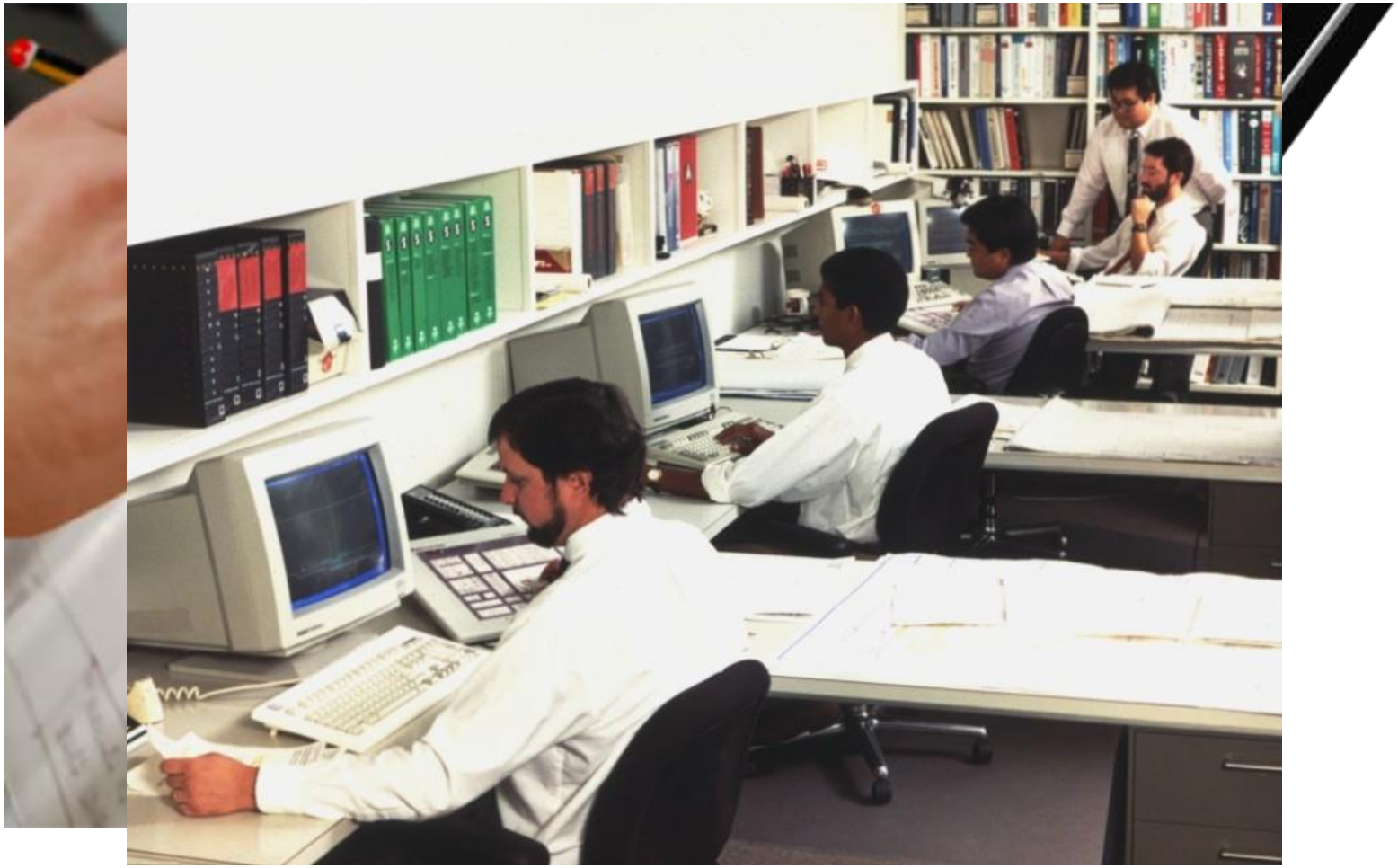
BIM – A House Builder's Perspective

Craig Ferrans – Miller Homes Divisional Design Director

Introduction



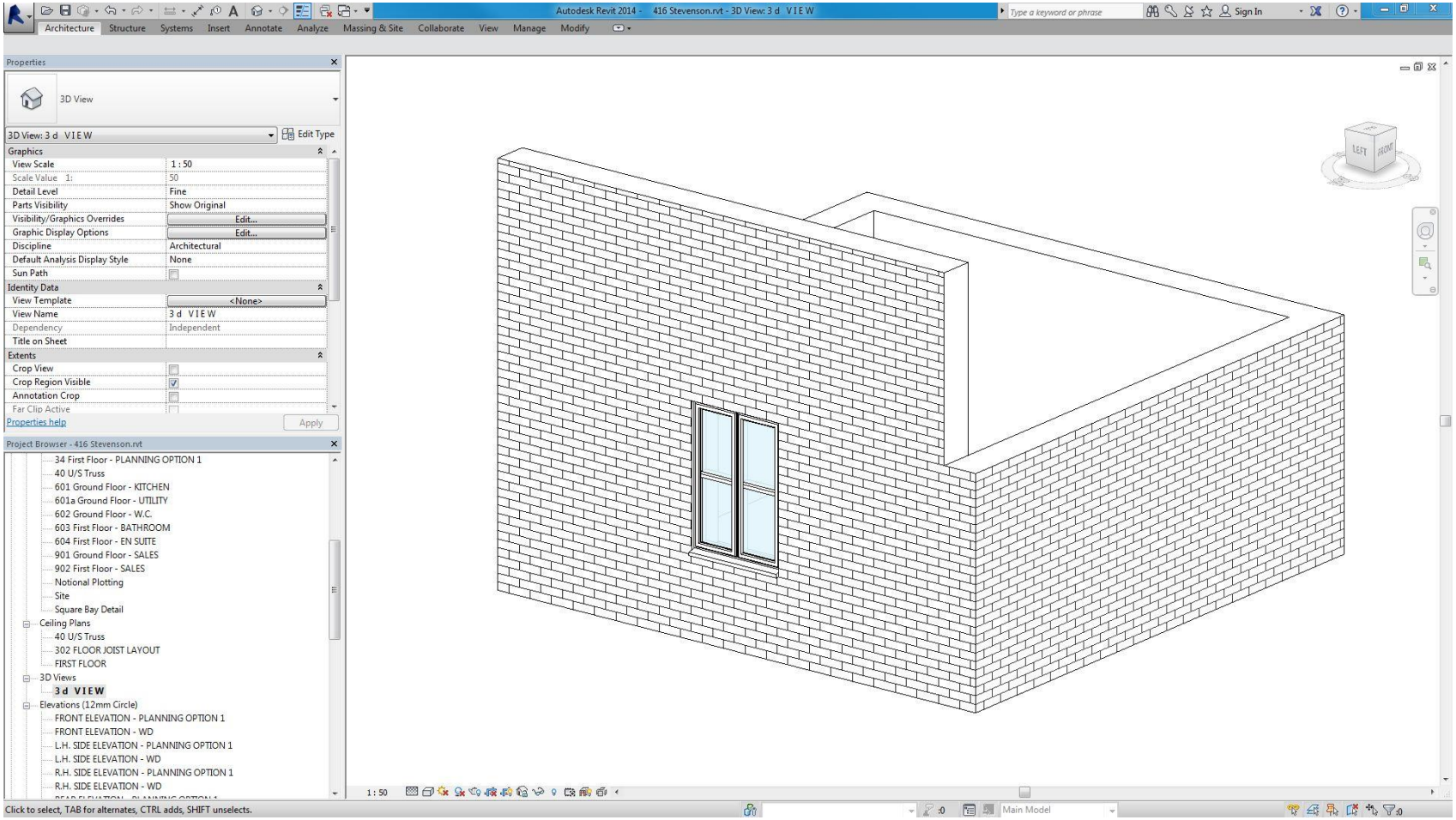
Fact Finding

Fact Finding

Collaboration

First impressions

First impressions



Building the Business Case

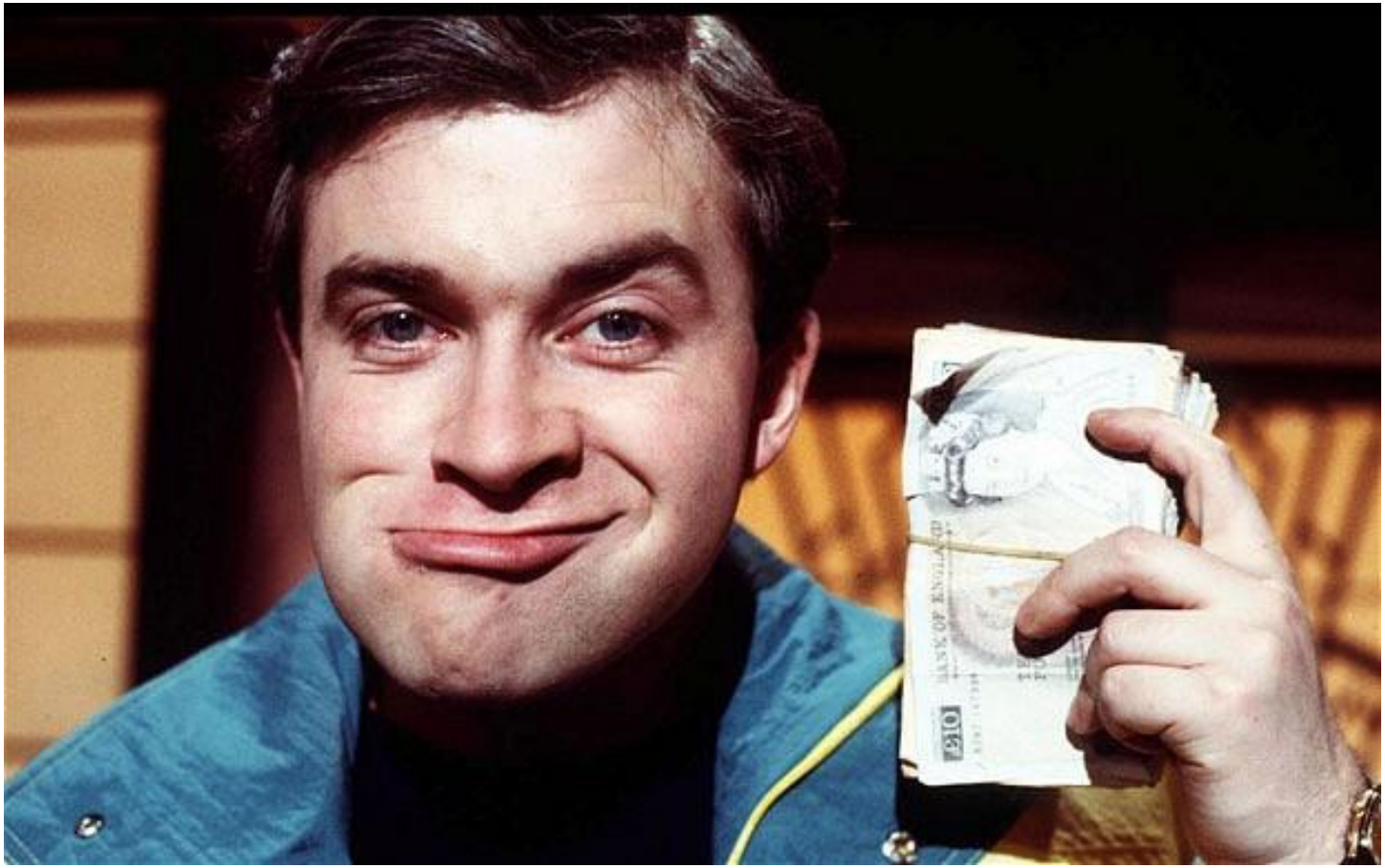
4 Main Areas

- Standardisation
- Fabric changes
- Procurement support
- Collaboration

Updating the Business

Setting Out Your Stall

Costs



Software Costs

- Revit LT 2014 - £1,125 plus £170 1Yr subscription
- AutoCAD and Revit LT 2014 Suite - £1,550 plus £235 1Yr Subscription
- Revit Architecture 2014 - £5,100 plus £765 1Yr Subscription
- Building Design Suite (Premium) 2014 £6,200 plus £930 1Yr Subscription
- Upgrades for existing AutoCAD license's maybe possible

Note that the costs relate to NEW standalone license's and are standard retail prices

MicroCAD
COMPUTER AIDED DESIGN SPECIALISTS LTD

Training

- Revit Architecture 2014 Essentials 3 Days - £740/person
- Revit Architecture 2014 Advanced 1-2 Days - £270 - £540/person
- Family Creation 2 Days - £540/person
- Consultancy – Project set up on suite 1 Day - £675
- BIM overview session 1-2 hours incl. CPD – No Charge

MicroCAD
COMPUTER AIDED DESIGN SPECIALISTS LTD

AUTODESK.
Gold Partner
Authorized Training Center

Websites

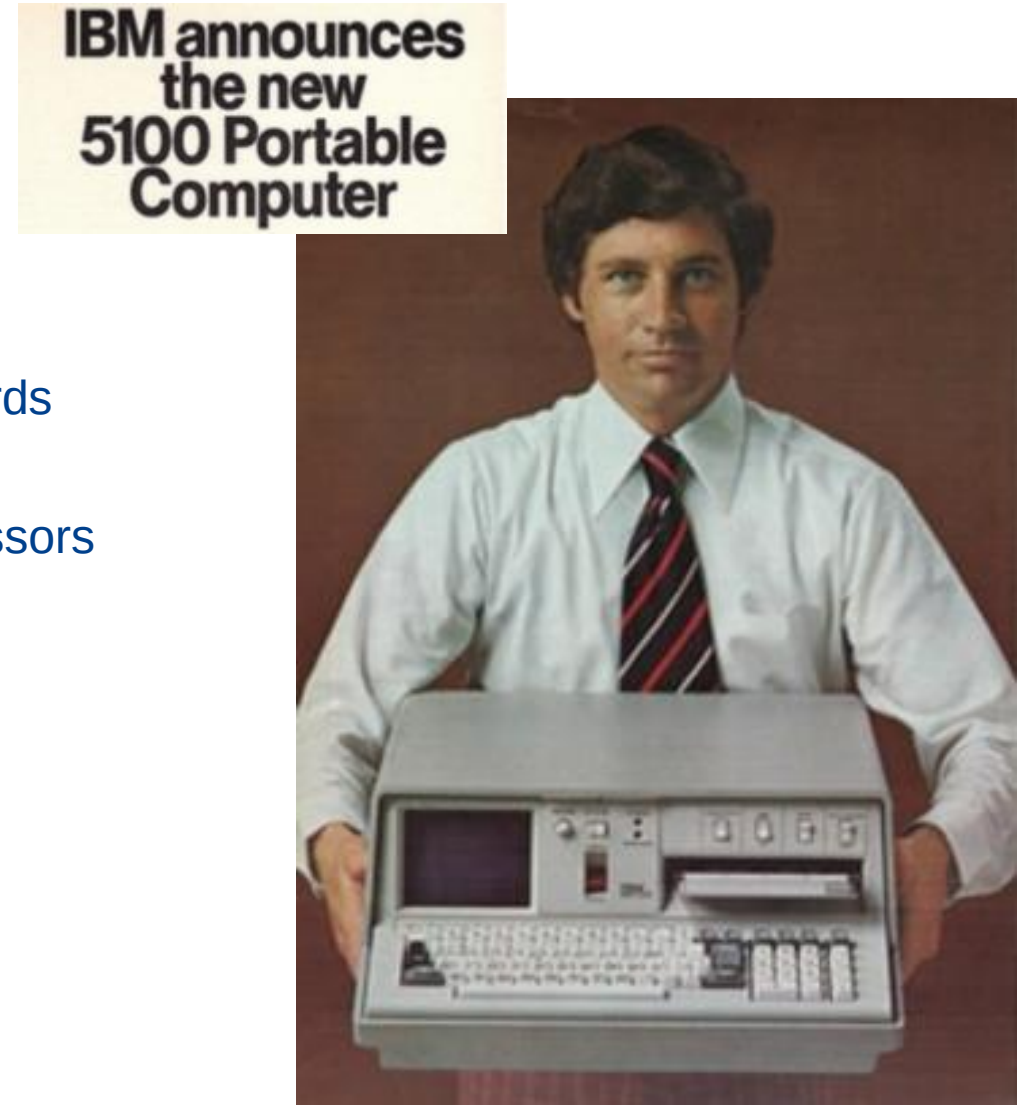
Expert Village
World's Largest How-to Video Site

YouTube

WIKIPEDIA

Revit Forum
www.revitforum.org

Hardware



Key Components

- Dedicated graphics cards
- Core i7 or Xeon processors
- Plenty of RAM
- Good display devices

Hardware

File size increase from 1.3mb to 60mb

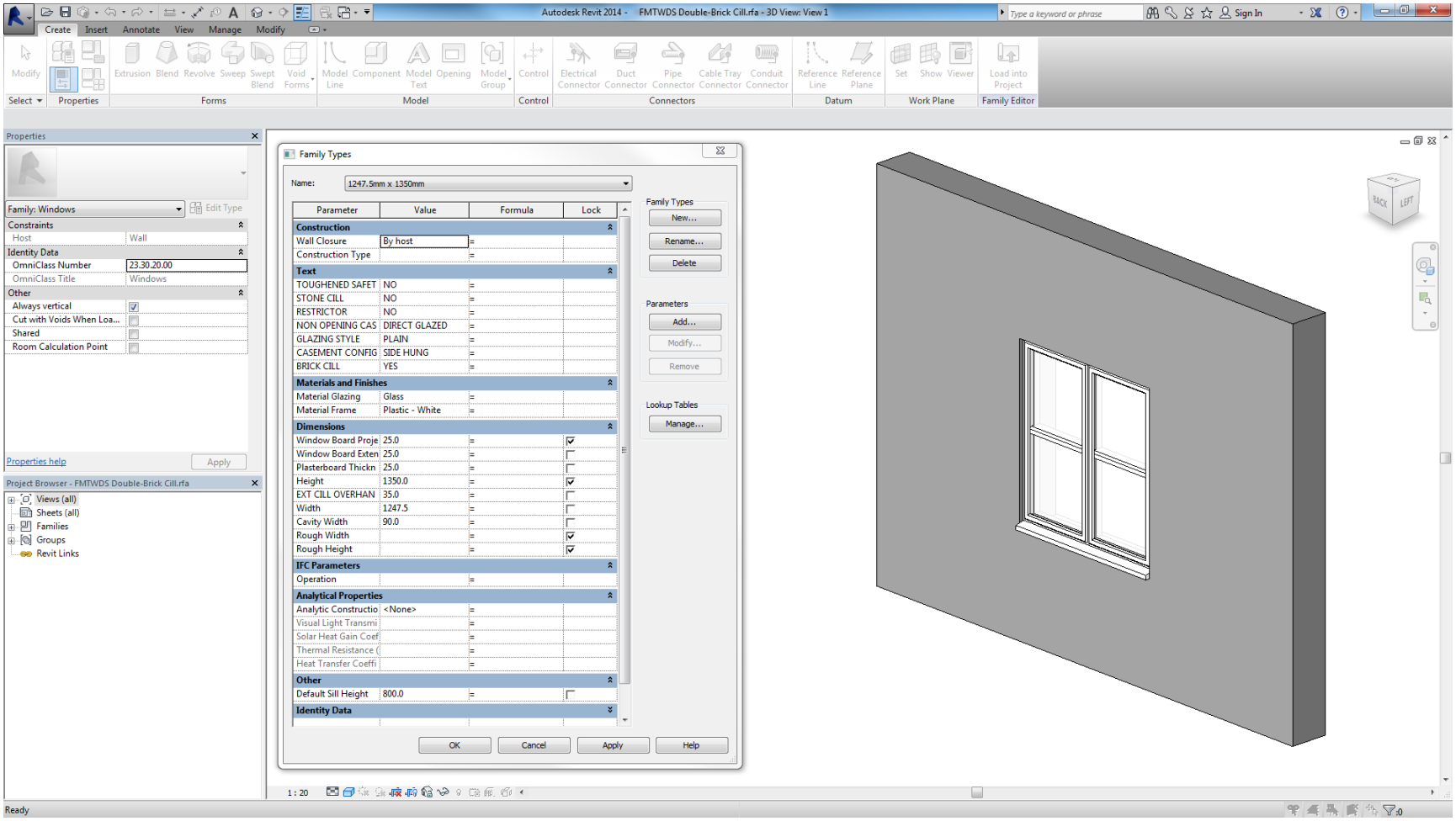
Myth Busting

Terminology

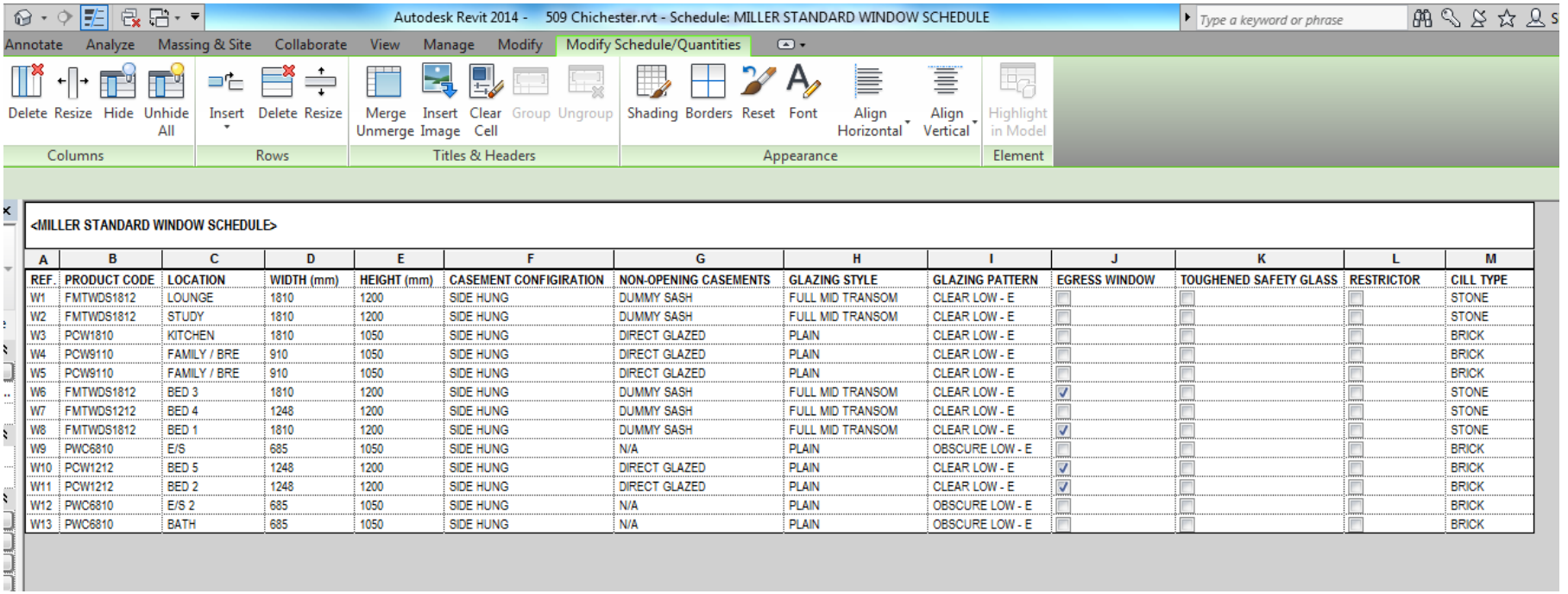
Blocks

Family

Family Creation



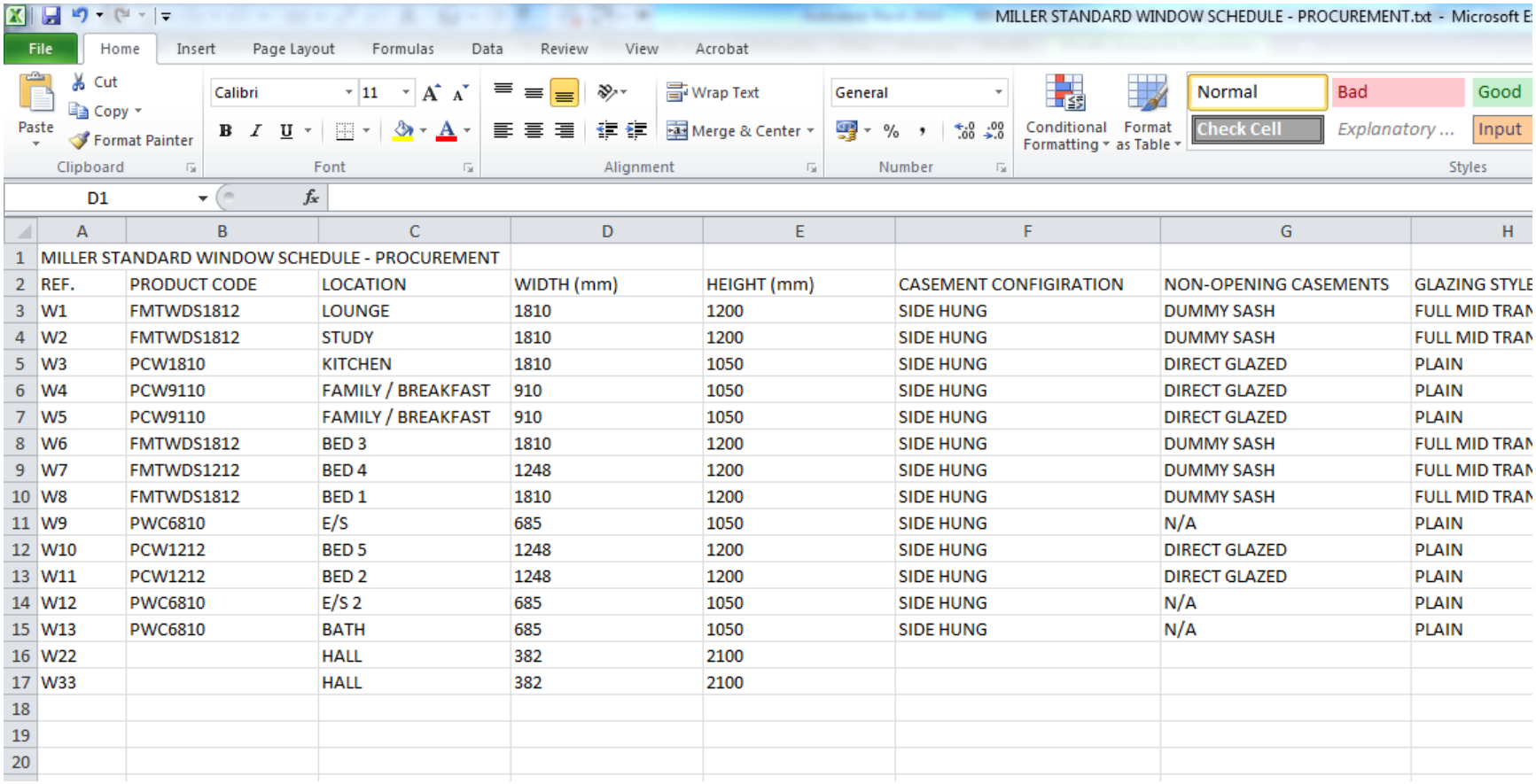
Scheduling



<MILLER STANDARD WINDOW SCHEDULE>

A	B	C	D	E	F	G	H	I	J	K	L	M
REF.	PRODUCT CODE	LOCATION	WIDTH (mm)	HEIGHT (mm)	CASEMENT CONFIGIRATION	NON-OPENING CASEMENTS	GLAZING STYLE	GLAZING PATTERN	EGRESS WINDOW	TOUGHENED SAFETY GLASS	RESTRICTOR	CILL TYPE
W1	FMTWDS1812	LOUNGE	1810	1200	SIDE HUNG	DUMMY SASH	FULL MID TRANSOM	CLEAR LOW - E	☐	☐	☐	STONE
W2	FMTWDS1812	STUDY	1810	1200	SIDE HUNG	DUMMY SASH	FULL MID TRANSOM	CLEAR LOW - E	☐	☐	☐	STONE
W3	PCW1810	KITCHEN	1810	1050	SIDE HUNG	DIRECT GLAZED	PLAIN	CLEAR LOW - E	☐	☐	☐	BRICK
W4	PCW9110	FAMILY / BRE	910	1050	SIDE HUNG	DIRECT GLAZED	PLAIN	CLEAR LOW - E	☐	☐	☐	BRICK
W5	PCW9110	FAMILY / BRE	910	1050	SIDE HUNG	DIRECT GLAZED	PLAIN	CLEAR LOW - E	☐	☐	☐	BRICK
W6	FMTWDS1812	BED 3	1810	1200	SIDE HUNG	DUMMY SASH	FULL MID TRANSOM	CLEAR LOW - E	☑	☐	☐	STONE
W7	FMTWDS1212	BED 4	1248	1200	SIDE HUNG	DUMMY SASH	FULL MID TRANSOM	CLEAR LOW - E	☐	☐	☐	STONE
W8	FMTWDS1812	BED 1	1810	1200	SIDE HUNG	DUMMY SASH	FULL MID TRANSOM	CLEAR LOW - E	☑	☐	☐	STONE
W9	PWC6810	E/S	685	1050	SIDE HUNG	N/A	PLAIN	OBSCURE LOW - E	☐	☐	☐	BRICK
W10	PCW1212	BED 5	1248	1200	SIDE HUNG	DIRECT GLAZED	PLAIN	CLEAR LOW - E	☑	☐	☐	BRICK
W11	PCW1212	BED 2	1248	1200	SIDE HUNG	DIRECT GLAZED	PLAIN	CLEAR LOW - E	☑	☐	☐	BRICK
W12	PWC6810	E/S 2	685	1050	SIDE HUNG	N/A	PLAIN	OBSCURE LOW - E	☐	☐	☐	BRICK
W13	PWC6810	BATH	685	1050	SIDE HUNG	N/A	PLAIN	OBSCURE LOW - E	☐	☐	☐	BRICK

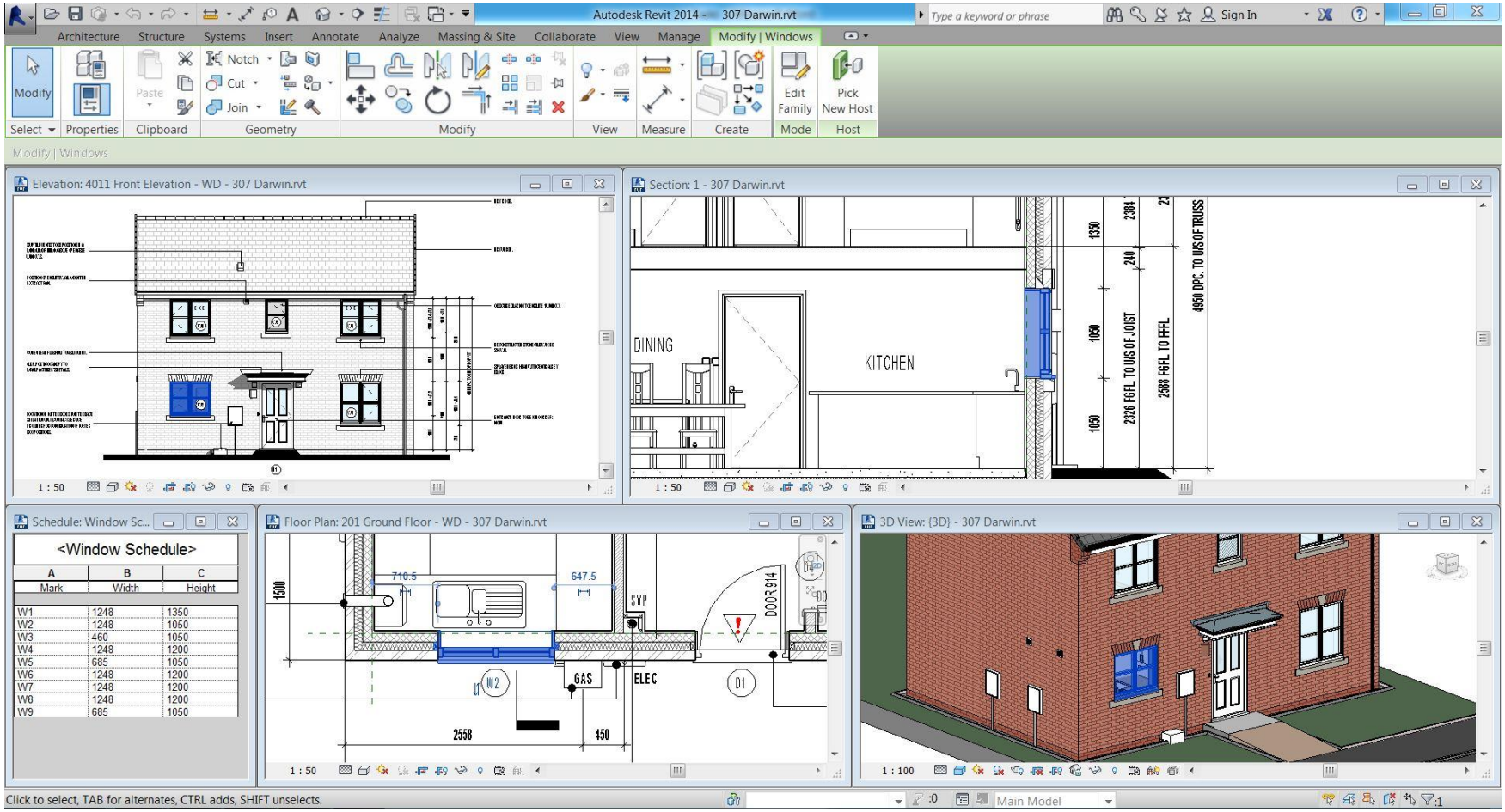
Scheduling



	A	B	C	D	E	F	G	H
1	MILLER STANDARD WINDOW SCHEDULE - PROCUREMENT							
2	REF.	PRODUCT CODE	LOCATION	WIDTH (mm)	HEIGHT (mm)	CASEMENT CONFIGIRATION	NON-OPENING CASEMENTS	GLAZING STYLE
3	W1	FMTWDS1812	LOUNGE	1810	1200	SIDE HUNG	DUMMY SASH	FULL MID TRAN
4	W2	FMTWDS1812	STUDY	1810	1200	SIDE HUNG	DUMMY SASH	FULL MID TRAN
5	W3	PCW1810	KITCHEN	1810	1050	SIDE HUNG	DIRECT GLAZED	PLAIN
6	W4	PCW9110	FAMILY / BREAKFAST	910	1050	SIDE HUNG	DIRECT GLAZED	PLAIN
7	W5	PCW9110	FAMILY / BREAKFAST	910	1050	SIDE HUNG	DIRECT GLAZED	PLAIN
8	W6	FMTWDS1812	BED 3	1810	1200	SIDE HUNG	DUMMY SASH	FULL MID TRAN
9	W7	FMTWDS1212	BED 4	1248	1200	SIDE HUNG	DUMMY SASH	FULL MID TRAN
10	W8	FMTWDS1812	BED 1	1810	1200	SIDE HUNG	DUMMY SASH	FULL MID TRAN
11	W9	PWC6810	E/S	685	1050	SIDE HUNG	N/A	PLAIN
12	W10	PCW1212	BED 5	1248	1200	SIDE HUNG	DIRECT GLAZED	PLAIN
13	W11	PCW1212	BED 2	1248	1200	SIDE HUNG	DIRECT GLAZED	PLAIN
14	W12	PWC6810	E/S 2	685	1050	SIDE HUNG	N/A	PLAIN
15	W13	PWC6810	BATH	685	1050	SIDE HUNG	N/A	PLAIN
16	W22		HALL	382	2100			
17	W33		HALL	382	2100			
18								
19								
20								

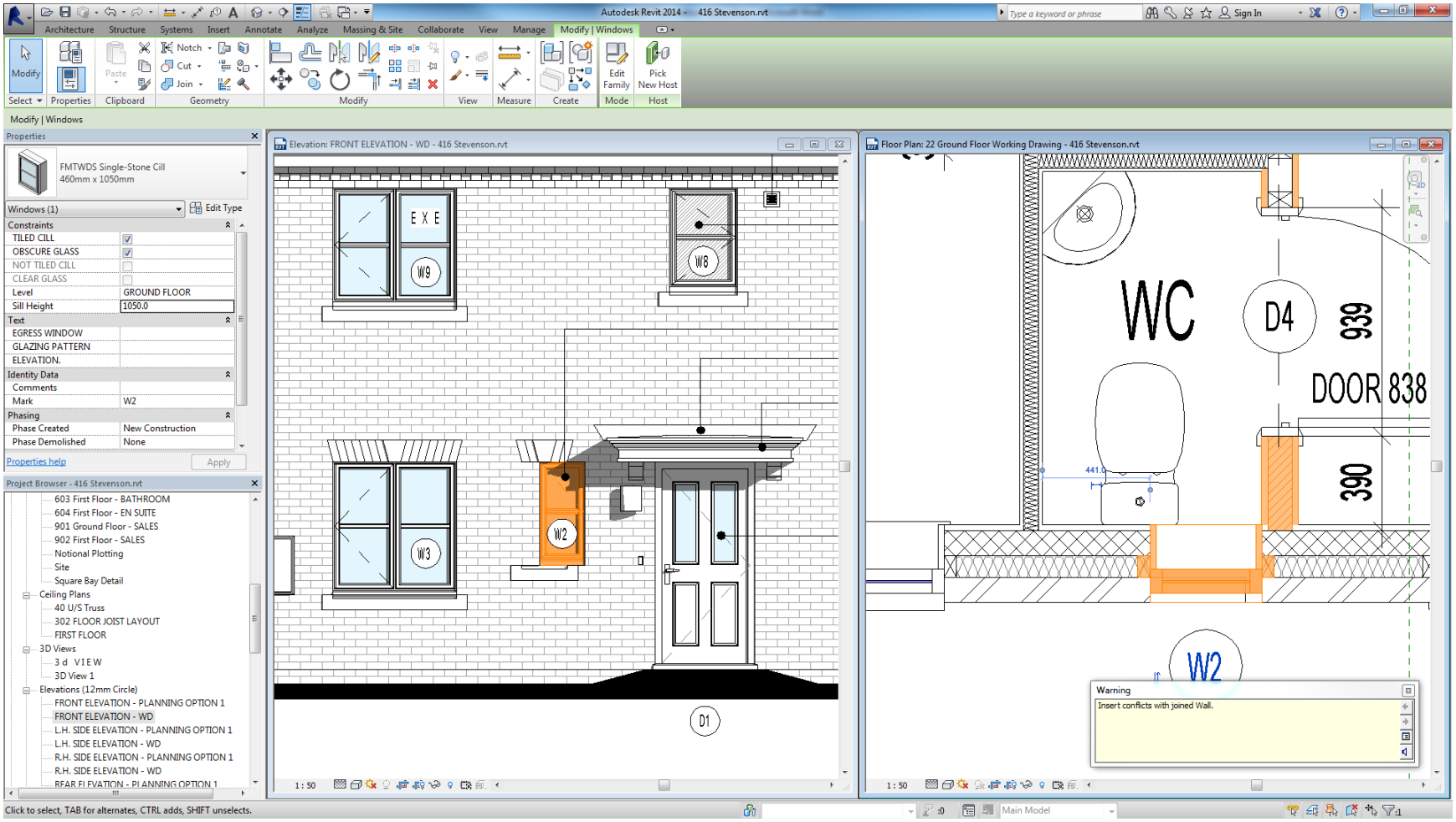
Think!

Live Views

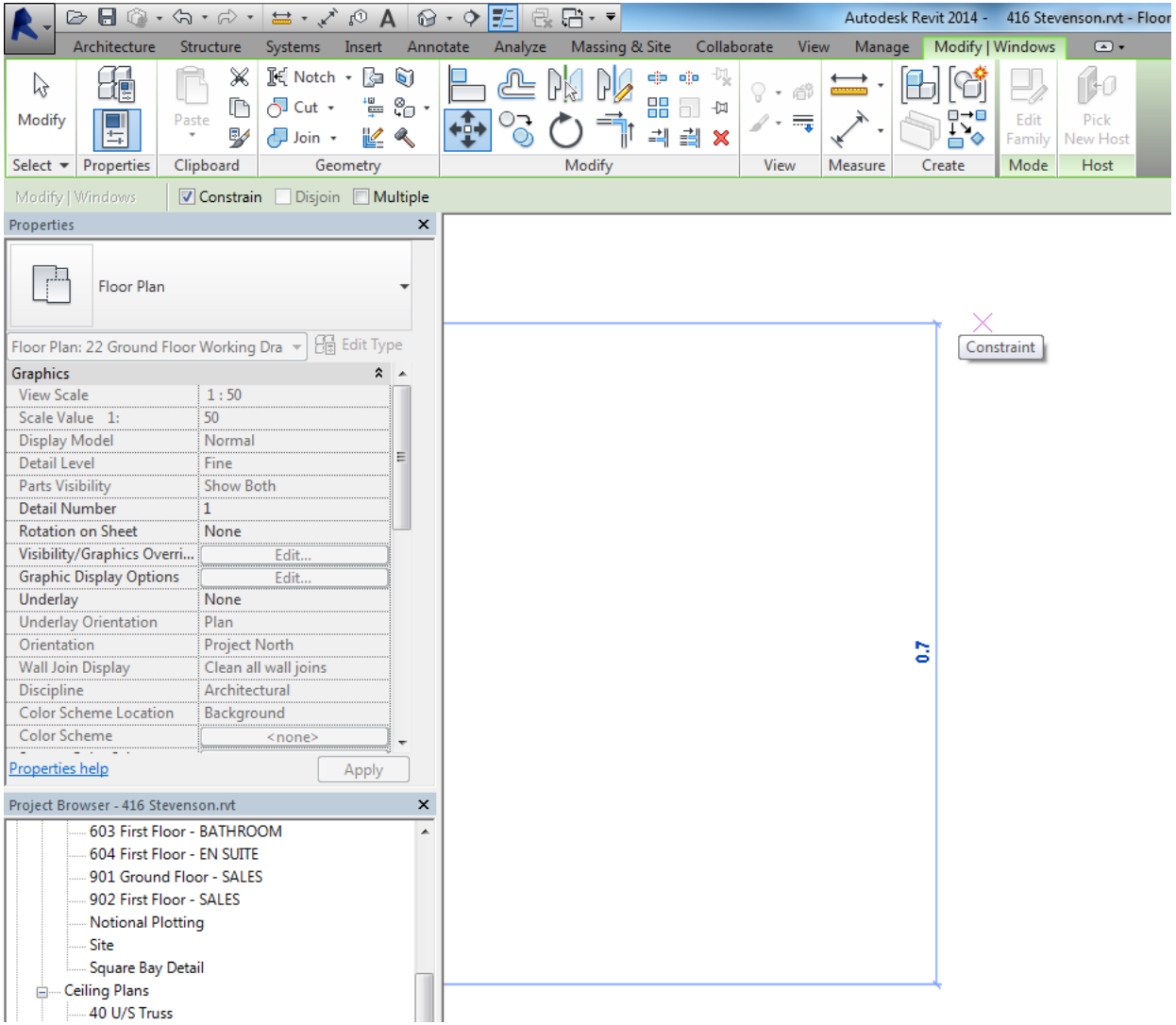


A	B	C
Mark	Width	Height
W1	1248	1350
W2	1248	1050
W3	460	1050
W4	1248	1200
W5	685	1050
W6	1248	1200
W7	1248	1200
W8	1248	1200
W9	685	1050

Conflicts

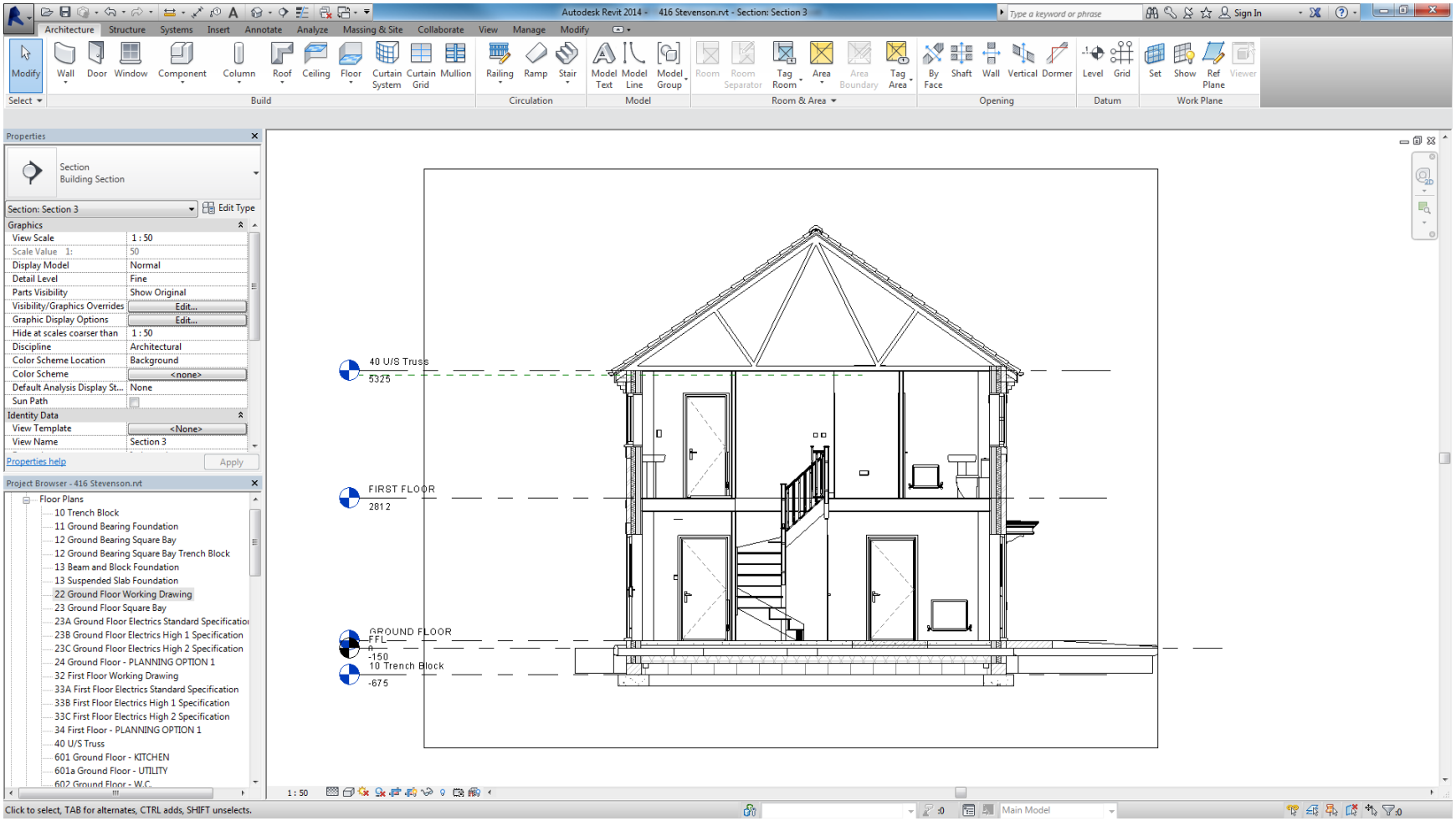

Autodesk Revit 2014 - 416 Stevenson.rvt
Modify | Windows
Properties
FMTWDS Single-Stone Cill
460mm x 1050mm
Windows (1)
Edit Type
Constraints
TILED CILL
OBSCURE GLASS
NOT TILED CILL
CLEAR GLASS
Level
GROUND FLOOR
Sill Height
1050.0
Text
EGRESS WINDOW
GLAZING PATTERN
ELEVATION.
Identity Data
Comments
Mark
W2
Phasing
Phase Created
New Construction
Phase Demolished
None
Properties help
Apply
Project Browser - 416 Stevenson.rvt
603 First Floor - BATHROOM
604 First Floor - EN SUITE
901 Ground Floor - SALES
902 First Floor - SALES
Notional Plotting
Site
Square Bay Detail
Ceiling Plans
40 U/S Truss
302 FLOOR JOIST LAYOUT
FIRST FLOOR
3D Views
3 d VIEW
3D View 1
Elevations (12mm Circle)
FRONT ELEVATION - PLANNING OPTION 1
FRONT ELEVATION - WD
L.H. SIDE ELEVATION - PLANNING OPTION 1
L.H. SIDE ELEVATION - WD
R.H. SIDE ELEVATION - PLANNING OPTION 1
R.H. SIDE ELEVATION - WD
Elevation: FRONT ELEVATION - WD - 416 Stevenson.rvt
EXE
W9
W8
W2
W3
D1
1 : 50
Floor Plan: 22 Ground Floor Working Drawing - 416 Stevenson.rvt
WC
D4
939
DOOR 838
390
441
W2
Warning
Insert conflicts with joined Wall.
1 : 50
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
Main Model

Constraints



Constraints

Sections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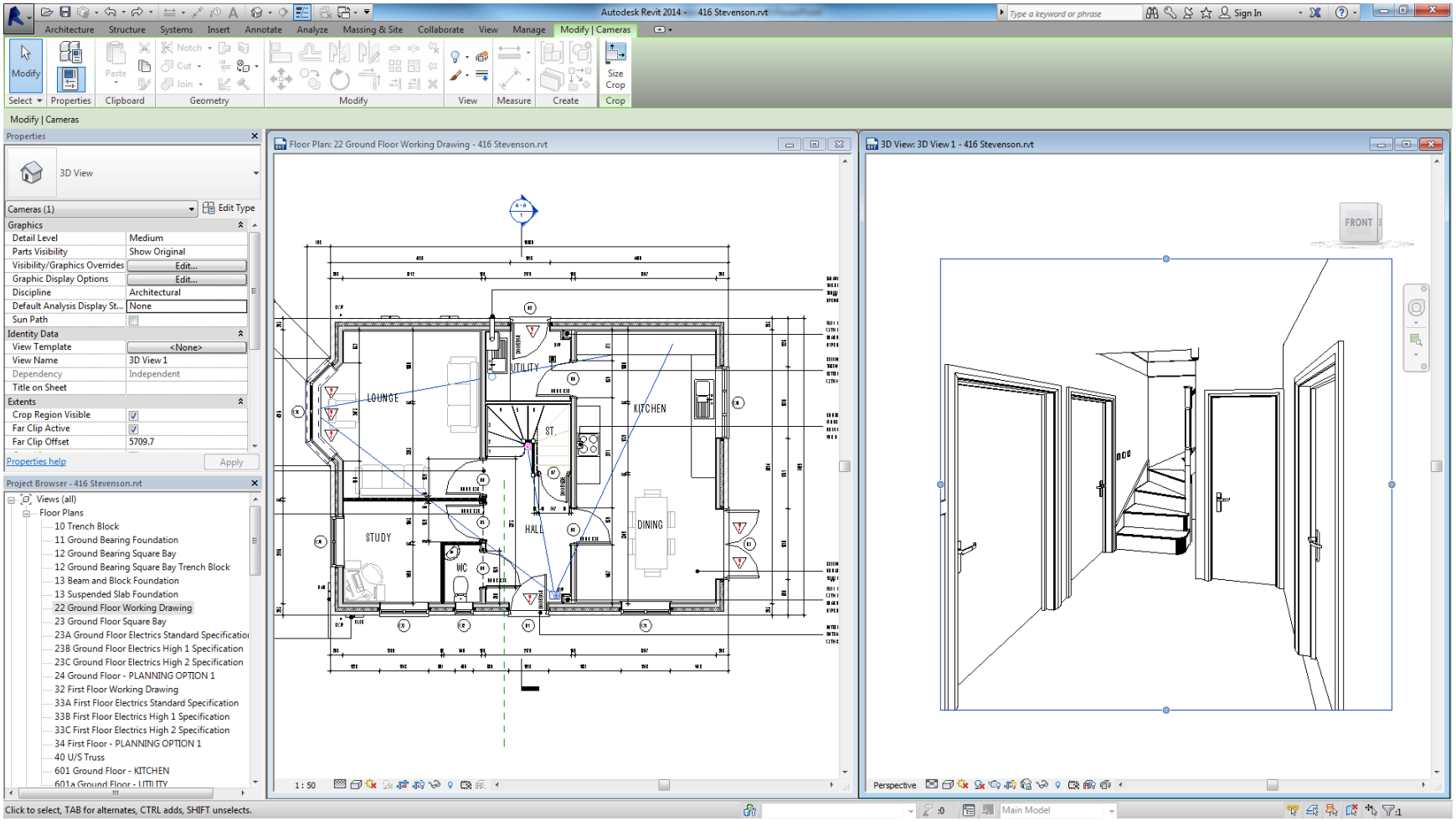
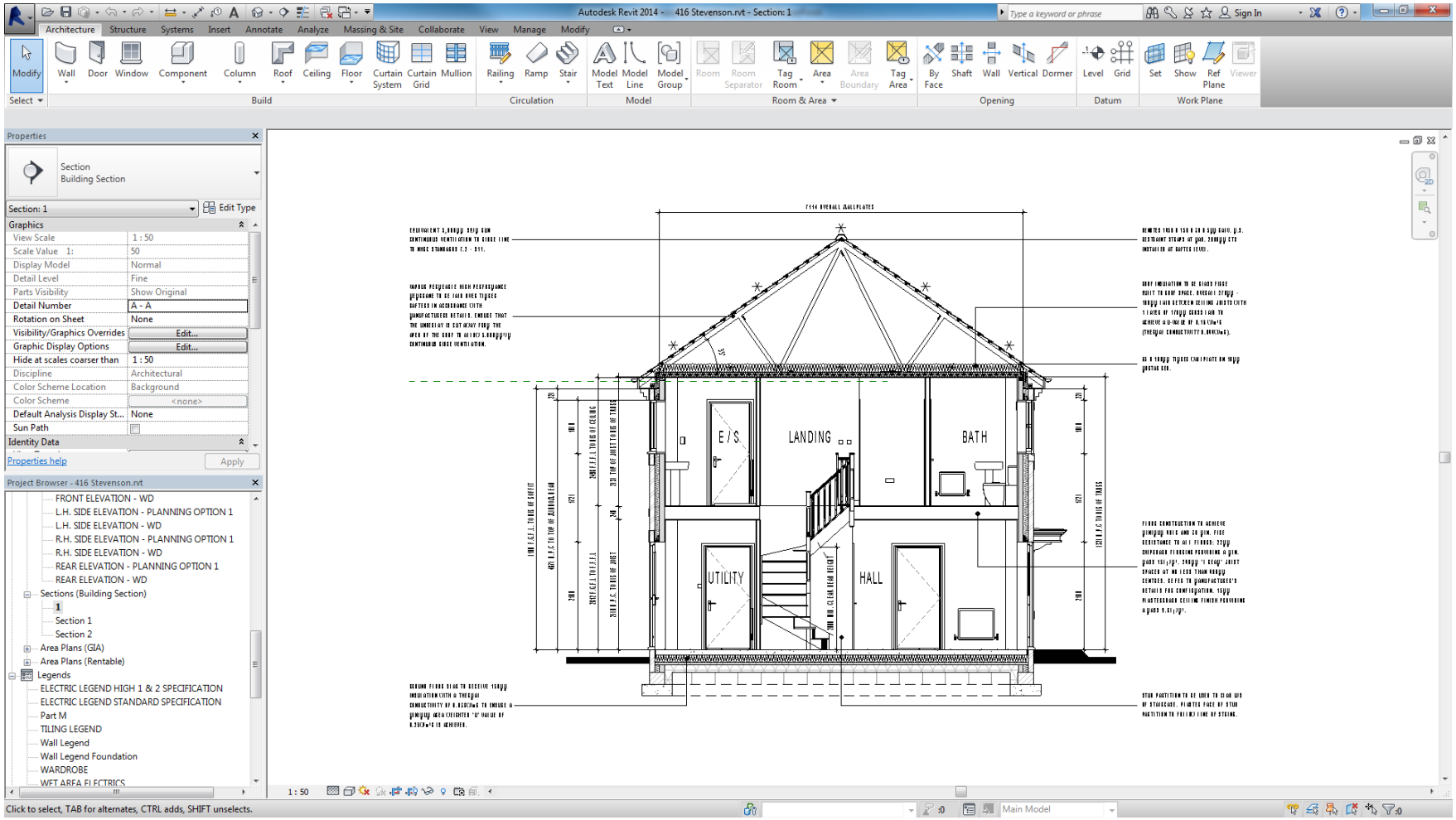
Architecture
Structure
Systems
Insert
Annotate
Analyze
Massing & Site
Collaborate
View
Manage
Modify
Properties
Section
Building Section
Section: Section 3
Edit Type
Graphics
View Scale 1 : 50
Scale Value 1: 50
Display Model Normal
Detail Level Fine
Parts Visibility Show Original
Visibility/Graphics Overrides Edit...
Graphic Display Options Edit...
Hide at scales coarser than 1 : 50
Discipline Architectural
Color Scheme Location Background
Color Scheme <none>
Default Analysis Display St... None
Sun Path
Identity Data
View Template <None>
View Name Section 3
Properties help
Apply
Project Browser - 416 Stevenson.rvt
Floor Plans
10 Trench Block
11 Ground Bearing Foundation
12 Ground Bearing Square Bay
12 Ground Bearing Square Bay Trench Block
13 Beam and Block Foundation
13 Suspended Slab Foundation
22 Ground Floor Working Drawing
23 Ground Floor Square Bay
23A Ground Floor Electrics Standard Specificatio
23B Ground Floor Electrics High 1 Specification
23C Ground Floor Electrics High 2 Specification
24 Ground Floor - PLANNING OPTION 1
32 First Floor Working Drawing
33A First Floor Electrics Standard Specification
33B First Floor Electrics High 1 Specification
33C First Floor Electrics High 2 Specification
34 First Floor - PLANNING OPTION 1
40 U/S Truss
601 Ground Floor - KITCHEN
601a Ground Floor - UTILITY
602 Ground Floor - W.C.
40 U/S Truss
5325
FIRST FLOOR
2812
GROUND FLOOR
FFL
0
-150
10 Trench Block
-675
1 : 50
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
Main Model

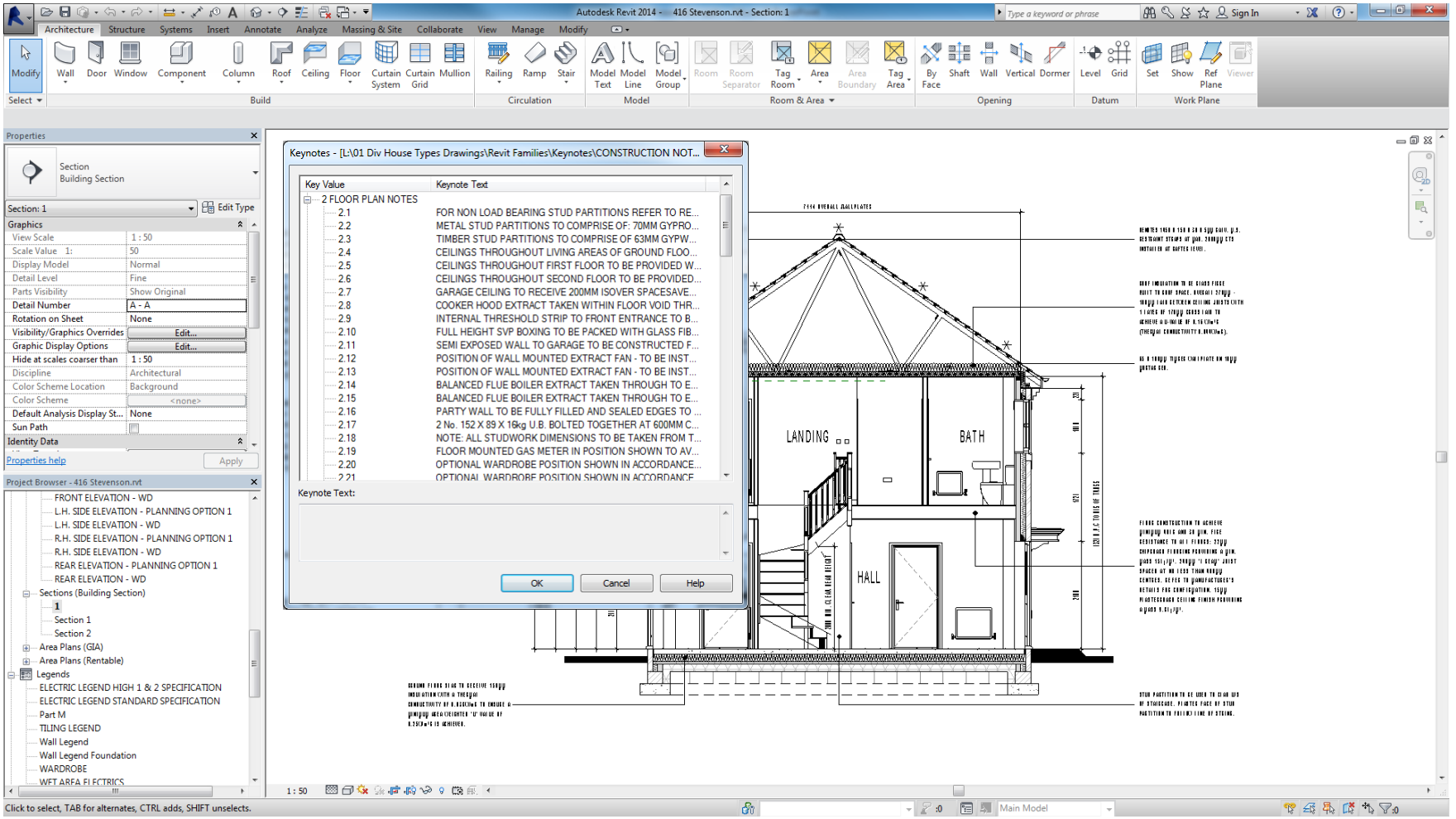
Camera Views



Annotation


Autodesk Revit 2014 - 416 Stevenson.rvt - Section: 1
Architecture
Structure
Systems
Insert
Annotate
Analyze
Massing & Site
Collaborate
View
Manage
Modify
Properties
Section
Building Section
Section: 1
Edit Type
Graphics
View Scale 1 : 50
Scale Value 1: 50
Display Model Normal
Detail Level Fine
Parts Visibility Show Original
Detail Number A - A
Rotation on Sheet None
Visibility/Graphics Overrides Edit...
Graphic Display Options Edit...
Hide at scales coarser than 1 : 50
Discipline Architectural
Color Scheme Location Background
Color Scheme <none>
Default Analysis Display St... None
Sun Path
Identity Data
Properties help
Apply
Project Browser - 416 Stevenson.rvt
FRONT ELEVATION - WD
L.H. SIDE ELEVATION - PLANNING OPTION 1
L.H. SIDE ELEVATION - WD
R.H. SIDE ELEVATION - PLANNING OPTION 1
R.H. SIDE ELEVATION - WD
REAR ELEVATION - PLANNING OPTION 1
REAR ELEVATION - WD
Sections (Building Section)
1
Section 1
Section 2
Area Plans (GIA)
Area Plans (Rentable)
Legends
ELECTRIC LEGEND HIGH 1 & 2 SPECIFICATION
ELECTRIC LEGEND STANDARD SPECIFICATION
Part M
TILING LEGEND
Wall Legend
Wall Legend Foundation
WARDROBE
WET AREA ELECTRICS
E/S
LANDING
BATH
UTILITY
HALL
1 : 50
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
Main Model

Annotation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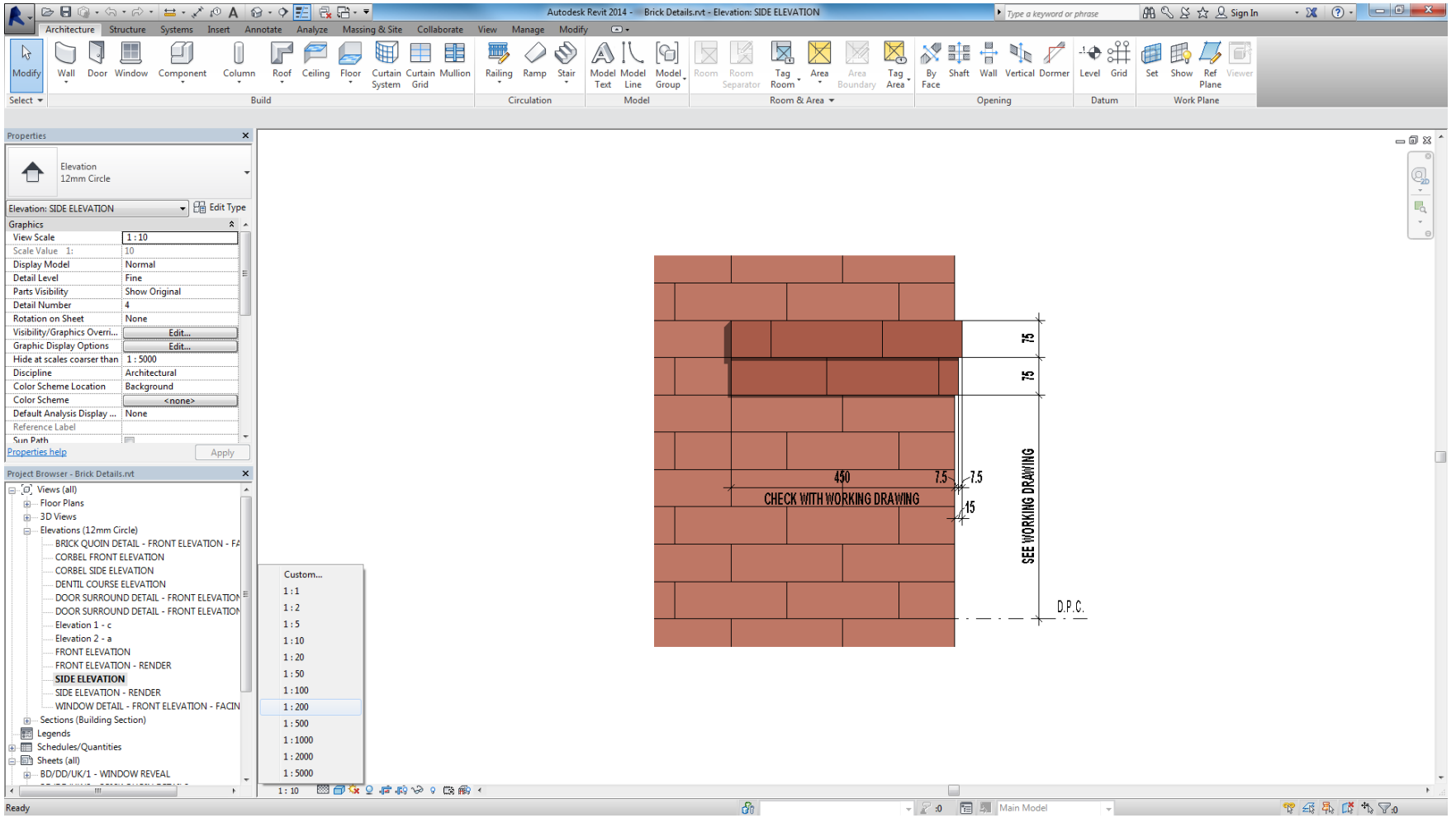
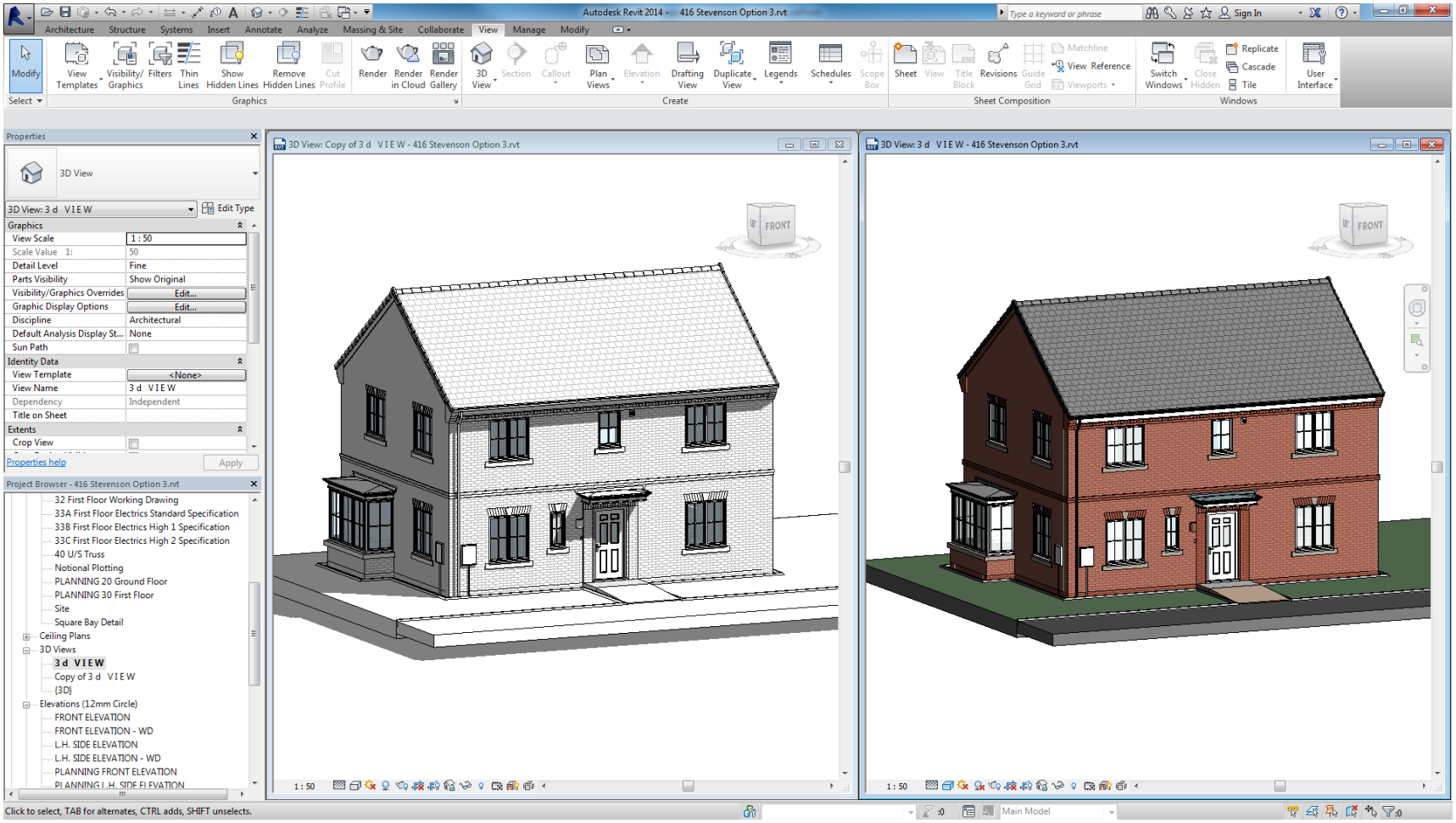
Keynotes - [L:\01 Div House Types Drawings\Revit Families\Keynotes\CONSTRUCTION NOT...
Key Value
Keynote Text
2 FLOOR PLAN NOTES
2.1 FOR NON LOAD BEARING STUD PARTITIONS REFER TO RE...
2.2 METAL STUD PARTITIONS TO COMPRISE OF: 70MM GYPRO...
2.3 TIMBER STUD PARTITIONS TO COMPRISE OF 63MM GYPW...
2.4 CEILINGS THROUGHOUT LIVING AREAS OF GROUND FLOO...
2.5 CEILINGS THROUGHOUT FIRST FLOOR TO BE PROVIDED W...
2.6 CEILINGS THROUGHOUT SECOND FLOOR TO BE PROVIDED...
2.7 GARAGE CEILING TO RECEIVE 200MM ISOVER SPACESAVE...
2.8 COOKER HOOD EXTRACT TAKEN WITHIN FLOOR VOID THR...
2.9 INTERNAL THRESHOLD STRIP TO FRONT ENTRANCE TO B...
2.10 FULL HEIGHT SVP BOXING TO BE PACKED WITH GLASS FIB...
2.11 SEMI EXPOSED WALL TO GARAGE TO BE CONSTRUCTED F...
2.12 POSITION OF WALL MOUNTED EXTRACT FAN - TO BE INST...
2.13 POSITION OF WALL MOUNTED EXTRACT FAN - TO BE INST...
2.14 BALANCED FLUE BOILER EXTRACT TAKEN THROUGH TO E...
2.15 BALANCED FLUE BOILER EXTRACT TAKEN THROUGH TO E...
2.16 PARTY WALL TO BE FULLY FILLED AND SEALED EDGES TO ...
2.17 2 No. 152 X 89 X 16kg U.B. BOLTED TOGETHER AT 600MM C...
2.18 NOTE: ALL STUDWORK DIMENSIONS TO BE TAKEN FROM T...
2.19 FLOOR MOUNTED GAS METER IN POSITION SHOWN TO AV...
2.20 OPTIONAL WARDROBE POSITION SHOWN IN ACCORDANCE...
2.21 OPTIONAL WARDROBE POSITION SHOWN IN ACCORDANCE
Keynote Text:
OK
Cancel
Help
LANDING
BATH
HALL
Properties
Section
Building Section
Section: 1
Edit Type
Graphics
View Scale 1 : 50
Scale Value 1: 50
Display Model Normal
Detail Level Fine
Parts Visibility Show Original
Detail Number A - A
Rotation on Sheet None
Visibility/Graphics Overrides Edit...
Graphic Display Options Edit...
Hide at scales coarser than 1 : 50
Discipline Architectural
Color Scheme Location Background
Color Scheme <none>
Default Analysis Display St... None
Sun Path
Identity Data
Properties help
Apply
Project Browser - 416 Stevenson.rvt
FRONT ELEVATION - WD
L.H. SIDE ELEVATION - PLANNING OPTION 1
L.H. SIDE ELEVATION - WD
R.H. SIDE ELEVATION - PLANNING OPTION 1
R.H. SIDE ELEVATION - WD
REAR ELEVATION - PLANNING OPTION 1
REAR ELEVATION - WD
Sections (Building Section)
1
Section 1
Section 2
Area Plans (GIA)
Area Plans (Rentable)
Legends
ELECTRIC LEGEND HIGH 1 & 2 SPECIFICATION
ELECTRIC LEGEND STANDARD SPECIFICATION
Part M
TILING LEGEND
Wall Legend
Wall Legend Foundation
WARDROBE
WET AREA ELECTRICS
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
Main Model

Scaling

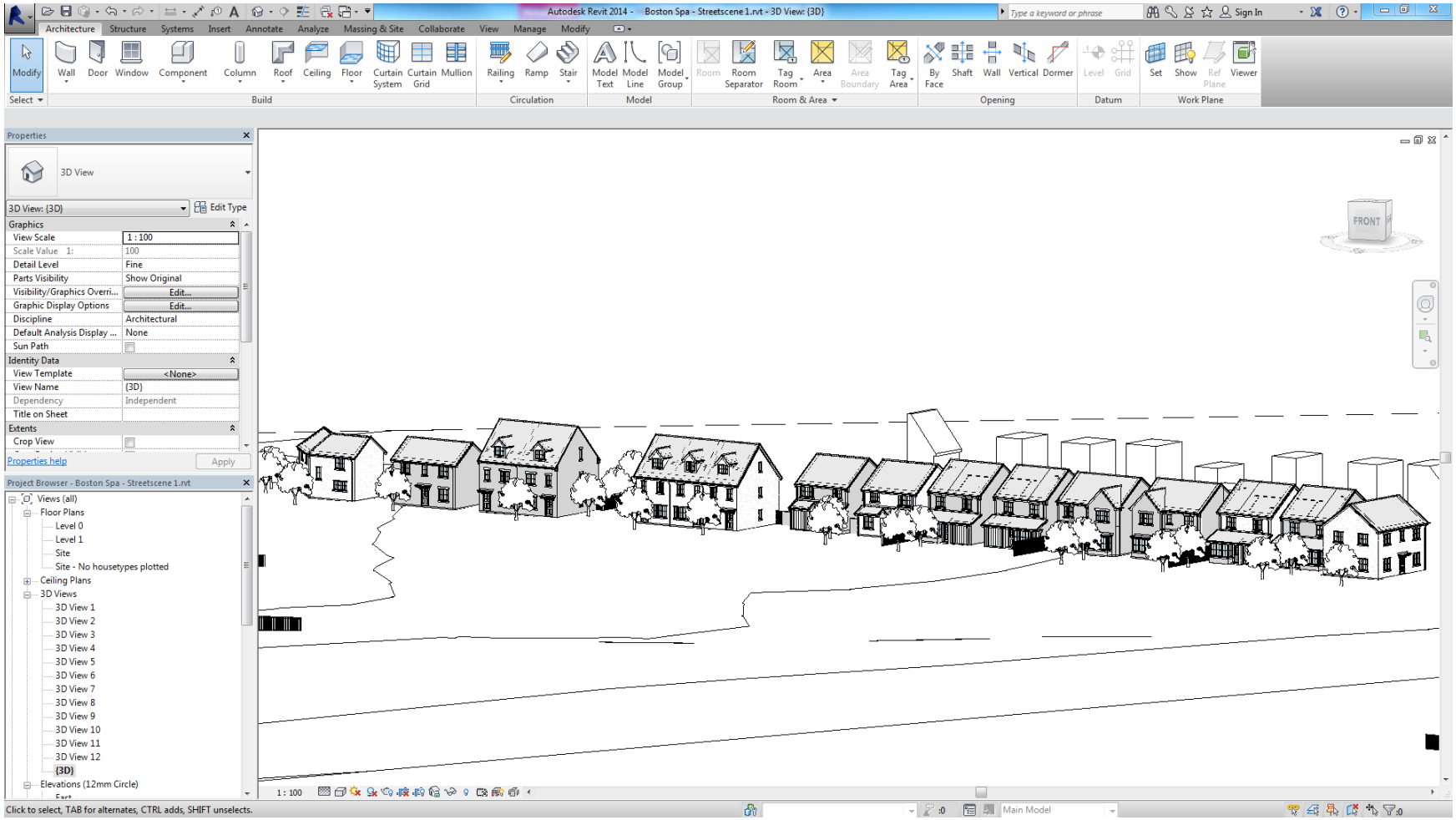

Autodesk Revit 2014 - Brick Details.rvt - Elevation: SIDE ELEVATION
Properties
Elevation
12mm Circle
Elevation: SIDE ELEVATION
Edit Type
Graphics
View Scale 1 : 10
Scale Value 1: 10
Display Model Normal
Detail Level Fine
Parts Visibility Show Original
Detail Number 4
Rotation on Sheet None
Visibility/Graphics Overri... Edit...
Graphic Display Options Edit...
Hide at scales coarser than 1 : 5000
Discipline Architectural
Color Scheme Location Background
Color Scheme <none>
Default Analysis Display ... None
Reference Label
Sun Path
Properties help
Apply
Project Browser - Brick Details.rvt
Views (all)
Floor Plans
3D Views
Elevations (12mm Circle)
BRICK QUOIN DETAIL - FRONT ELEVATION - FA
CORBEL FRONT ELEVATION
CORBEL SIDE ELEVATION
DENTIL COURSE ELEVATION
DOOR SURROUND DETAIL - FRONT ELEVATION
DOOR SURROUND DETAIL - FRONT ELEVATION
Elevation 1 - c
Elevation 2 - a
FRONT ELEVATION
FRONT ELEVATION - RENDER
SIDE ELEVATION
SIDE ELEVATION - RENDER
WINDOW DETAIL - FRONT ELEVATION - FACIN
Sections (Building Section)
Legends
Schedules/Quantities
Sheets (all)
BD/DD/UK/1 - WINDOW REVEAL
Custom...
1 : 1
1 : 2
1 : 5
1 : 10
1 : 20
1 : 50
1 : 100
1 : 200
1 : 500
1 : 1000
1 : 2000
1 : 5000
75
75
450
7.5
7.5
15
CHECK WITH WORKING DRAWING
SEE WORKING DRAWING
D.P.C.
Ready
Main Model

CGI's


Autodesk Revit 2014 - 416 Stevenson Option 3.rvt
Architecture
Structure
Systems
Insert
Annotate
Analyze
Massing & Site
Collaborate
View
Manage
Modify
Properties
3D View
3D View: 3 d VIEW
Graphics
View Scale 1 : 50
Detail Level Fine
Parts Visibility Show Original
Discipline Architectural
Identity Data
View Name 3 d VIEW
Extents
Project Browser - 416 Stevenson Option 3.rvt
3D View: Copy of 3 d VIEW - 416 Stevenson Option 3.rvt
3D View: 3 d VIEW - 416 Stevenson Option 3.rvt
FRONT
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.

CGI's

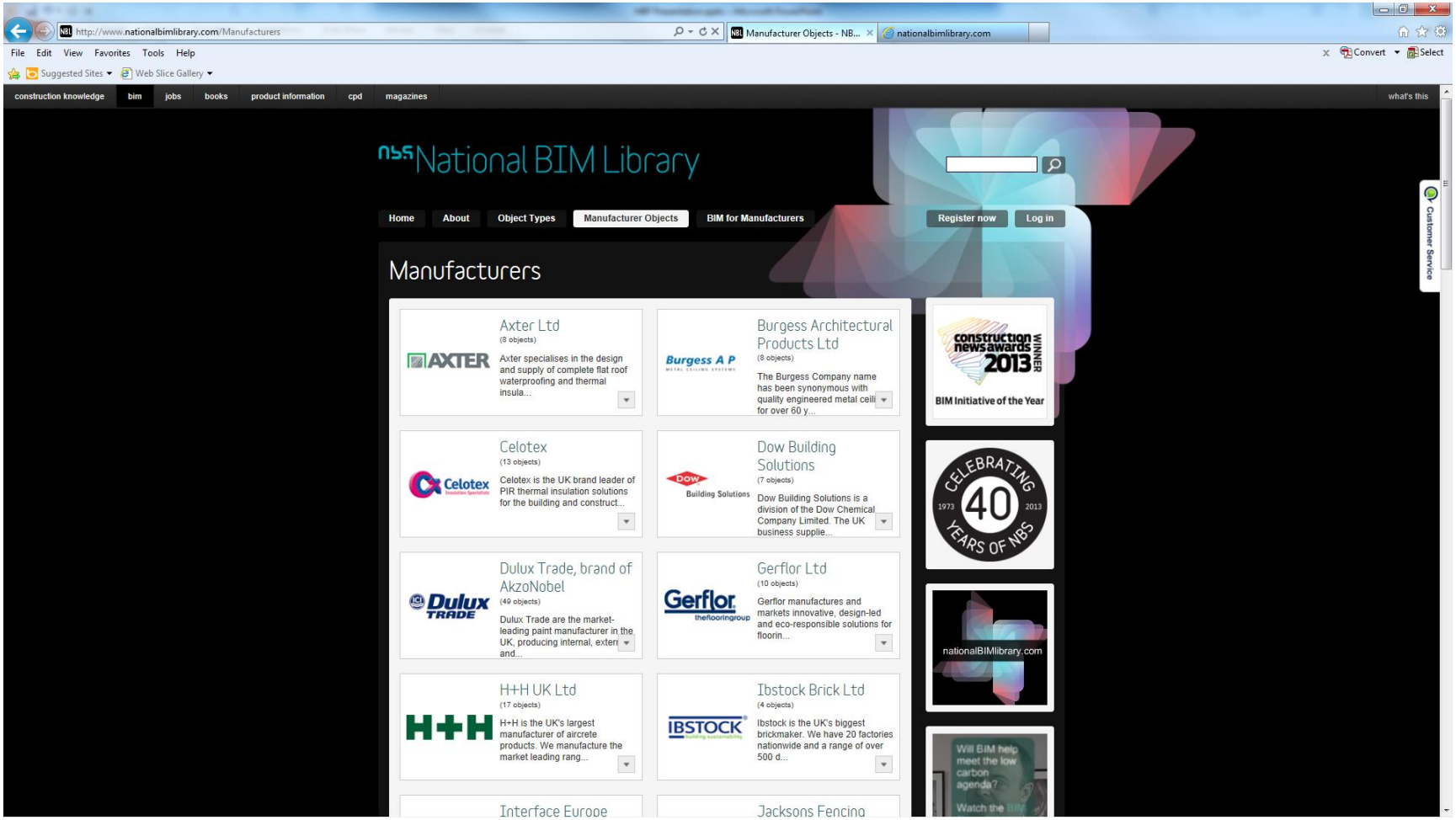
Site Layouts



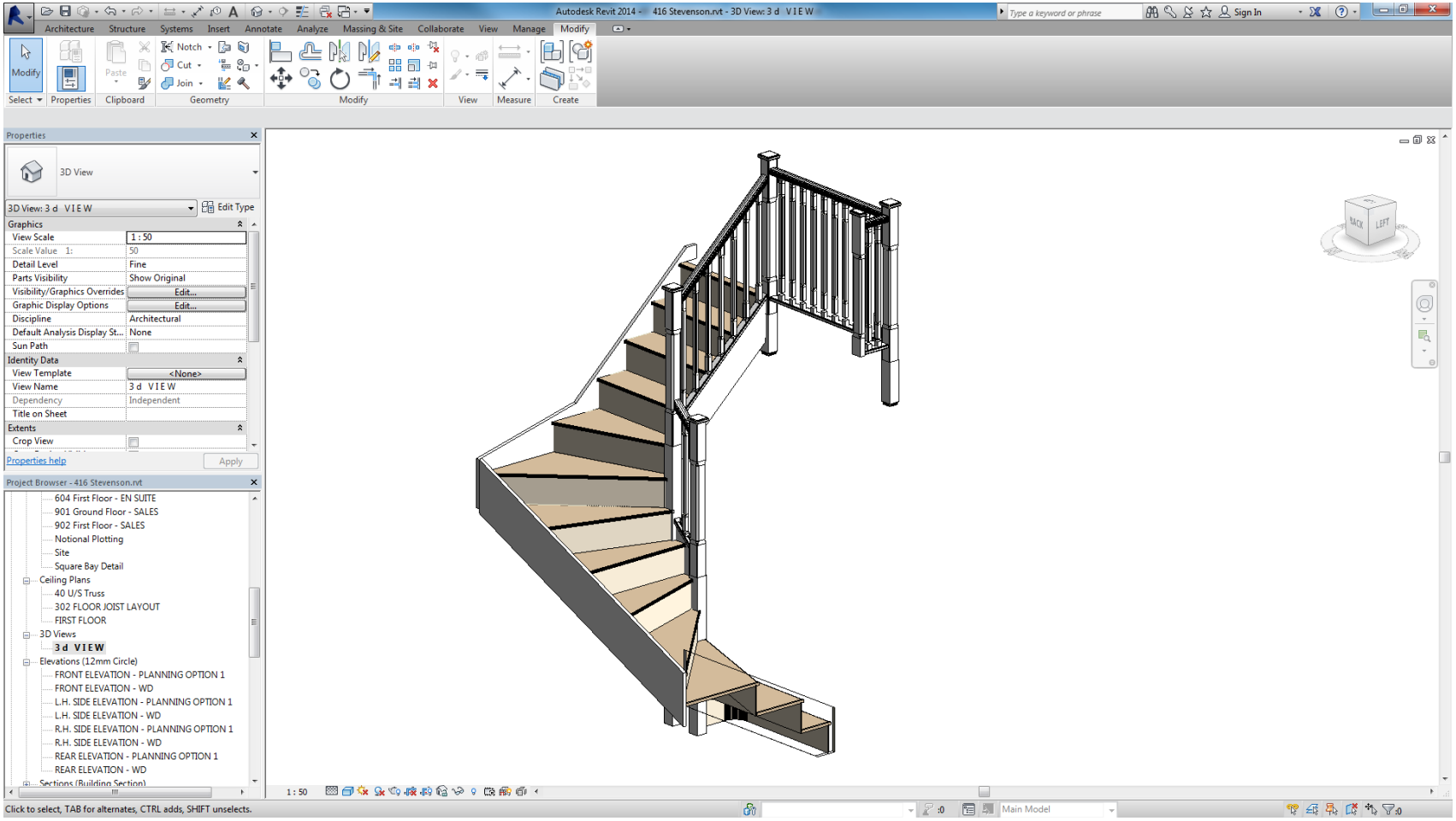
Street Scenes

Supply Chain Involvement

nbs National BIM Library



Stair Design



Wider Debate

- Initial set up cost
- Reducing error
- Supply chain ready?
- Drawing time reduced
- Training process
- Excellent design tool
- Recruiting Staff
- Consistency
- Collaboration
- Not a one stop shop
- Return to Sender?

Helping Charity

Perseverance

Questions