

BIM

Increase Productivity: Reduce Risk

Alan Gillard RIBA

Carlos Nicolini BIM Accredited Professional

17th December 2014

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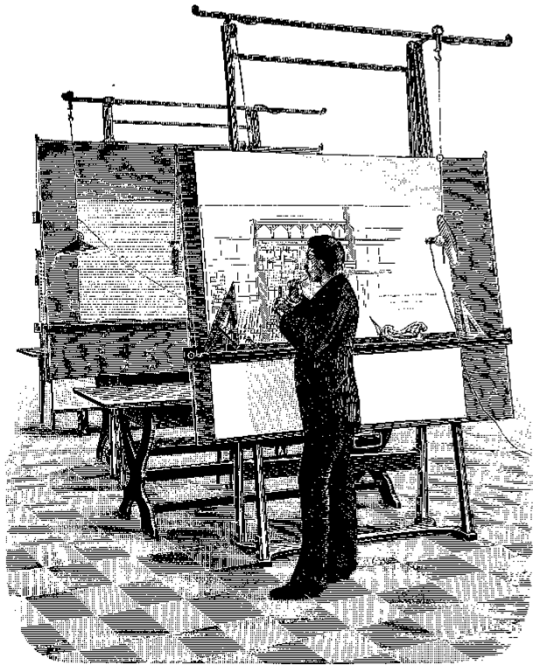

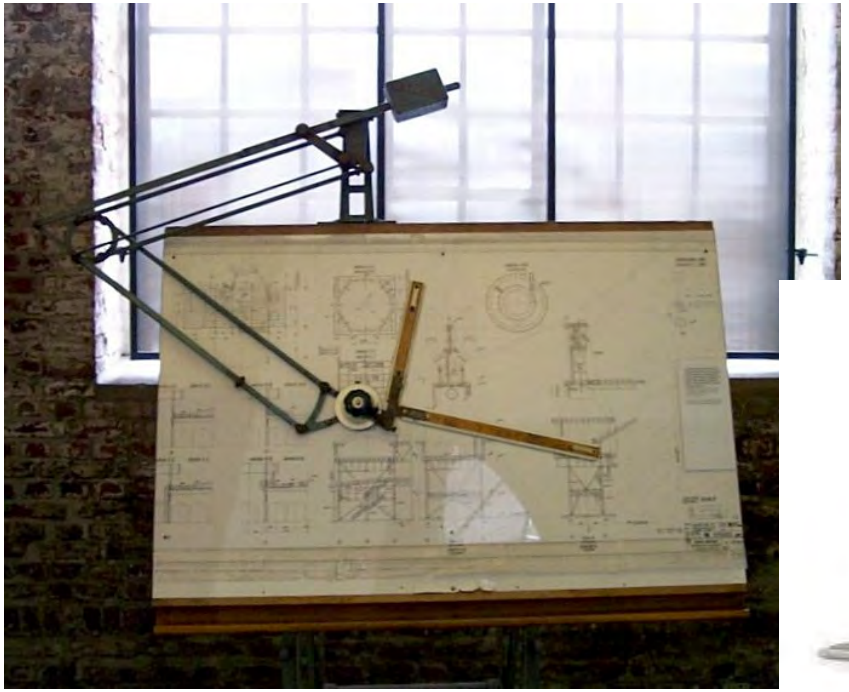

1992

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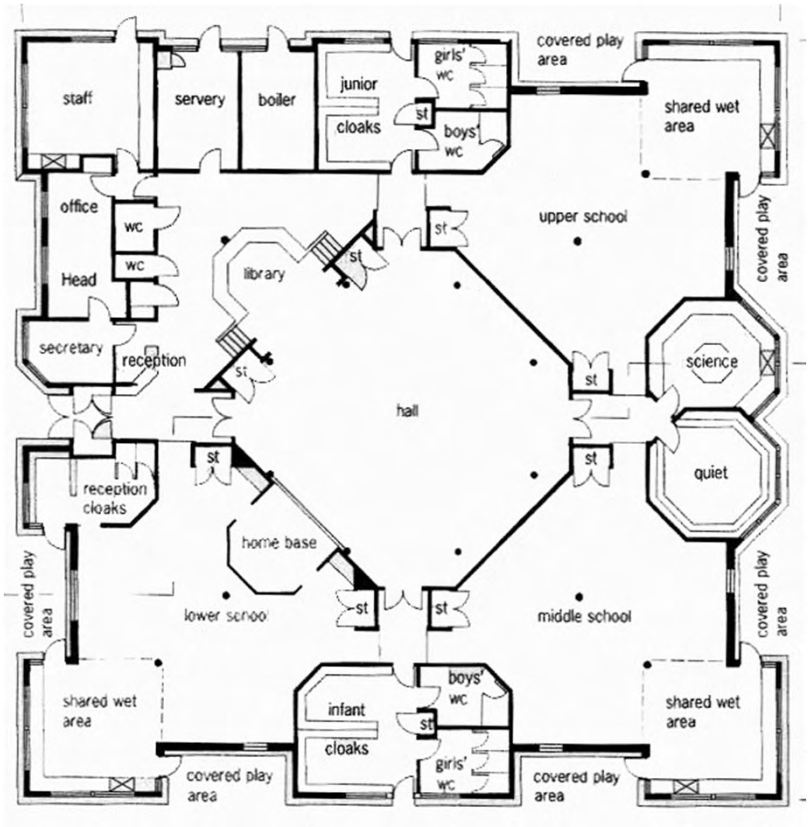
BIM Level 0

1994



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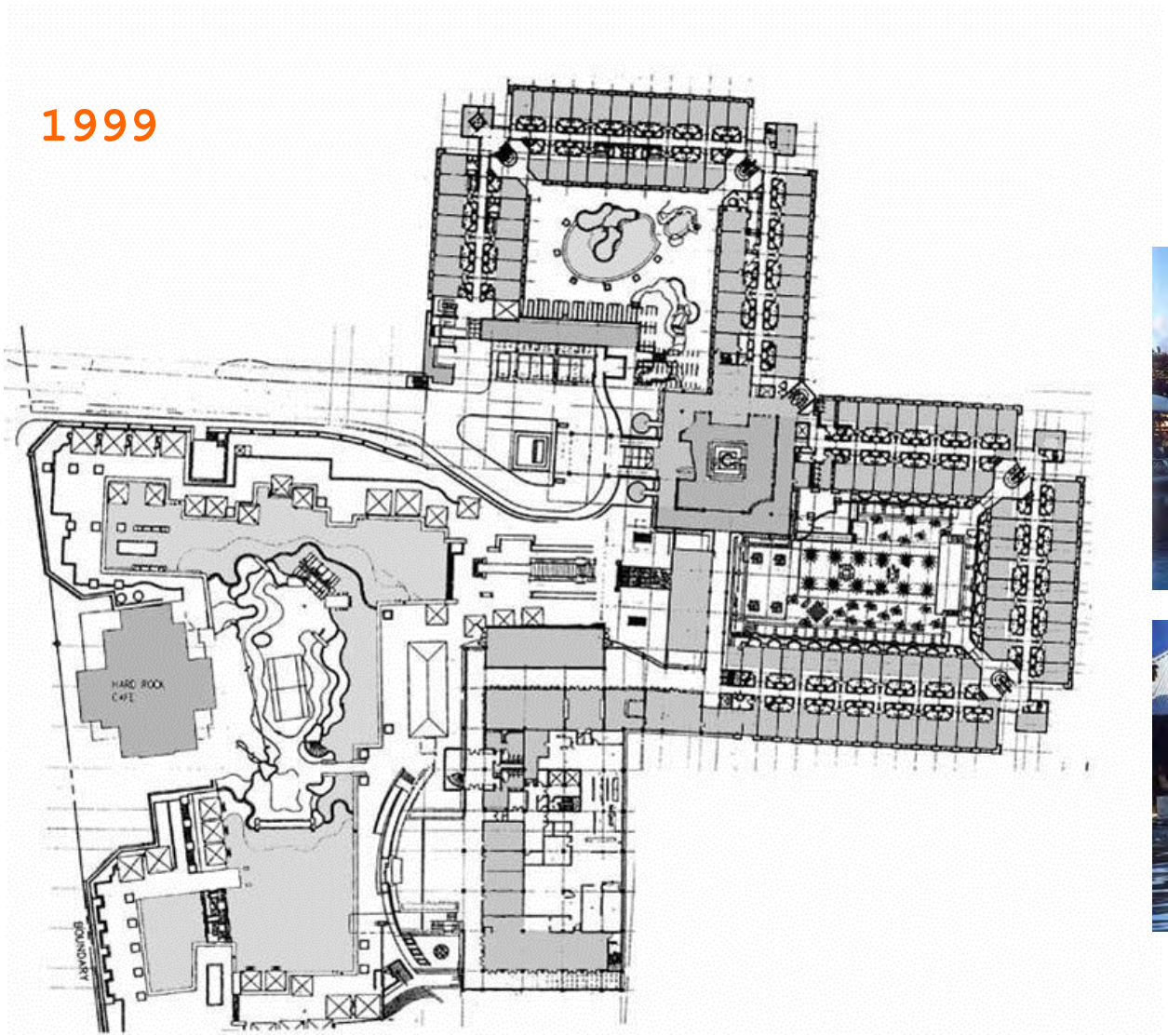
1999



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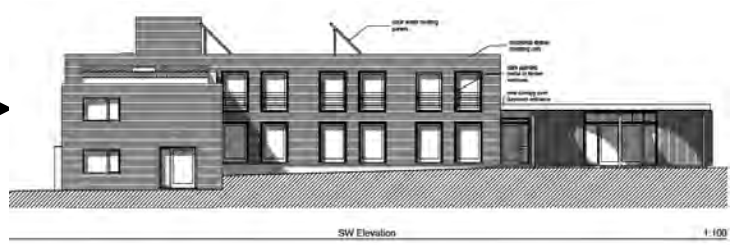
2005

AutoCad 14



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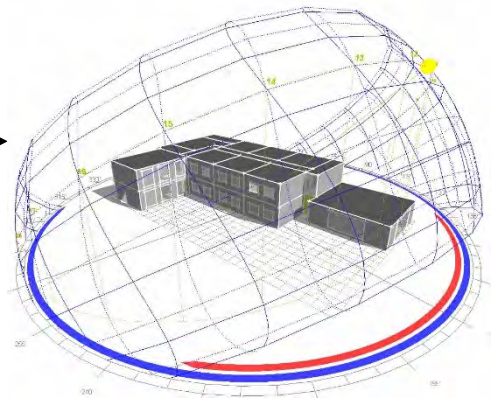

ArchiCAD 9

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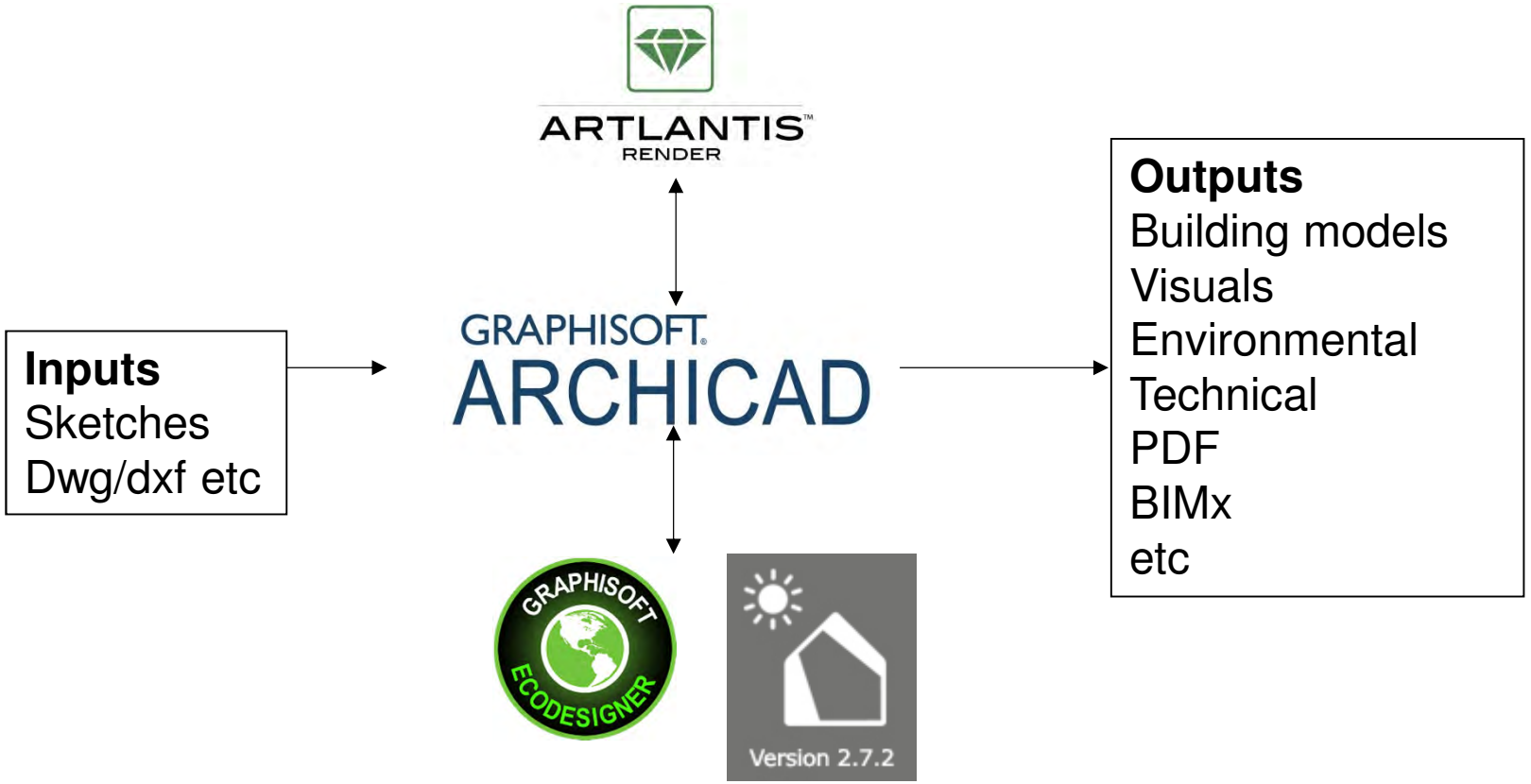
2012



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Visualisation

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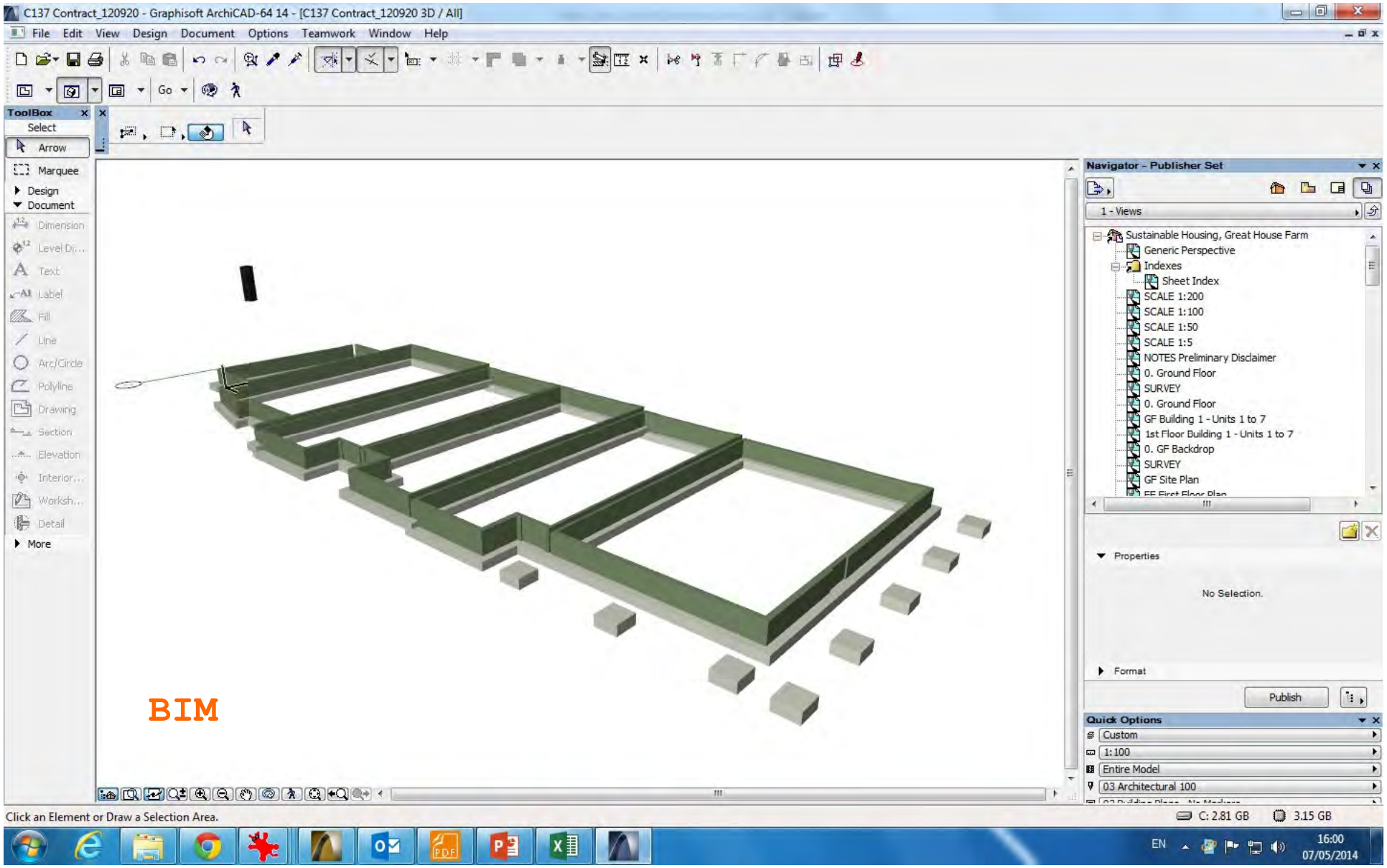

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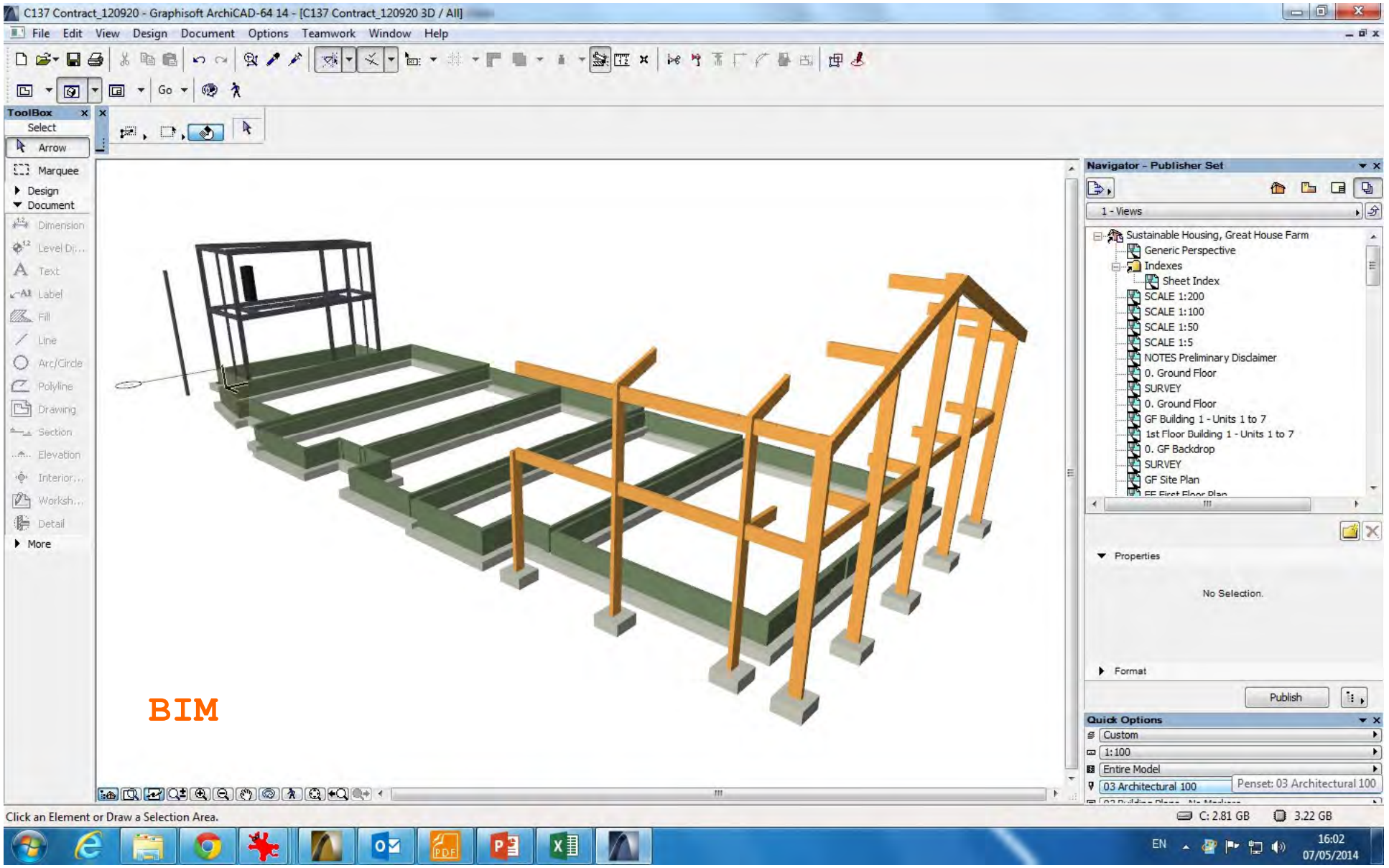

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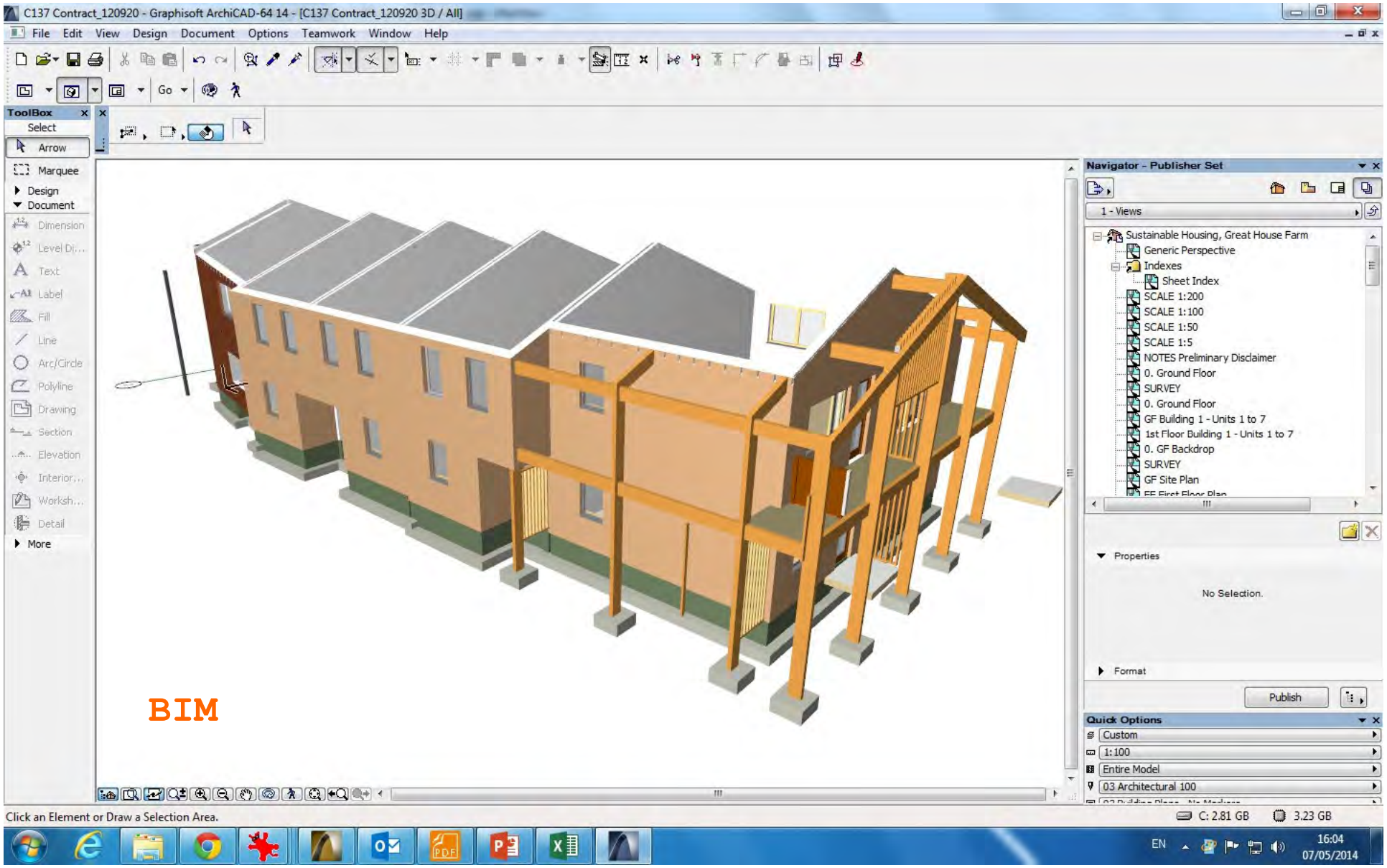

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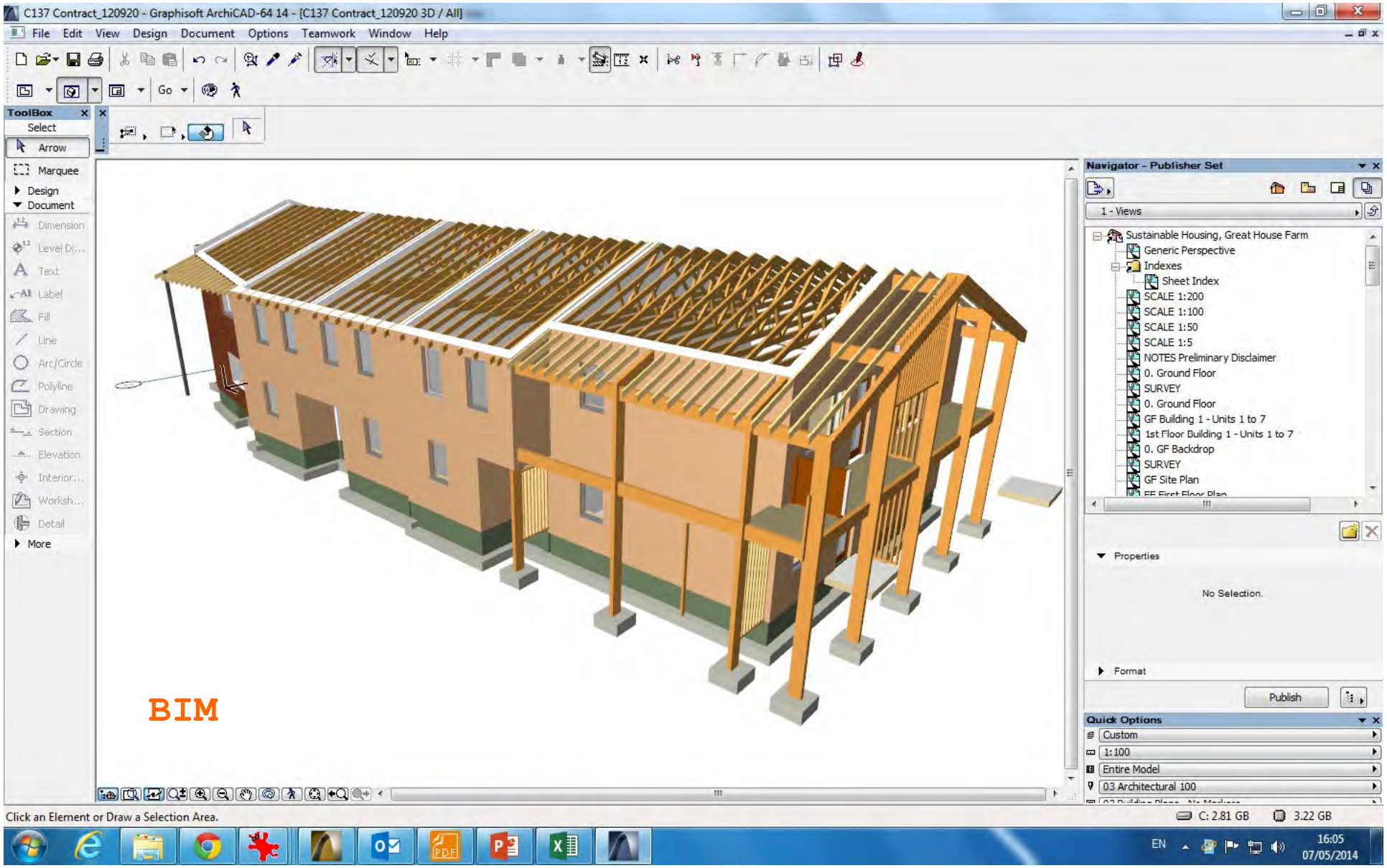

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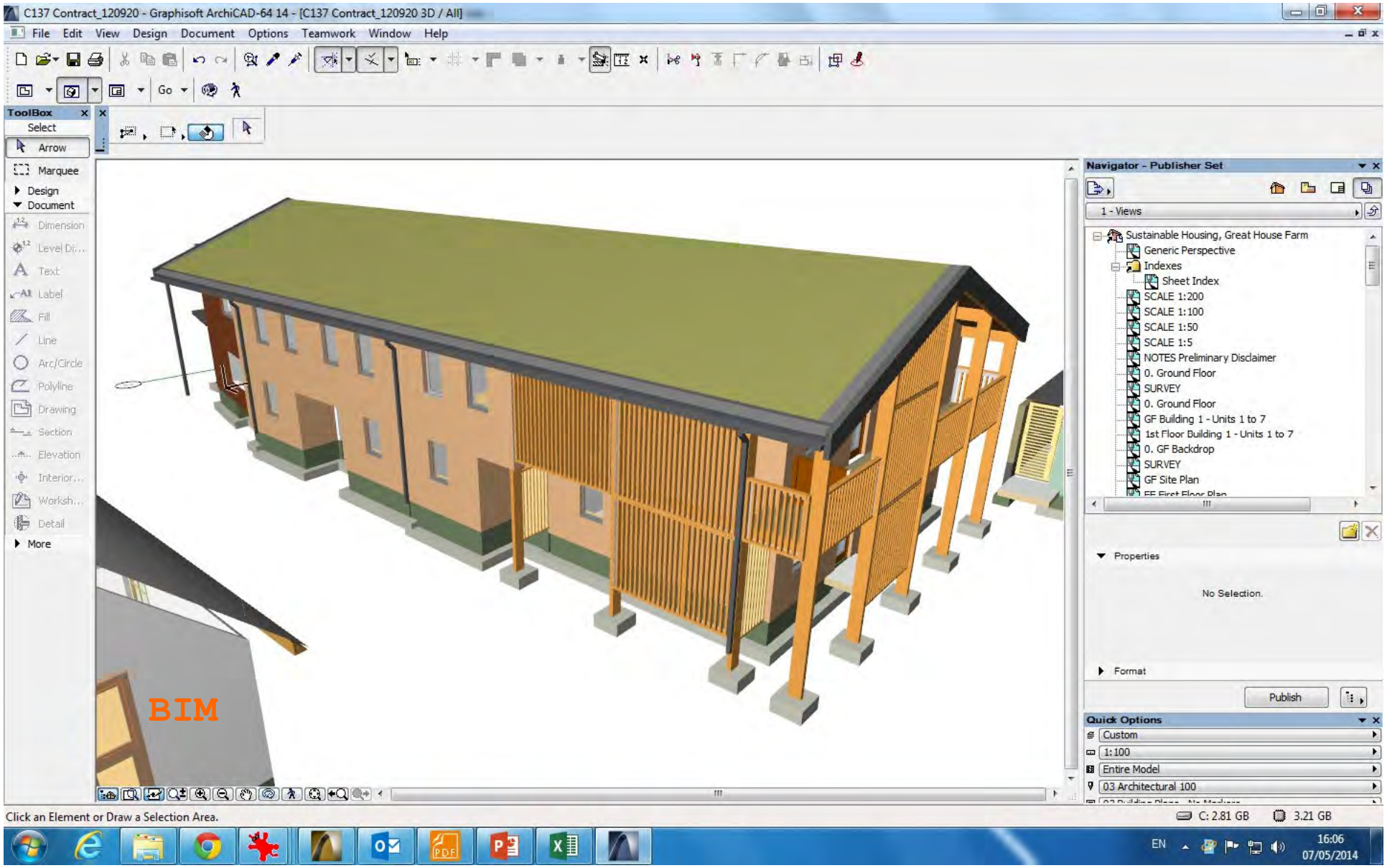

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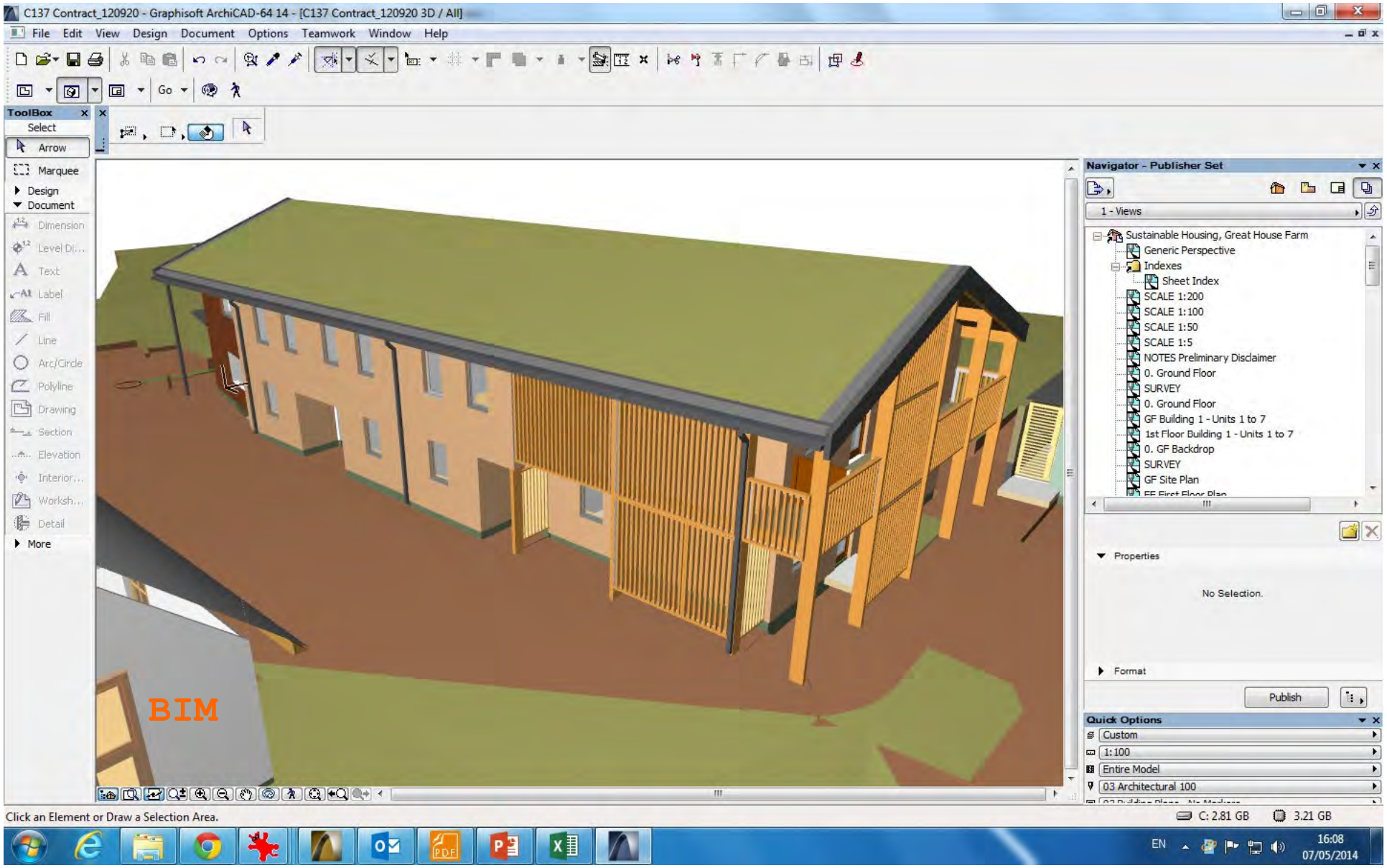

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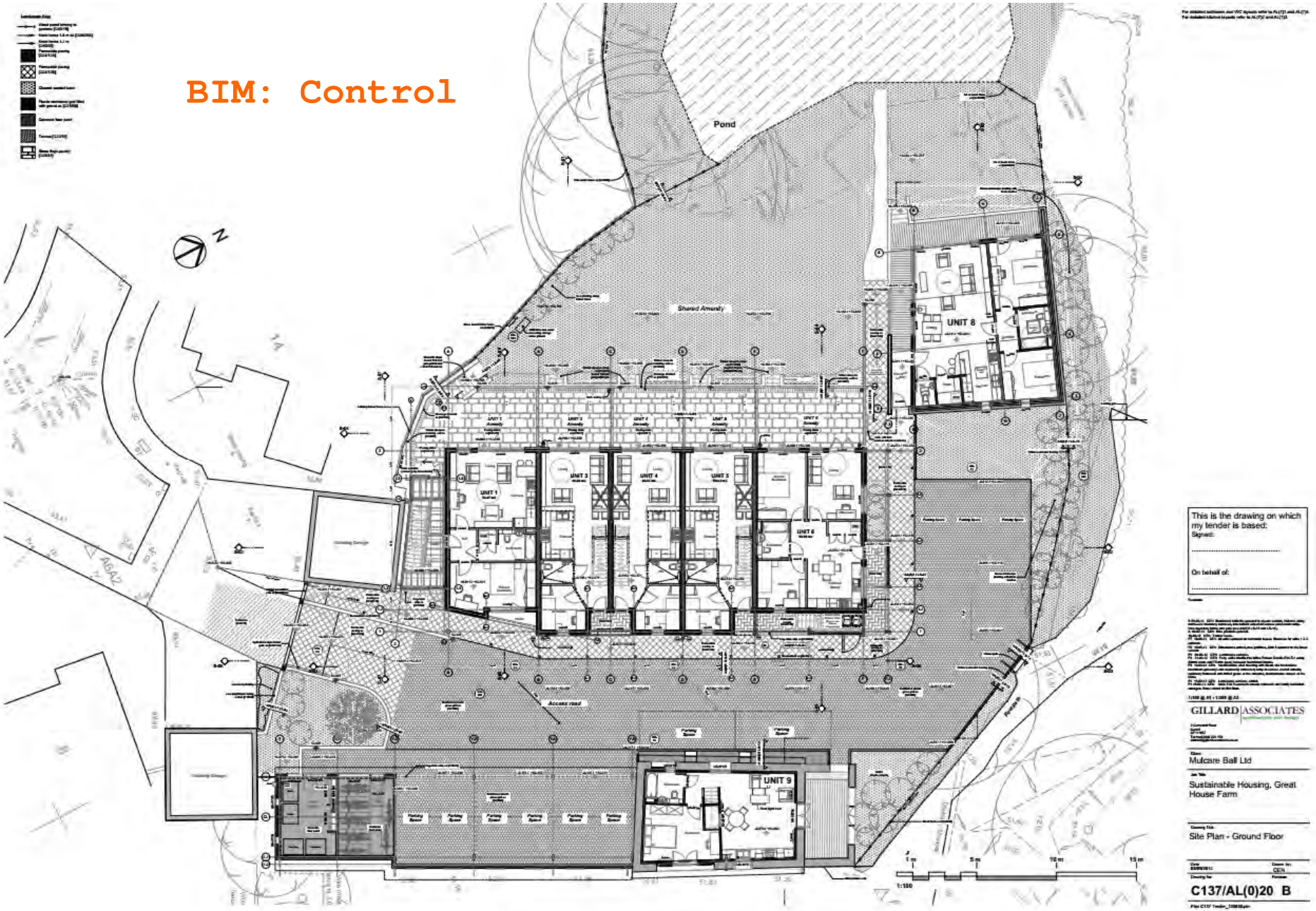
BIM: Control



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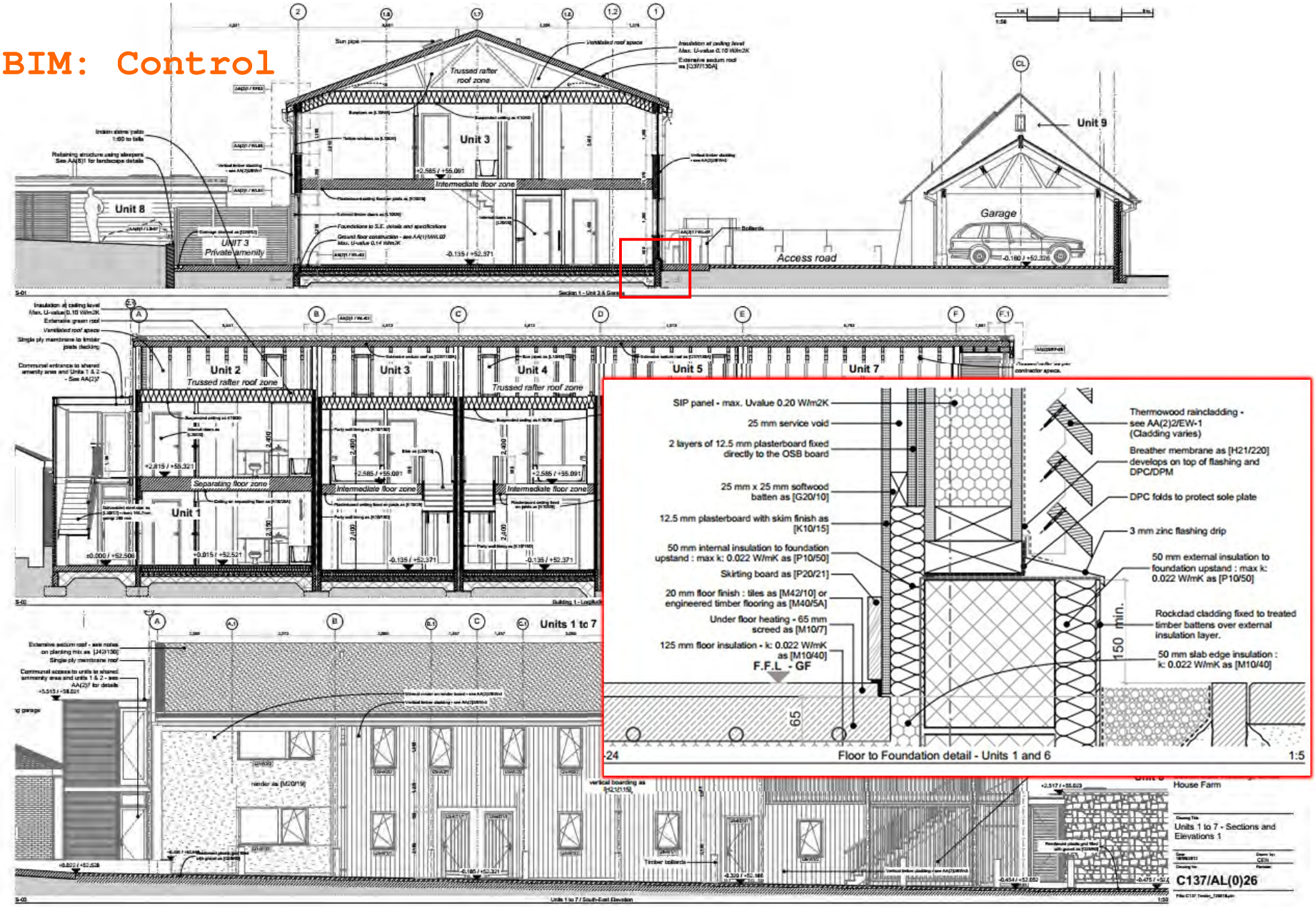

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Site Name: **Great House Farm**

Site reg. number: **007341-120410-02-1068**

CfSH – MAT1

Please find below the cross reference table between the construction details and the Green Guide Bespoke rates:

Green Guide Rate	Drawing	Detail
STRO 12-0024-01	C137 AA(2)2	RF-01
STRO 12-0042-01	C137 AA(2)7	D-04, Section S-02
STRO 12-0042-02	C137 AA(2)2	EW-1
STRO 12-0042-03	C137 AA(2)2	EW-2
STRO 12-0042-04	C137 AA(2)2	EW-3
STRO 12-0042-05	C137 AA(2)2	EW-4
STRO 12-0042-06	C137 AA(2)1	WL-01
STRO 12-0042-07	C137 AA(2)7	D-05
STRO 12-0042-08	C137 AA(2)7	D-02 and D-01
STRO 12-0042-09 K10/15C	C137 AL(0)24, AL(0)25	Marked as NBS ref.
STRO 12-0042-10	C137 AA(2)1	WL-02 and WL-04
STRO 12-0042-11	C137 AA(2)3	WL-21
STRO 12-0042-12	C137 AA(2)8	SF-01
STRO 12-0042-13	C137 AA(2)1	WL-01
STRO 12-0042-14	C137 AA(0)10	GF-02
STRO 12-0047-01	C137 AL(2)5	D7, D8 and D10
STRO 12-0047-02	C137 AA(2)4	D2

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Unit 8 - Daylight Factors - Kitchen Dining Living

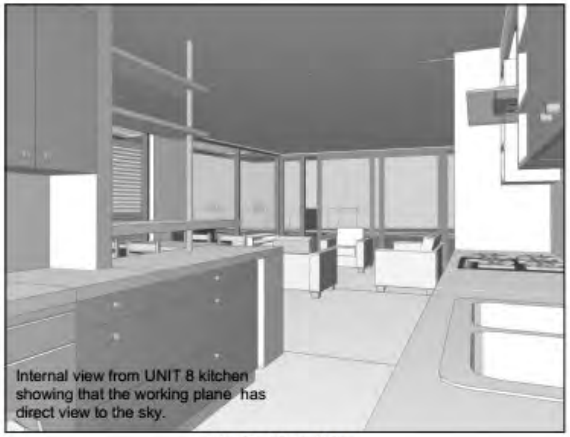
Average Daylight Factor: 3.86%

Window transmittance: 0.6 (triple glazing)

Ceiling reflectance: 0.7
Walls reflectance: 0.5
Floor reflectance: 0.3

Daylight software: LBNL Radiance
Modelling software: Autodesk Ecotect
Sky: CIE overcast sky

This daylight factor calculation refers to the following spaces:
- Kitchen
- Dining Room
- Living Room



Internal view from UNIT 8 kitchen showing that the working plane has direct view to the sky.

Unit 8 - Internal View

Internal view from UNIT 8 kitchen showing that the working plane has direct view to the sky.

Unit 8 - Internal View

Notes:

CfSH - HEA

Revisions

Please refer also to:
C137 AL(0)20 Site Plan - Ground Floor
C137 AL(0)21 Site Plan - First Floor
C137 AL(0)0 Location Plan
C137 AL(0)1 Site Survey
C137 AL(0)28 Unit 8 - Plans
C137 AL(0)29 Unit 8 - Sections and Elevations

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Cardiff
CF11 9RZ
Tel No 02920 229 133
contact@gillardassociates.co.uk

Client
Mulcare Ball Ltd

Job Title
Sustainable Housing, Great House Farm

Drawing Title
Daylight calcs - UNIT 8 - Kitchen Dining Living

Date
13/07/2012

Drawn by:

Drawing No
C137/CSH 7.9

Revision
P

File: C137 Tender_120709.pln

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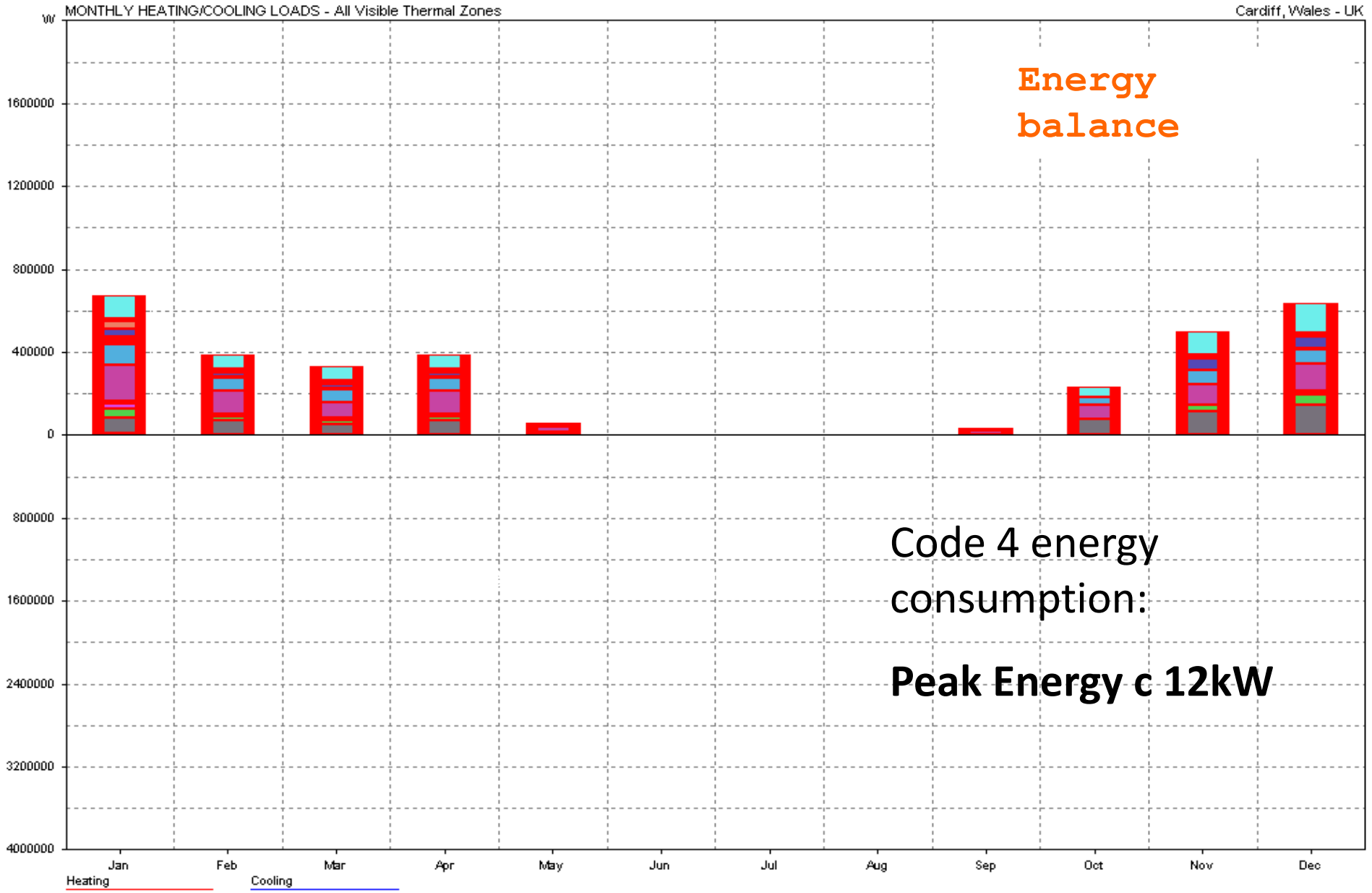

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Efficient heating

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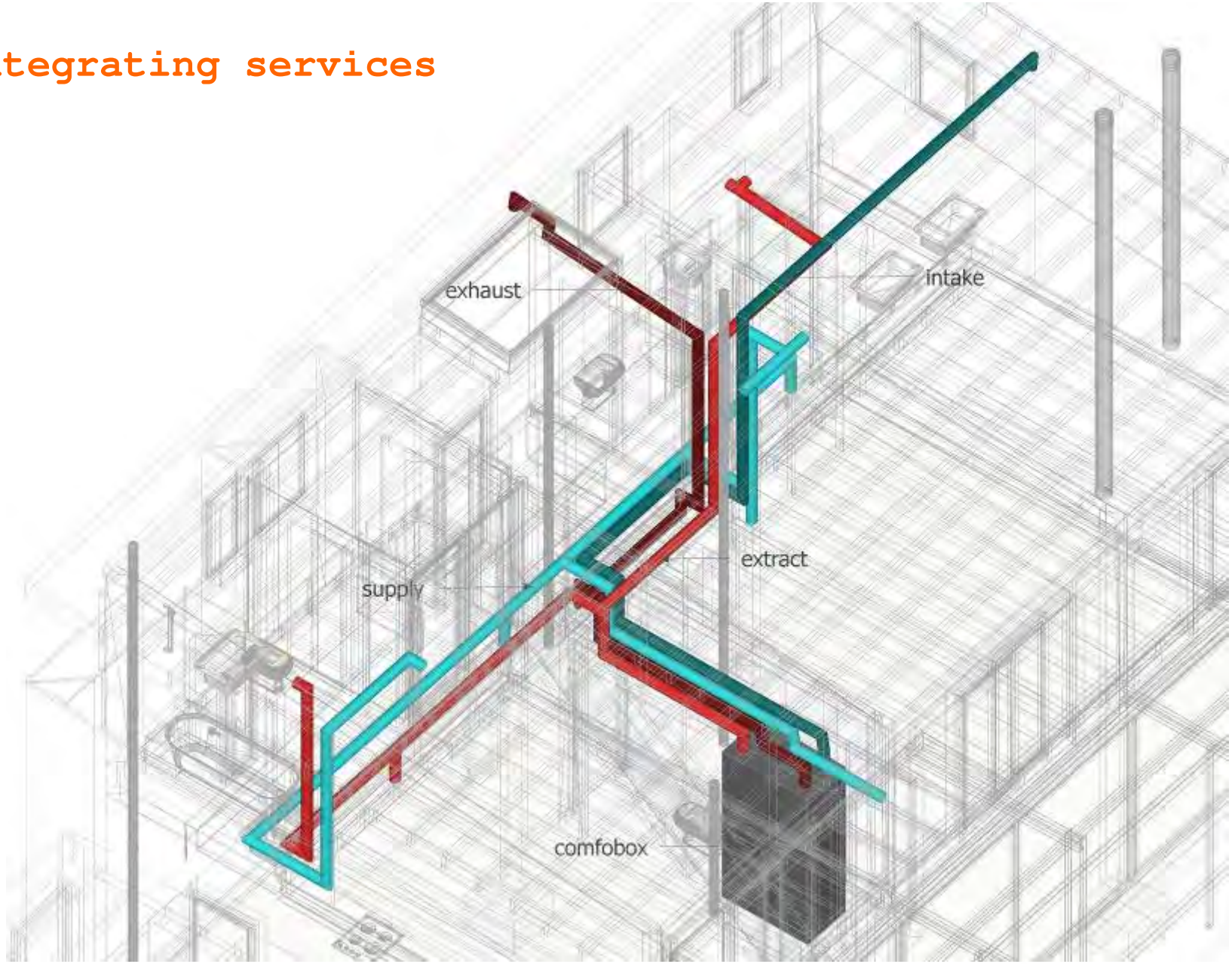
Integrating services



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Prefabrication

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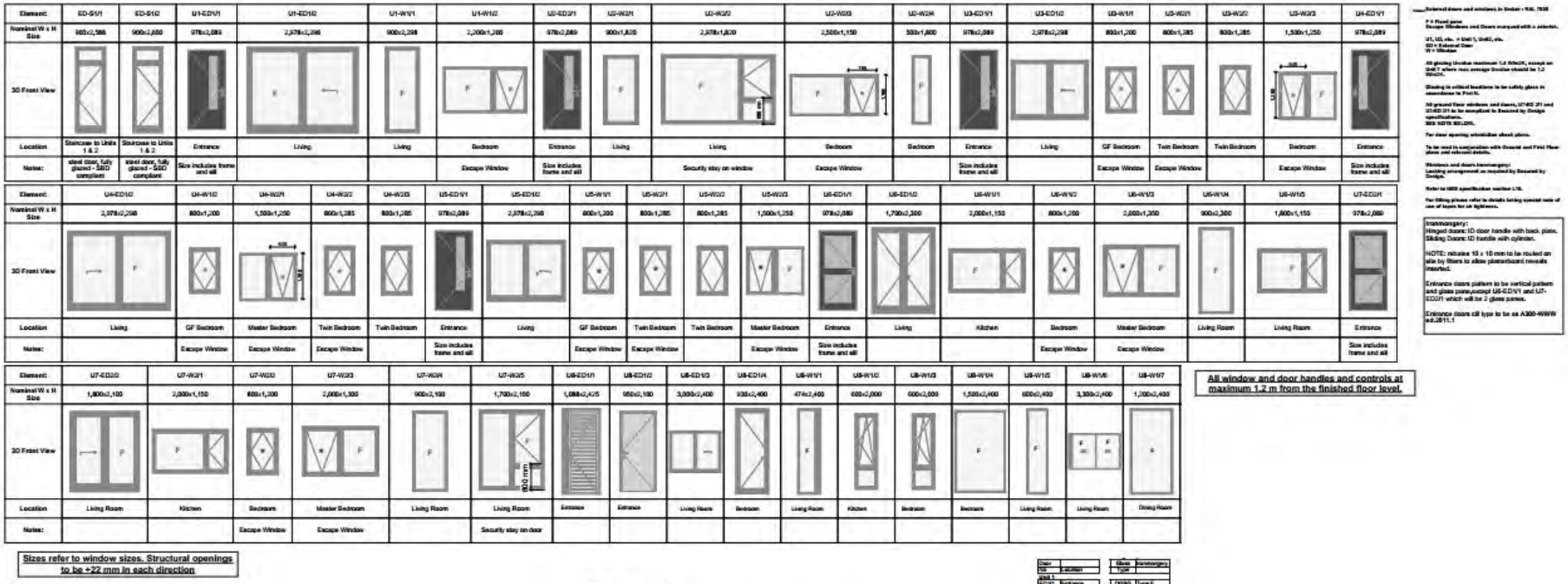

All window and door handles and controls at maximum 1.2 m from the finished floor level.

Sizes refer to window sizes. Structural openings to be +22 mm in each direction

Efficient procurement

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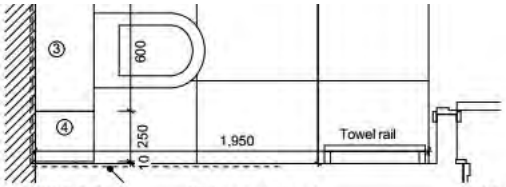
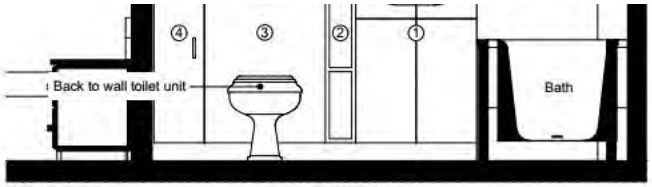


UNITS 6 & 7 Bathroom Layout 1:25

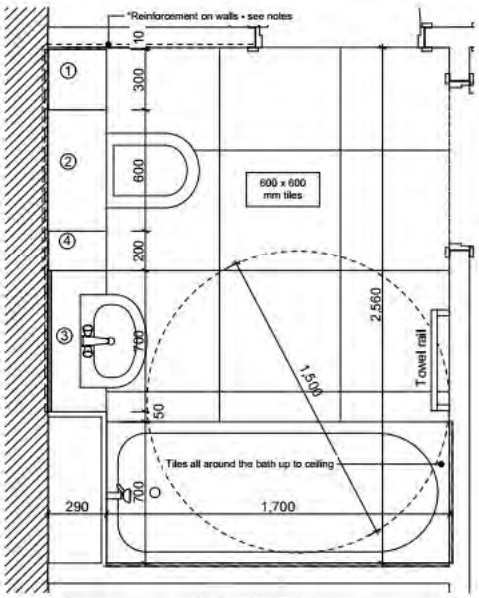


UNITS 6 & 7 Bathroom Elevation

UNITS 6 & 7 Bathroom Perspective

Units 3, 4 & 5:

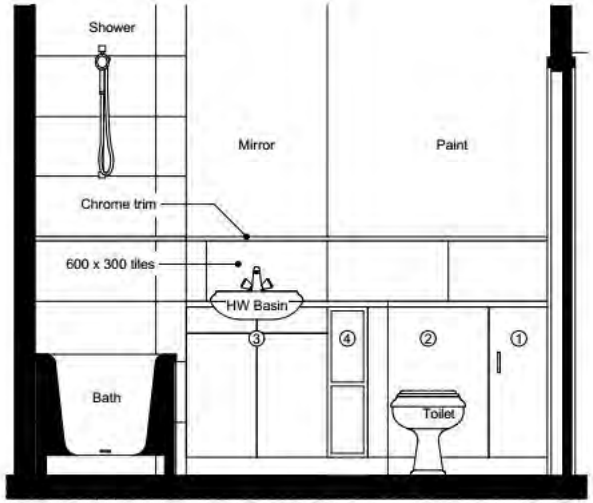
Modular design



UNIT 3/5 Bathroom Layout 1:25

Units 3,4 and 5:

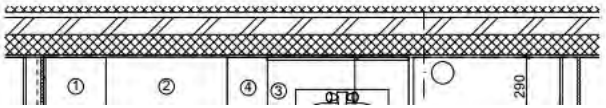
Bathroom:
1) 300 x 290 mm VIO cabinet unit
2) 600 x 290 mm VIO Toilet Unit
3) 700 x 290 mm VIO Hand Wash cabinet
4) 200 x 290 mm VIO open shelf unit
Tiles: 600 x 600 mm
Wall tiles: 600 x 300 mm

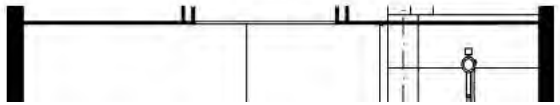


UNIT 3/5 Bathroom Elevation 1:25

UNIT 3/5 Bathroom Perspective

Unit 8





Units8:

Bathroom:
1) 300 x 200 m
2) 600 x 200 m
3) 700 x 200 m
4) 200 x 200 m

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Use of BIM for Designers / Traditional Contracts

RIBA 1 Briefing

Site analysis – modelling, solar, etc

RIBA 2 Concept

Key Decisions at beginning – lean/green

Clear communication and presentation – planning/client understanding

Environmental design – quick and dirty concepts as part of the model

Early cost indicators

RIBA 3 Developed Design

Co-ordination with other consultants – structure, M&E (!), QS

Design Build – crucial stage

RIBA 4 Technical Design and Production Stage

Accurate scheduling and procurement

Component co ordination

Modular construction

Ease of communication to site staff/drawing updates facilitated

M&E co ordination

RIBA 5 Construction

Communication with contractor

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Design Build Contracts

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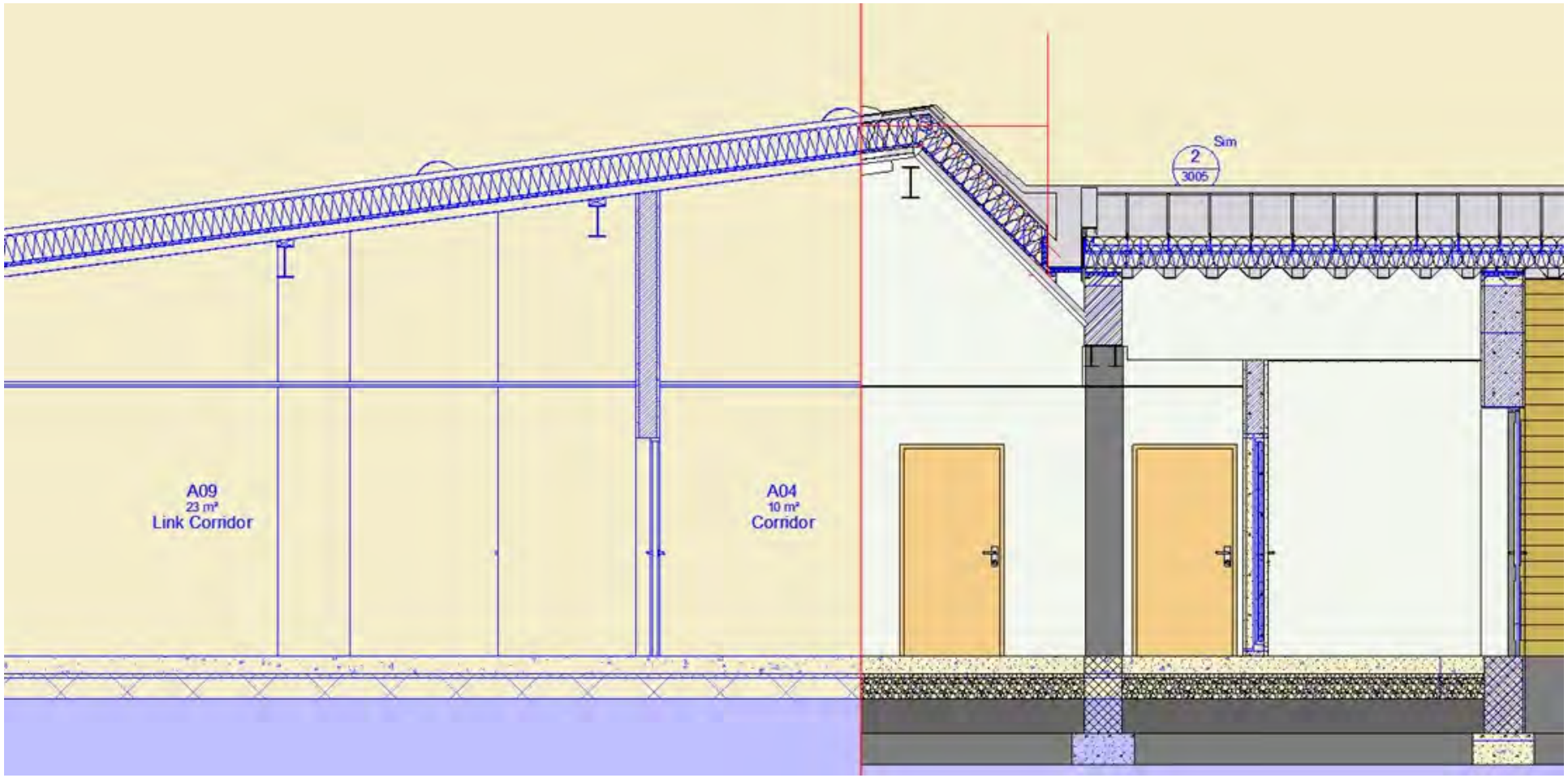

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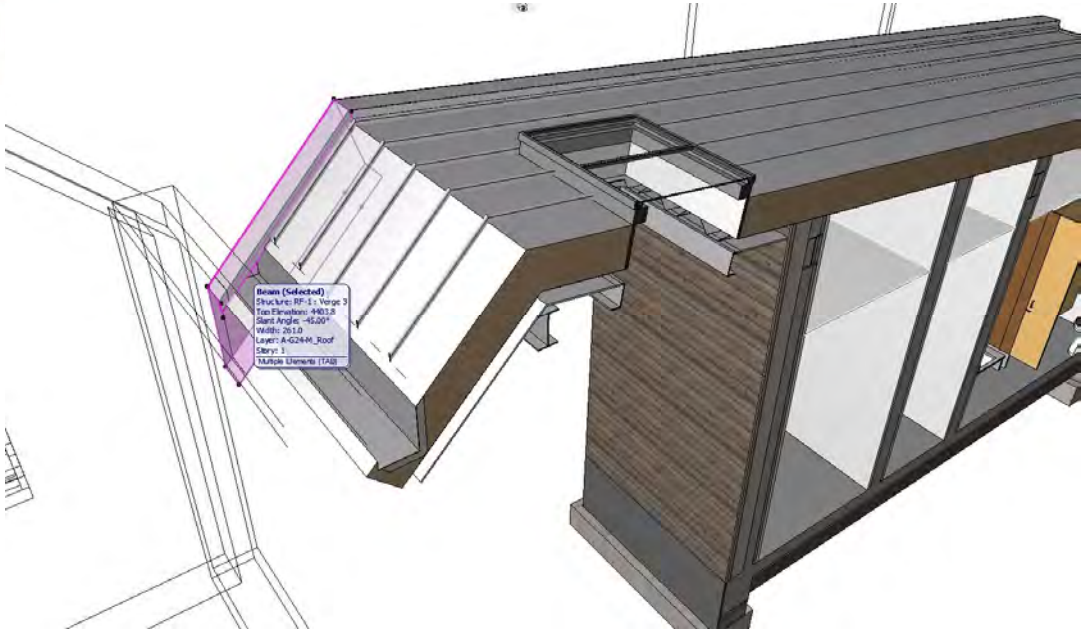

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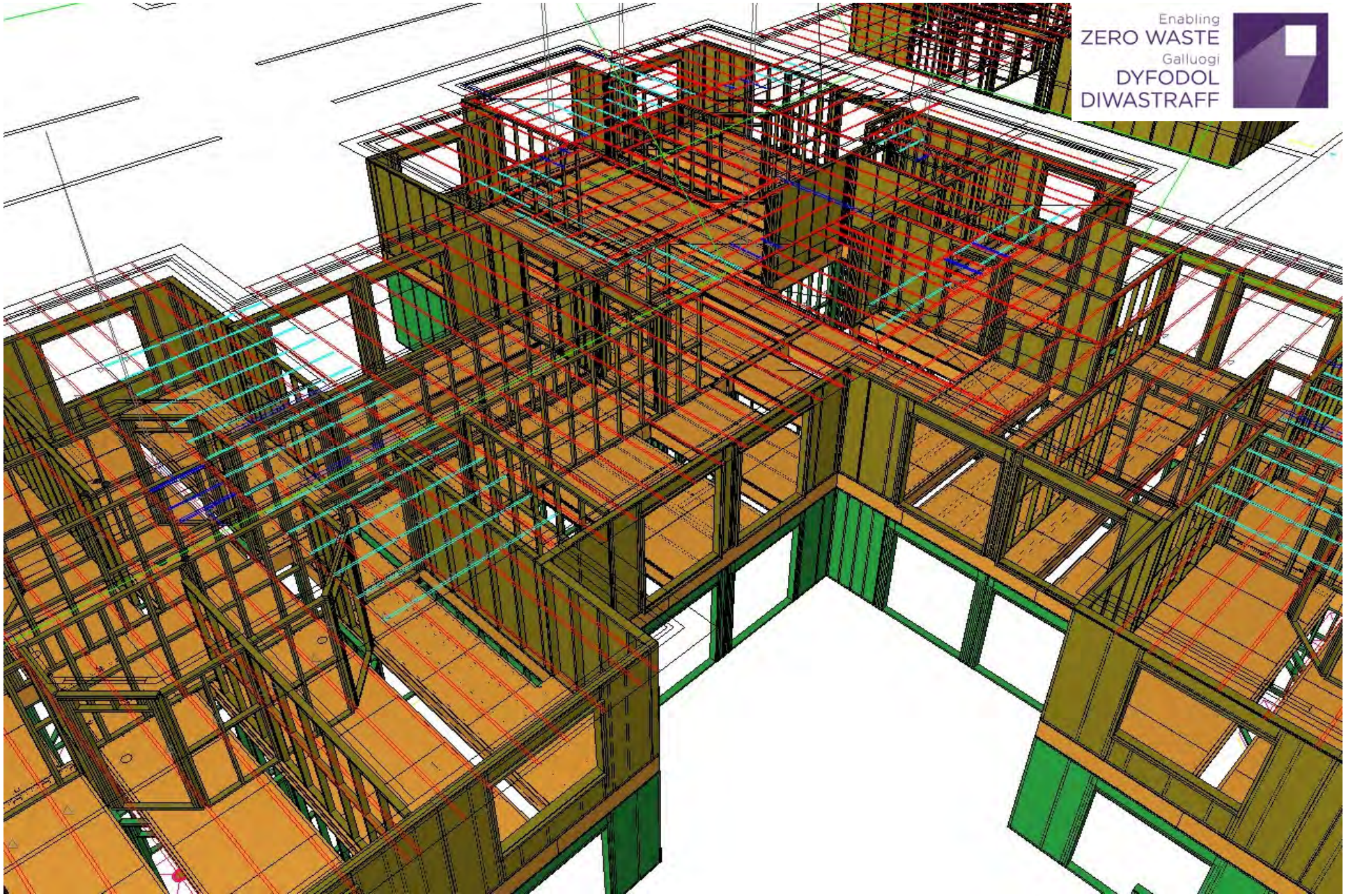

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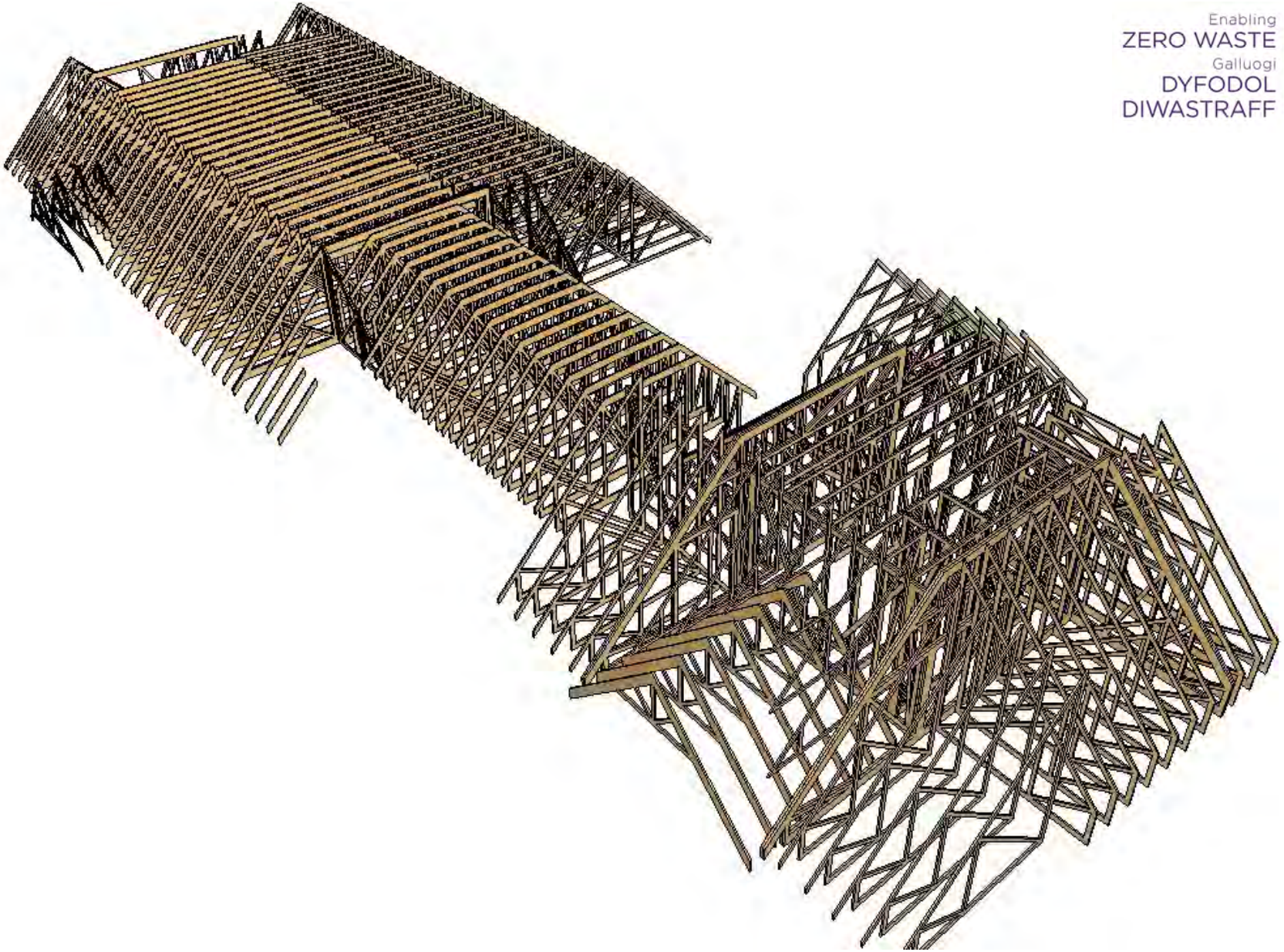

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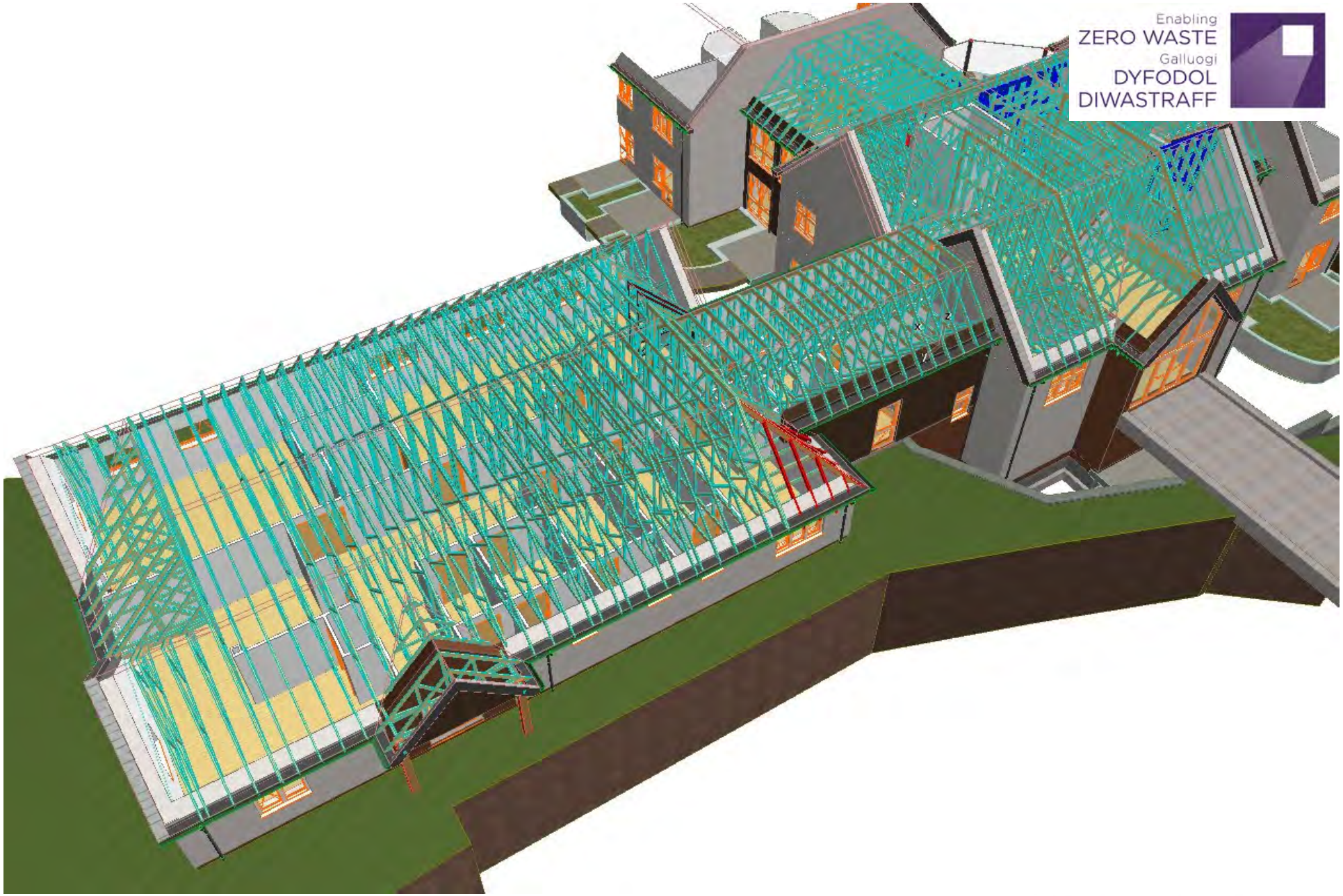

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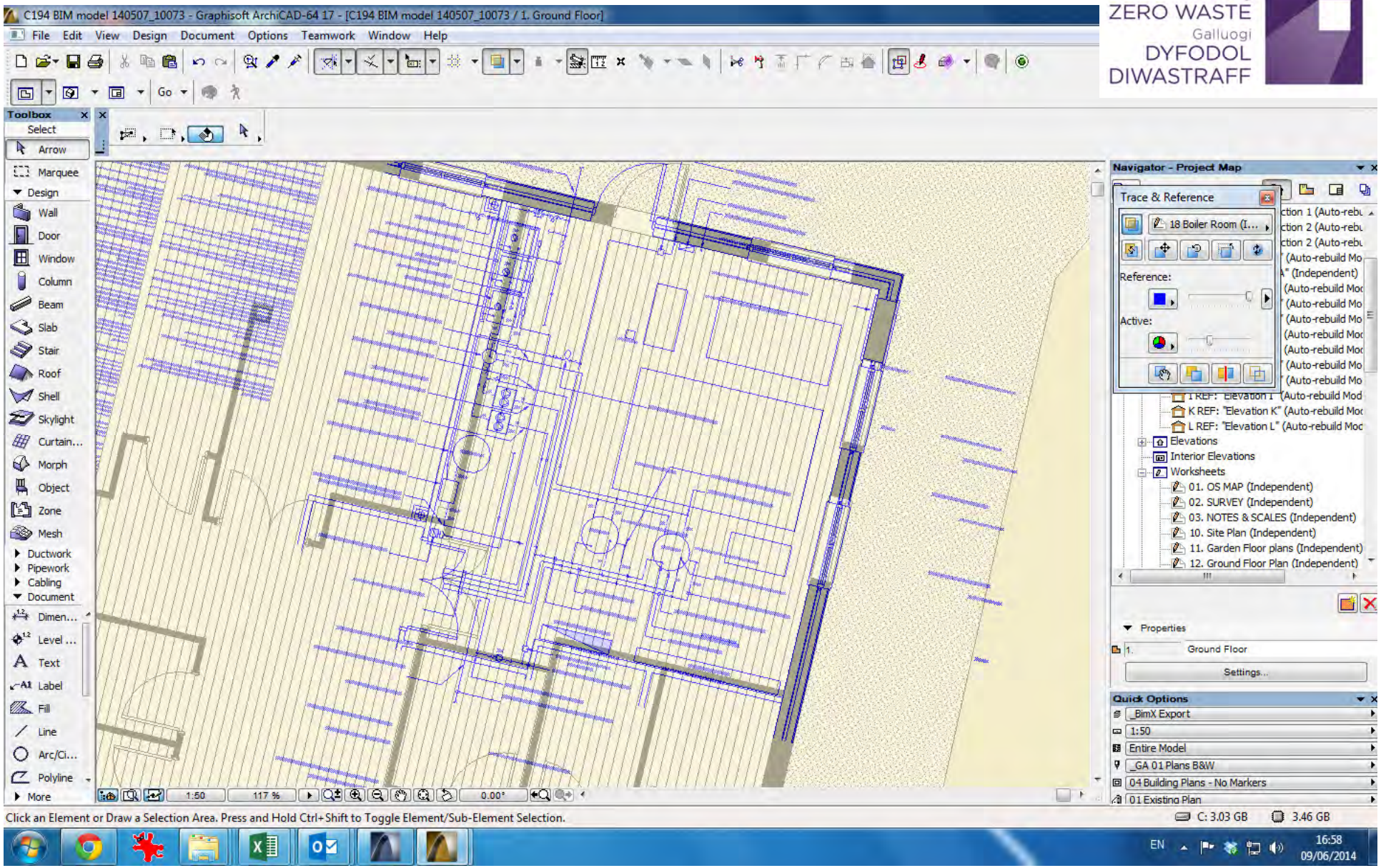

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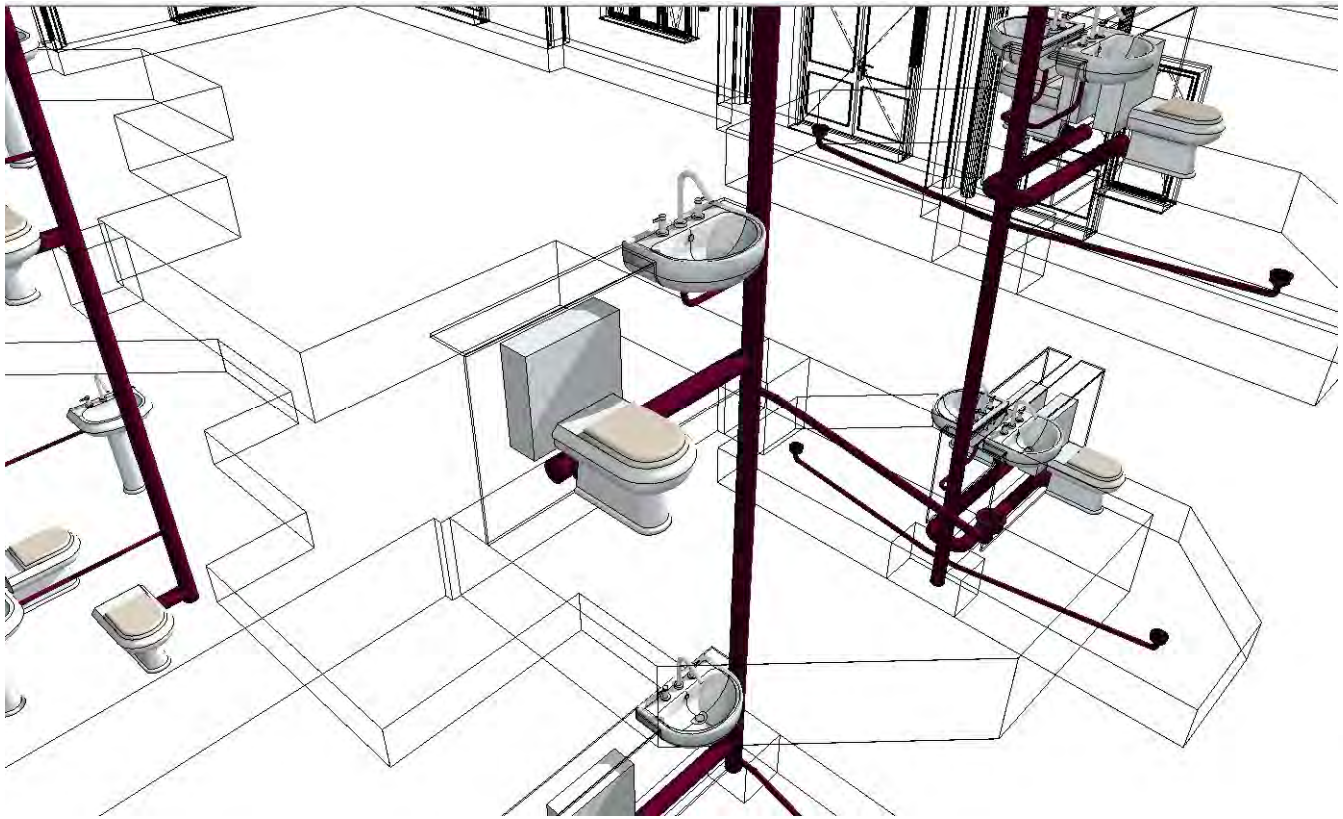

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Design Build Contracts

Some Barriers

Business as usual – if it ain't broke…

Consultants/sub contractors not keen – cost, time, etc

Software – incompatibility issues

Tendency to leave things to the next guy in the chain

Communication

Ring fencing responsibility

Some Incentives

Government contracts

Higher profits – published figures suggest contractor doubling profit margins

Speed – eg, less management time on site to resolve problems

BRE BIM AP accreditation

BIM Level 2 means “Fully collaborative 3D BIM” – requires a clear system to deliver consistent information for the building’s design, construction and operation phases.

BRE AP training is helping our capability to achieve BIM level 2

Understanding PAS 1192-2

– defines and manages the information delivery cycle along the design and construction phase

“To deliver correct information at the appropriate time”

Making Changes to Our Way of Working – BIM Strategy

Production of information: introducing standard methods and procedures to comply with BS1192:2007:

- Common Data Environment
- Exchanging formats (IFC, PDF, …)refined and implemented
- Levels of development
- Strategies for model organization and sharing

Different roles and responsibilities inside a BIM Level 2 project

Will enable us to act as architects but also project managers or information managers

“MORE DISCIPLINE BUT NOT MORE WORK”

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Summary

More Productivity	Faster approvals
	Faster mods
	Faster design
	Reduce waste(d time effort resources)
Reduce Risk	For designer (trad. Contract)
	For design build Contractor

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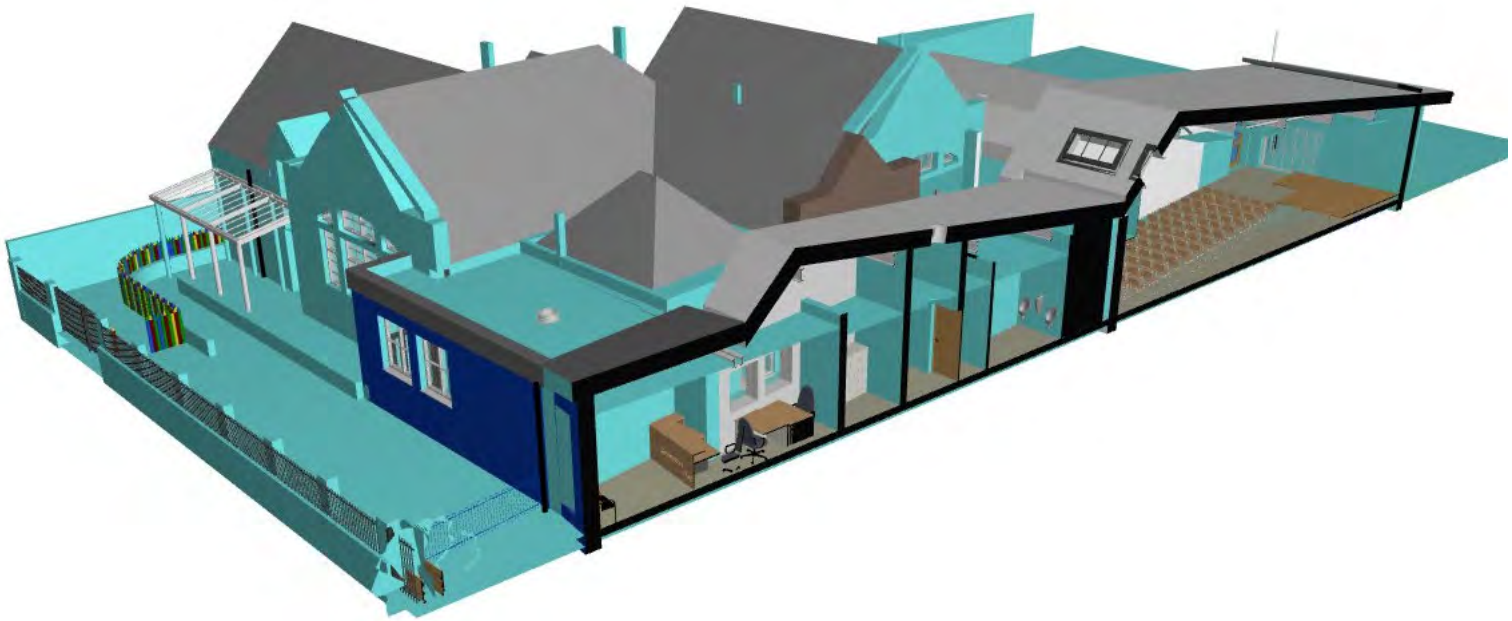

Every building is a prototype – why not build it before you build it?

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