30



Curtain Walls

	A	B	C	D
3	CurtainWall			
4				
5	IFCElementType:	IfcCurtainWall	= IfcExportAs (REVIT)	
6	IFCPredefinedType:	NOTDEFINED	= IfcExportType (REVIT)	
7	Suggested Filename:			
8	Suggested LOD (Design Model):	300		
9	Suggested Primary Discipline (Design Model):	Architectural		
10				
11	NATSPECCode	0432	Classification data	
12	NATSPECTitle	Curtain walls	Classification data	
13	NATSPECVersion	Apr-18	Classification data	
14	Uniclass2015ElementsCode	EF_25_10	Classification data	
15	Uniclass2015ElementsTitle	Walls	Classification data	
16	Uniclass2015ElementsVersion	1.2	Classification data	
17	Uniclass2015SystemsCode	Ss_25_10_20	Classification data	
18	Uniclass2015SystemsTitle	Curtain walling systems	Classification data	
19	Uniclass2015SystemsVersion	1.9	Classification data	
20	OmniclassTable21Code	21-02 20 10 40	Classification data	
21	OmniclassTable21Title	Fabricated Exterior Wall Assemblies	Classification data	
22	OmniclassTable21Version	'2012-05-16	Classification data	
23	OmniclassTable22Code	22-08 44 00	Classification data	
24	OmniclassTable22Title	Curtain Wall and Glazed Assemblies	Classification data	
25	OmniclassTable22Version	'2013-08-25	Classification data	
26	OmniclassTable23Code	23-13 33 19 11	Classification data	
27	OmniclassTable23Title	Cladding and Curtainwall Panels	Classification data	
28	OmniclassTable23Version	'2012-05-16	Classification data	
29	OmniclassTable23Code	23-13 33 27 11	Classification data	
30	OmniclassTable23Title	Curtain Walls	Classification data	
31	OmniclassTable23Version	'2012-05-16	Classification data	
32	UnifomatCode	B2010.40	Classification data	
33	UnifomatTitle	Fabricated Exterior Wall Assemblies	Classification data	
34	UnifomatVersion	2010	Classification data	
35	MasterformatCode	08 44 00	Classification data	
36	MasterformatTitle	Curtain Wall and Glazed Assemblies	Classification data	
37	MasterformatVersion	2016	Classification data	
38	CreatedBy	NATSPEC BIM	Admin data	
39	CreatedByURL	NATSPEC BIM	Admin data	
40	ModifiedIssue	NATSPEC BIM	Admin data	


CurtainWall



Ready



# NATSPEC BIM Portal




is a national not-for-profit organisation, owned by Government and industry

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advocacy or policy development. [See a list of NATSPEC's stakeholders.](#)




the national building specification


NATSPEC, the National Building Specification includes specialist packages for all building design professionals, plus home owners.




Domestic Online can be accessed by subscribers and one-off users to significantly streamline the specification creation process for residential project specifications.




AUS-SPEC is the national specification system for the design, construction, maintenance and operation of local government assets.



Download branded worksections and case studies from NATSPEC Product Partners, offering reputation, quality to Australian standards, and support.



The NATSPEC BIM Portal is home to the National BIM Guide and other documents and tools that will assist the implementation of BIM.



A searchable database of construction products with evidence of conformity to Australian and international standards.



# Questions

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FOR FURTHER INFORMATION  
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