

Basic

None P1... Scr... To... 0.00° 2D...

Selection Tool: Rectangular Marquee Mode

730 740 750 760 770 780 790 800 810 820

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker



Object Info - Shape

Shape Data Render

No Selection

IFC...  
Name:

Navigation - Saved Views

- Saved View
- 001000 Introduction
  - 001002 Windsor fire station
  - 001005 learning objective
  - 001010 Phase 1
  - 001015 Phase 2
  - 001017 Phase 3
  - 001020 phase1 surveying
  - 001023 phase1
  - 001025 srveying
  - 001030 create 2d plan
  - 001032 paint bucket to fill
  - 001035 final 2d plan
  - 001040 2d to 3d massing model
  - 001045 objects from shapes - massing
  - 001047 change massing
  - 001050 top Plan all mass
  - 001051 top plan perspective

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
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- Section-Elevation Marker
- Interior-Elevation Marker

None P1... Scr... To... 0.00° 2D...

Selection Tool: Rectangular Marquee Mode

830 840 850 860 870 880 890 900 910 920 930

410 400 390 380 370 360 350

# BIM in Practice

## Exemplar Project

# Windsor Fire Station

**Object Info - Shape**

Shape Data Render

**No Selection**

IFC... Name:

**Navigation - Saved Views**

Saved View Vie ^

- 001000 Introduction
- 001002 Windsor fire station**
- 001005 learning objective
- 001010 Phase 1
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**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
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- Section-Elevation Marker
- Interior-Elevation Marker

None P1... Scr... To... 0.00° 2D...

Selection Tool: Rectangular Marquee Mode

940 950 960 970 980 990 1000 1010 1020 1030

410 400 390 380 370 360 350

# BIM in Practice

## Exemplar Project

# Objective

- 1) Model the Existing
- 2) Construction Phasing
- 3) New Build

**Object Info - Shape**

Shape Data Render

No Selection

IFC...

Name:

**Navigation - Saved Views**

Saved View Vie ^

- 001000 Introduction
- 001002 Windsor fire station
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- 001010 Phase 1
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- 001040 2d to 3d massing model
- 001045 objects from shapes - massing
- 001047 change massing
- 001050 top Plan all mass
- 001051 top plan perspective

X: 962 Y: 346 L: 1022 A: 19.79° CAP NUM SCRL

Basic

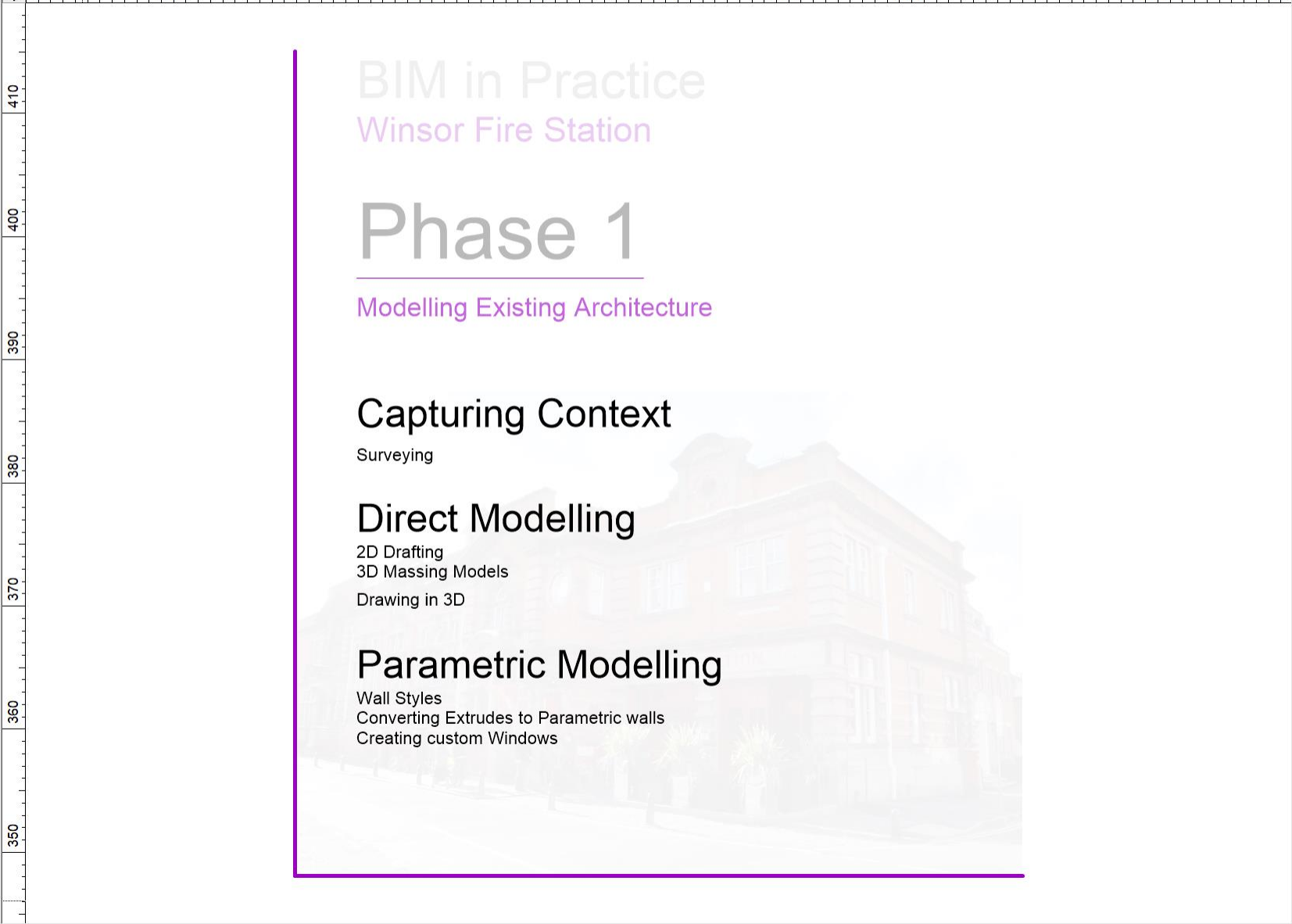
None P1... Scr... To... 0.00° 2D...

Selection Tool: Rectangular Marquee Mode

1040 1050 1060 1070 1080 1090 1100 1110 1120 1130 1140

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
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- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker



Object Info - Shape

Shape Data Render

No Selection

IFC... Name:

Navigation - Saved Views

Saved View

- 001000 Introduction
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- 001017 Phase 3
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- 001051 top plan perspective

Basic

None P1... Scr... To... 0.00° 2D...

Selection Tool: Rectangular Marquee Mode

1150 1160 1170 1180 1190 1200 1210 1220 1230 1240

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

BIM in Practice  
Windsor Fire Station

# Phase 2

Construction Phasing & Documentation

## File Setup

Design Layers & Classes  
Storey Structure

## Create Record:

Existing  
Demolition  
New Build

## Data Visualisation

Object Info - Shape

Shape Data Render

No Selection

IFC... Name:

Navigation - Saved Views

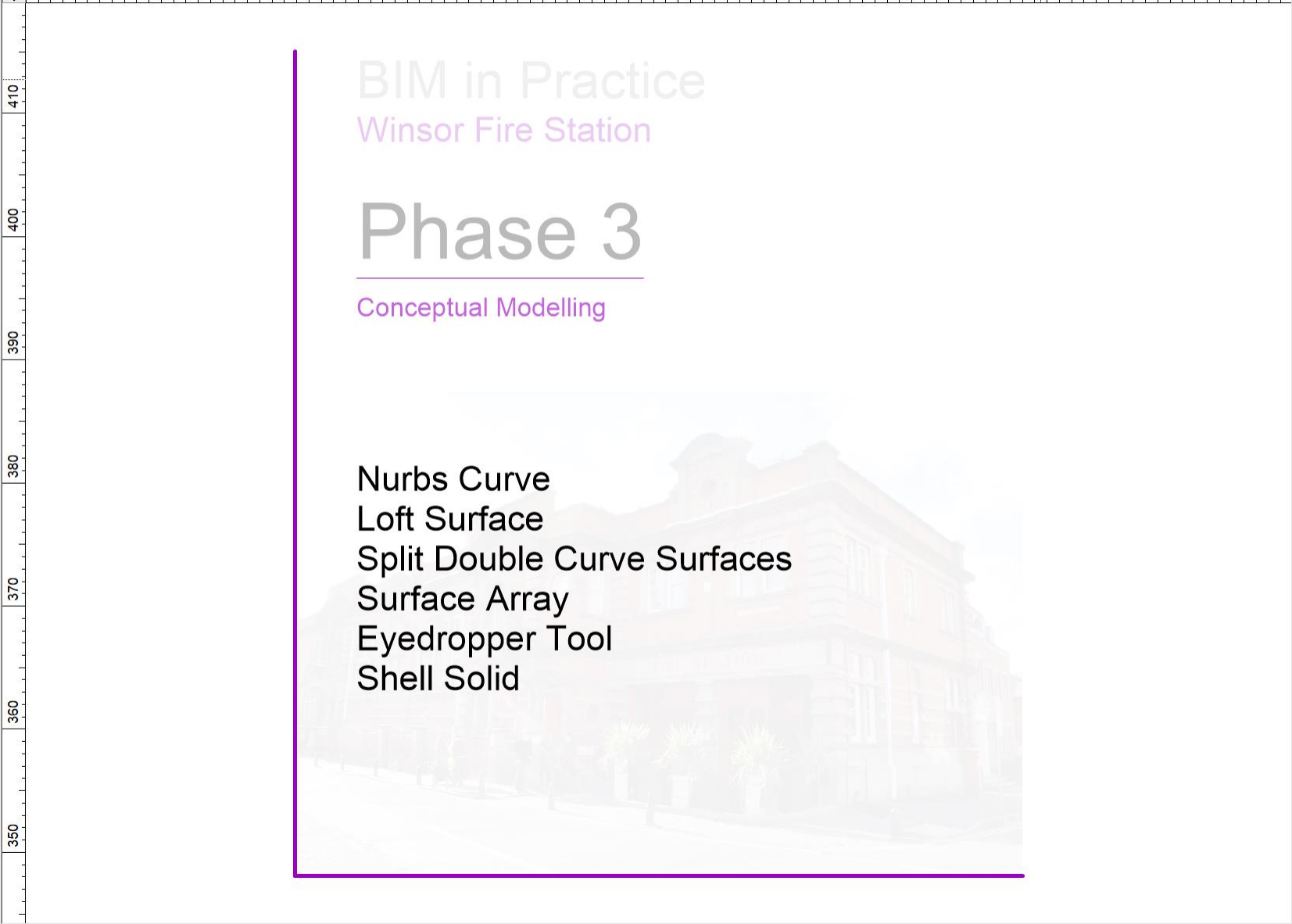
Saved View

- 001000 Introduction
- 001002 Windsor fire station
- 001005 learning objective
- 001010 Phase 1
- 001015 Phase 2**
- 001017 Phase 3
- 001020 phase1 surveying
- 001023 phase1
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Basic

None P1... Scr... To... 0.00° 2D...

Selection Tool: Rectangular Marquee Mode



Tool Sets

- Tape Measure
- Protractor
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- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Object Info - Shape

Shape Data Render

No Selection

IFC... Name:

Navigation - Saved Views

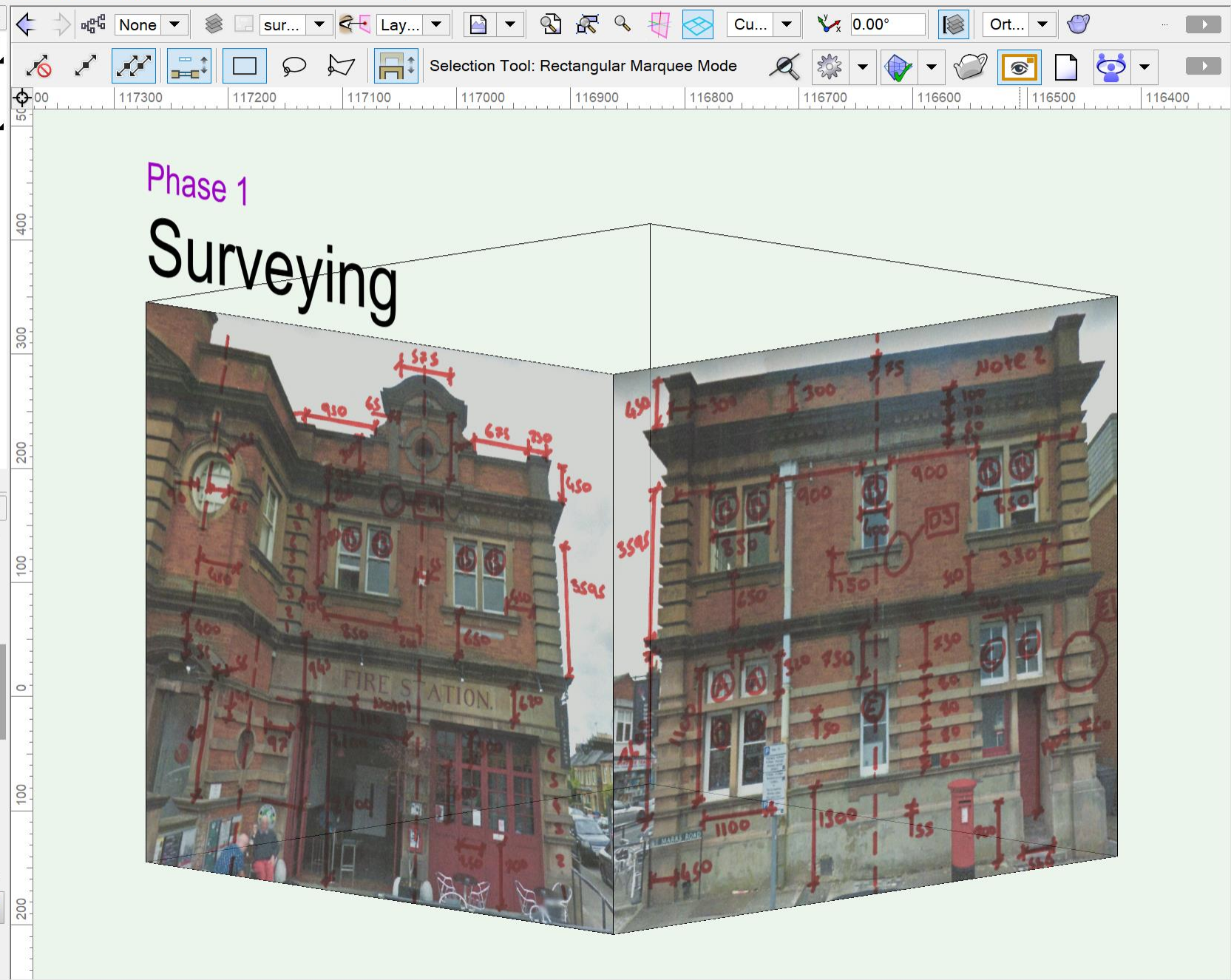
Saved View

- 001000 Introduction
- 001002 Windsor fire station
- 001005 learning objective
- 001010 Phase 1
- 001015 Phase 2
- 001017 Phase 3**
- 001020 phase1 surveying
- 001023 phase1
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**Basic**

**Tool Sets**

- Tape Measure
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- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker



Shape | Data | Render

**No Selection**

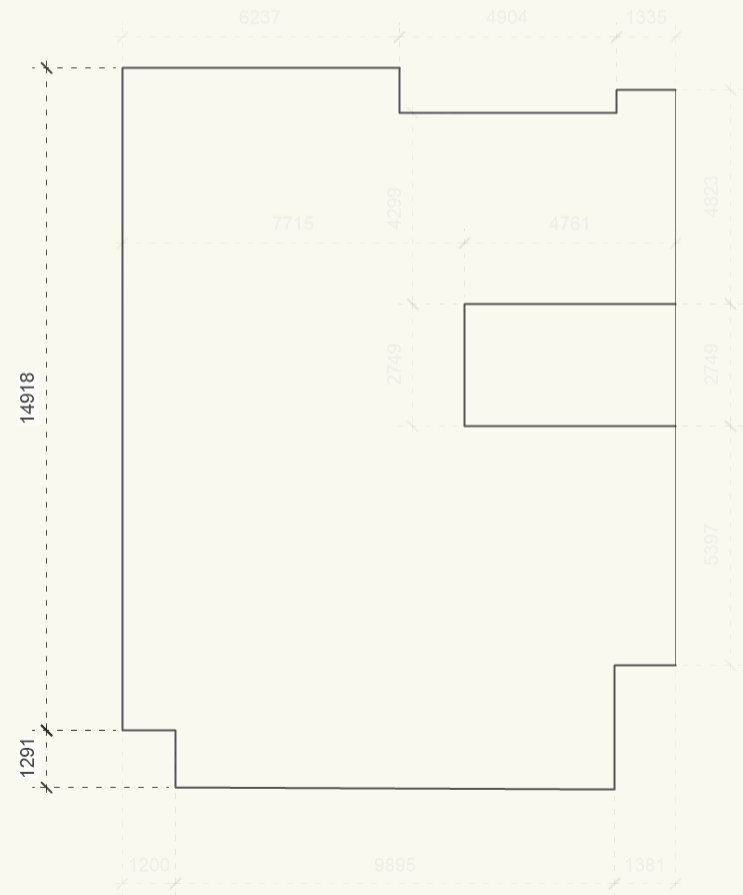
- Saved View
- 001000 Introduction
  - 001002 Windsor fire station
  - 001005 learning objective
  - 001010 Phase 1
  - 001015 Phase 2
  - 001017 Phase 3
  - 001020 phase1 surveying
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Basic

None | cre... | Lay... | To... | 0.00° | 2D... | Selection Tool: Rectangular Marquee Mode

325000 | 320000 | 315000 | 310000 | 305000 | 300000 | 295000

# Creating a Floor Plan 2D Drafting



Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

## Object Info - Shape

Shape | Data | Render

### Polygon

Class: None  
Layer: creating 2d plan  
Plane: Layer

±X:	12476
±Y:	16239
X:	-203506
Y:	65857

Move: Entire Object  
Vertex: [Left] [Center] [Right]

X: -191030  
Y: 65366

Add Vertex

## Navigation - Saved Views

- Saved View
- 001000 Introduction
  - 001002 Windsor fire station
  - 001005 learning objective
  - 001010 Phase 1
  - 001015 Phase 2
  - 001017 Phase 3
  - 001020 phase1 surveying
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  - 001047 change massing
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  - 001051 top plan perspective



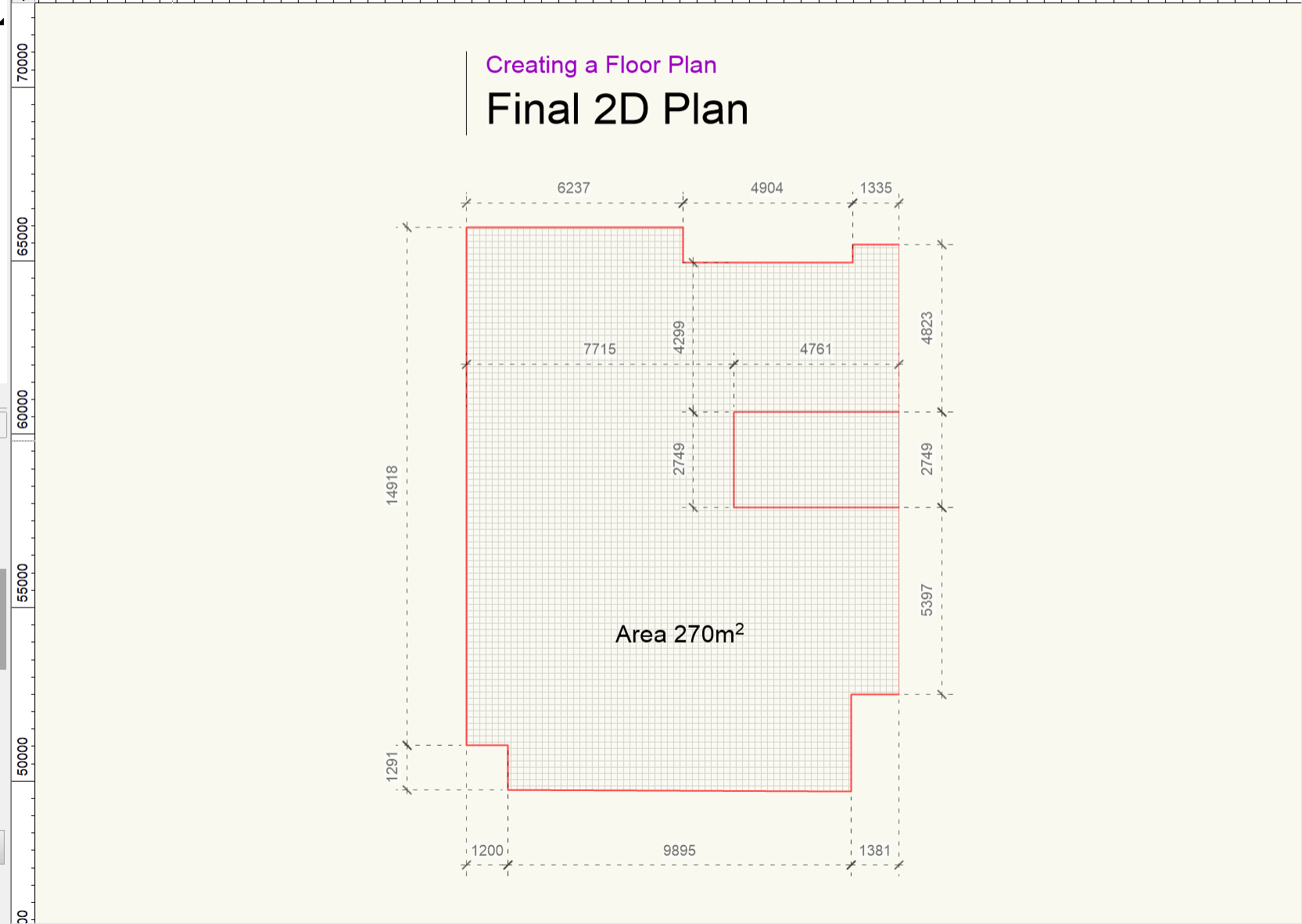
Basic

None | cre... | Lay... | To... | 0.00° | 2D... | Selection Tool: Rectangular Marquee Mode

70000 | 65000 | 60000 | 55000 | 50000 | 260000 | 255000 | 250000 | 245000 | 240000 | 235000 | 230000

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker



Object Info - Shape

Shape | Data | Render

No Selection

IFC...  
Name:

Navigation - Saved Views

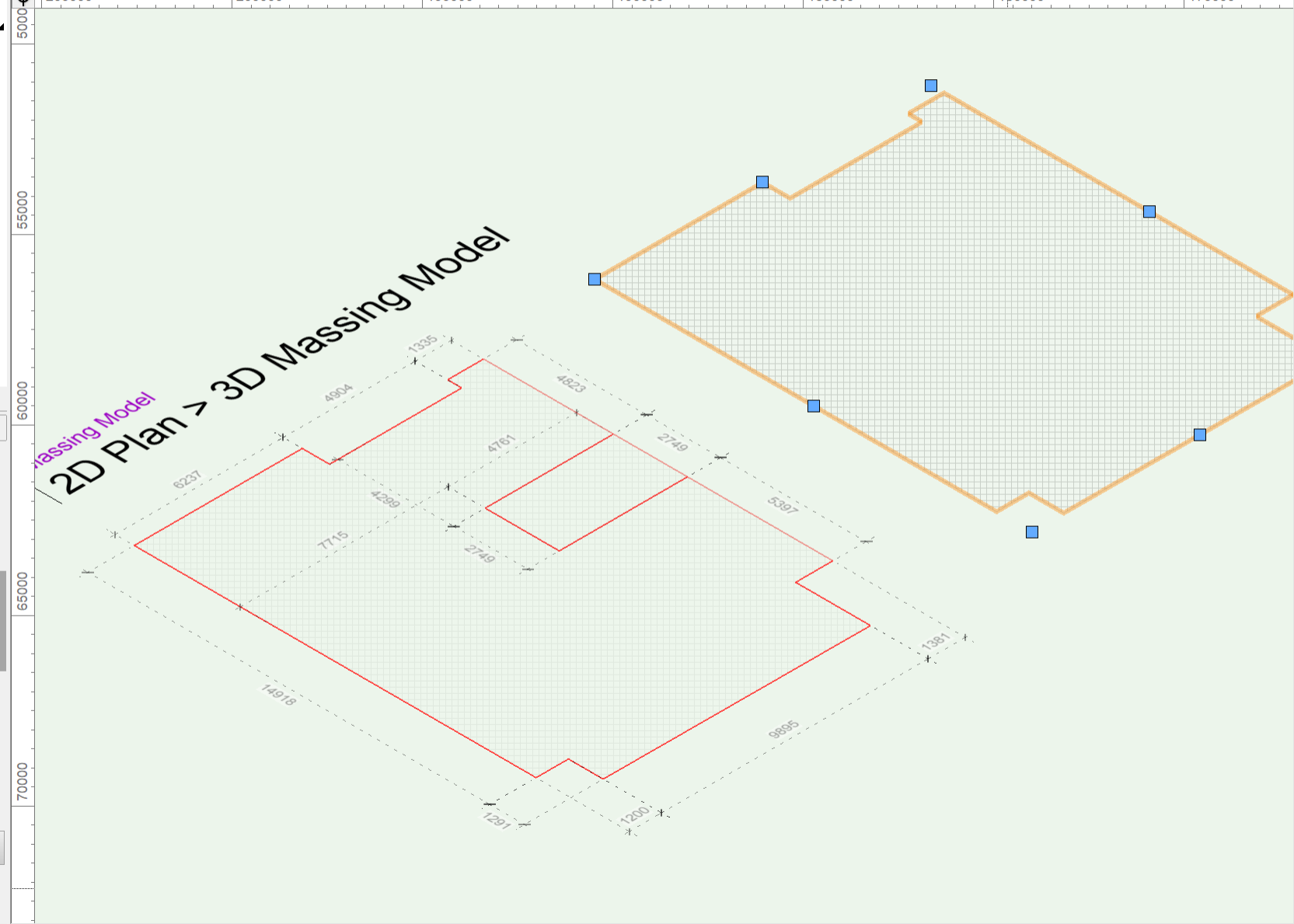
- Saved View
- 001000 Introduction
  - 001002 Windsor fire station
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  - 001010 Phase 1
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  - 001017 Phase 3
  - 001020 phase1 surveying
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  - 001045 objects from shapes - massing
  - 001047 change massing
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Basic

None | cre... | Lay... | Lef... | 0.00° | Ort...

Selection Tool: Rectangular Marquee Mode

205000 | 200000 | 195000 | 190000 | 185000 | 180000 | 175000



Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Object Info - Shape

Shape | Data | Render

Polygon

Class: None

Layer: creating 2d plan

Plane: Layer

±X: 12476

±Y: 16239

X: -203506

Y: 65857

Move: Entire Object

Vertex: ◀ ● ▶

X: -191030

Y: 65366

Add Vertex

IFC...

Name:

Navigation - Saved Views

- Saved View
- 001000 Introduction
  - 001002 Windsor fire station
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  - 001015 Phase 2
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Basic

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Selection Tool: Rectangular Marquee Mode

205000 200000 195000 190000 185000 180000 175000

50000 55000 60000 65000 70000

Massing Model

2D Plan > 3D Massing

Create Objects from Shapes

Object Type: Massing Model

Offset: Right

Custom Offset: 0

Show Properties Dialog

Delete Source Shapes

Preserve Records

Continuous Spacing

OK Cancel

Object Info - Shape

Shape Data Render

Polygon

Class: None

Layer: creating 2d plan

Plane: Layer

±X: 12476

±Y: 16239

X: -203506

Y: 65857

Move: Entire Object

Vertex: ◀ ● ▶

X: -191030

Y: 65366

Add Vertex

IFC...

Name:

Navigation - Saved Views

Saved View

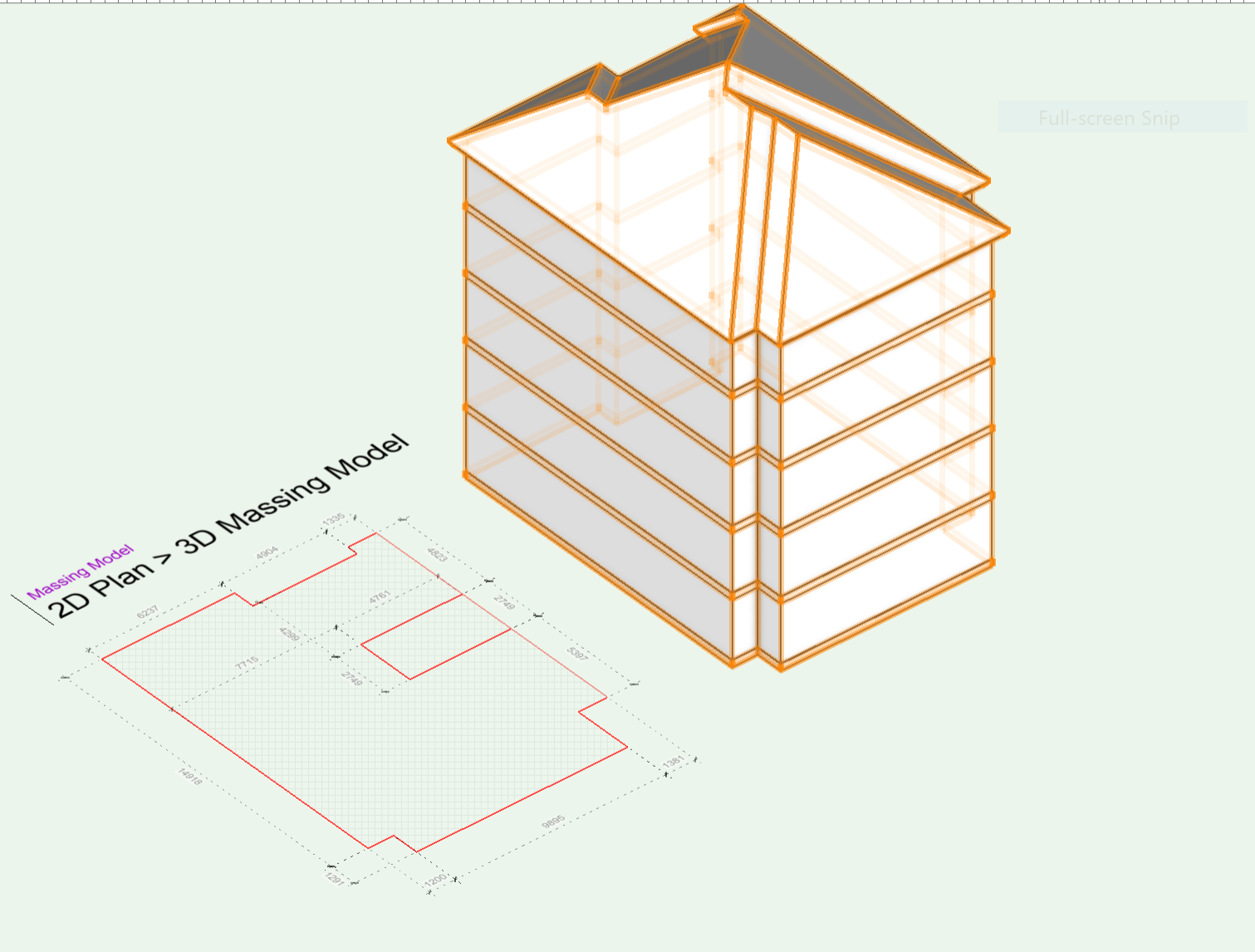
- 001000 Introduction
- 001002 Windsor fire station
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Basic

Pan Tool

205000 200000 195000 190000 185000 180000 175000 170000 165000

40000 45000 50000 55000 60000 65000 70000



Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Object Info - Shape

Shape | Data | Render

**Massing Model**

Rotation: 0.00°

Name: [ ]

Show in Plan: Roof

Label: No Label

Height: 15000

Floor Count: 5

Floor Usage Data...

Wall Class: <Massing Model Class>

Use Custom Roof from Profile

Roof Overhang: 305

Roof Thickness: 305

Roof Class: <Massing Model Class>

Pitched Roof

Eave Style: Square

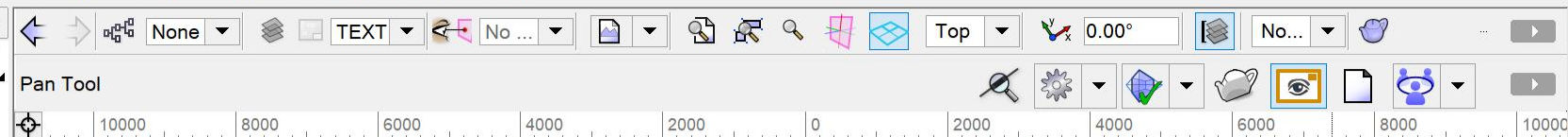
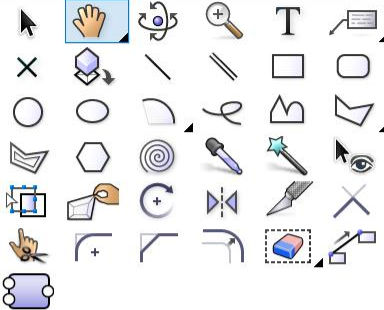
IFC... <Default IfcBuilding>

Name: [ ]

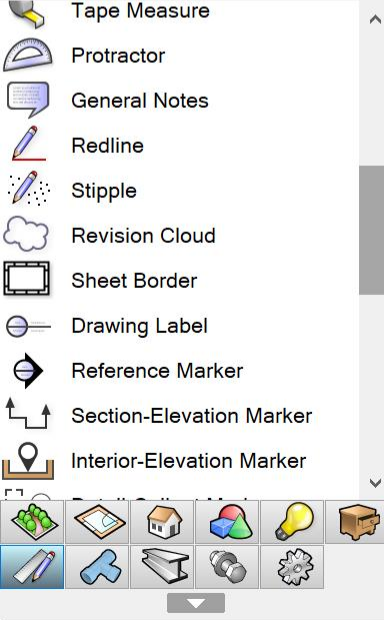
Navigation - Saved Views

Saved View

- 001000 Introduction
- 001002 Windsor fire station
- 001005 learning objective
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- 001015 Phase 2
- 001017 Phase 3
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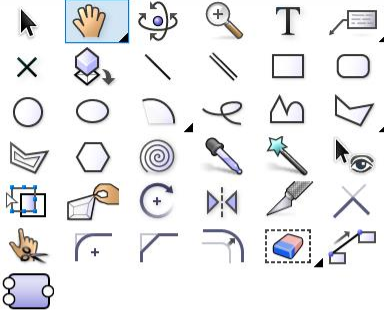


Phase 1  
Massing Models

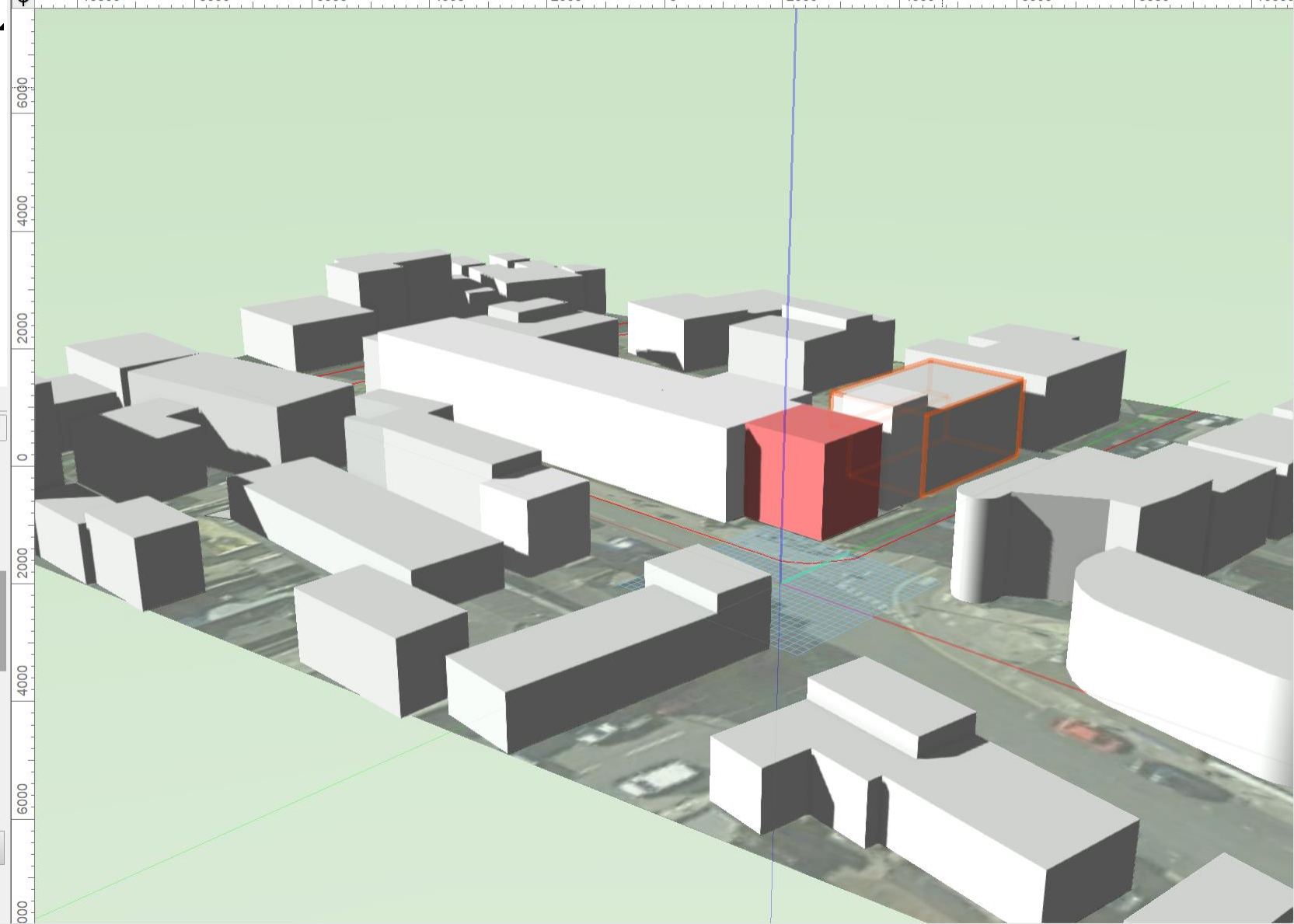


- Saved View
- 001015 Phase 2
- 001017 Phase 3
- 001020 phase1 surveying
- 001023 phase1
- 001025 srueying
- 001030 create 2d plan
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- 001035 final 2d plan
- 001040 2d to 3d massing model
- 001045 objects from shapes - massing
- 001047 change massing
- 001050 top Plan all mass
- 001051 top plan perspective**
- 001052 perspective Massing
- 001053 front. cnstrctin lines1
- 001056 front. cnstrctin lines2
- 001058 front. cnstrctin lines3

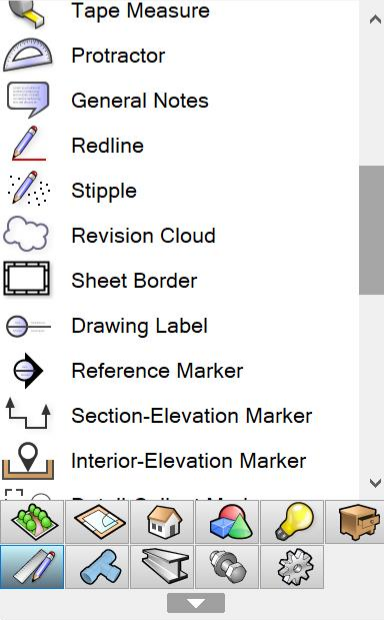
Basic



Pan Tool  
None ma... No... Cu... 0.00° No...



Tool Sets



Object Info - Shape

Shape Data Render

Generic Solid

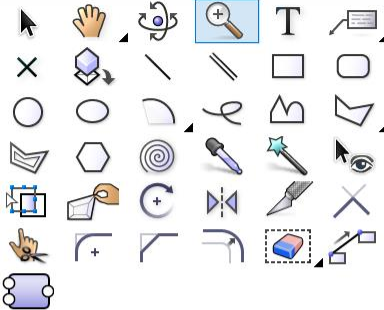
Class: None  
Layer: massing model  
Width: 12694  
Depth: 9216  
Height: 19609  
X Scale: 1  
Y Scale: 1  
Z Scale: 1

IFC...  
Name:

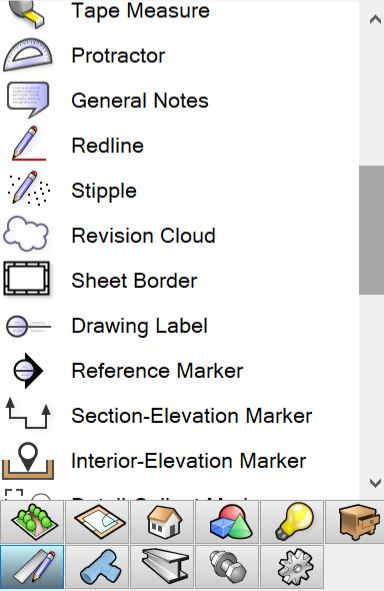
Navigation - Saved Views

- Saved View
- 001015 Phase 2
- 001017 Phase 3
- 001020 phase1 surveying
- 001023 phase1
- 001025 srueying
- 001030 create 2d plan
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- 001053 front. cnstrctin lines1
- 001056 front. cnstrctin lines2
- 001058 front. cnstrctin lines3

Basic



Tool Sets



Navigation and tool options bar including zoom tool settings (Zoom Tool: Interactive Mode), scale (0.00°), and orientation (Front).



# Phase 1 Direct Modelling

Object Info - Shape  
Shape | Data | Render  
No Selection

IFC...  
Name:

Navigation - Saved Views

- Saved View
- 001015 Phase 2
- 001017 Phase 3
- 001020 phase1 surveying
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- 001050 top Plan all mass
- 001051 top plan perspective
- 001052 perspective Massing
- 001053 front. cnstrctin lines1**
- 001056 front. cnstrctin lines2
- 001058 front. cnstrctin lines3

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Zoom Tool: Interactive Mode

10000 8000 6000 4000 2000 0 2000 4000 6000 8000 10000

Phase 1  
Direct Modelling

**Object Info - Shape**

Shape | Data | Render

**No Selection**

---

IFC...

Name:

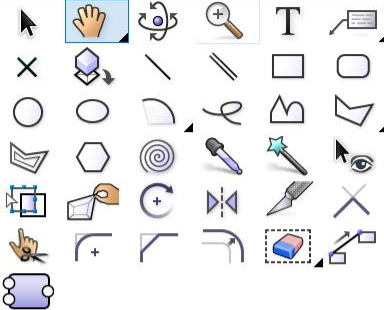
**Navigation - Saved Views**

Saved View

- 001015 Phase 2
- 001017 Phase 3
- 001020 phase1 surveying
- 001023 phase1
- 001025 srueying
- 001030 create 2d plan
- 001032 paint bucket to fill
- 001035 final 2d plan
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- 001045 objects from shapes - massing
- 001047 change massing
- 001050 top Plan all mass
- 001051 top plan perspective
- 001052 perspective Massing
- 001053 front. cnstrctin lines1
- 001056 front. cnstrctin lines2**
- 001058 front. cnstrctin lines3



Basic



Pan Tool toolbar with icons for pan, zoom, and other navigation tools. Includes a coordinate ruler at the top showing values from 10000 to 0 and 0 to 10000.

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker



Object Info - Shape

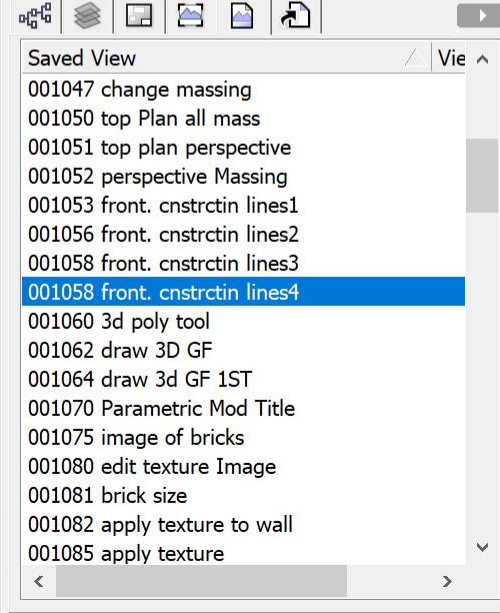
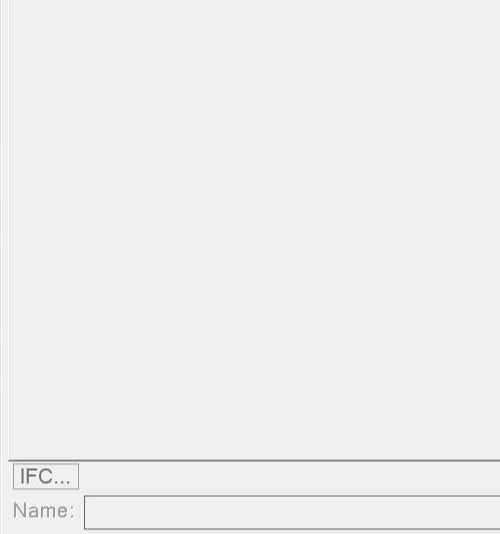
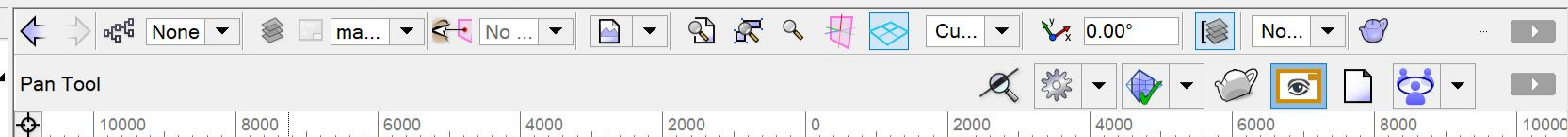
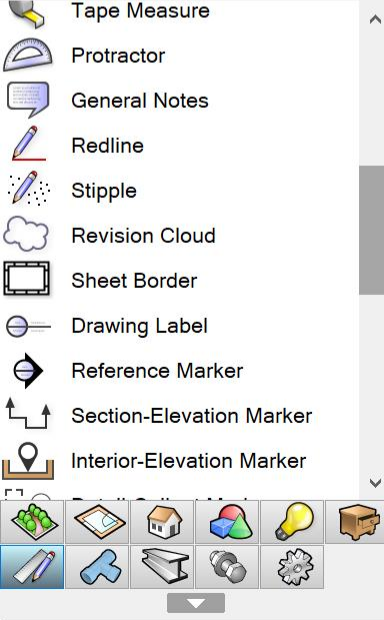
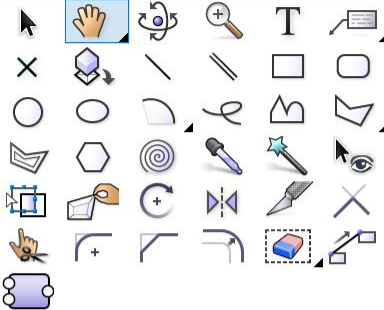
Shape Data Render

No Selection

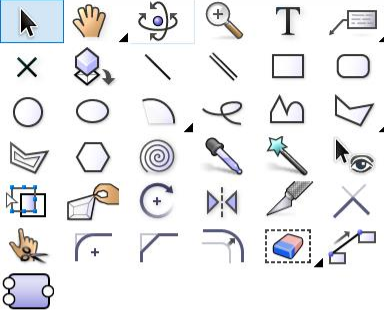
IFC...  
Name:

Navigation - Saved Views

- Saved View
- 001047 change massing
  - 001050 top Plan all mass
  - 001051 top plan perspective
  - 001052 perspective Massing
  - 001053 front. cnstrctin lines1
  - 001056 front. cnstrctin lines2
  - 001058 front. cnstrctin lines3**
  - 001058 front. cnstrctin lines4
  - 001060 3d poly tool
  - 001062 draw 3D GF
  - 001064 draw 3d GF 1ST
  - 001070 Parametric Mod Title
  - 001075 image of bricks
  - 001080 edit texture Image
  - 001081 brick size
  - 001082 apply texture to wall
  - 001085 apply texture



Basic



Top toolbar with icons for selection tools, zoom, pan, and other navigation functions. Includes a ruler with numerical values from 0 to 10000.



Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Object Info - Shape

Shape | Data | Render

**Extrude**

Class: A-Ee-20-20-M-Beam

Layer: G-Shell-Existing

±X: 10300

±Y: 176

Extr: -840

IFC...

Name:

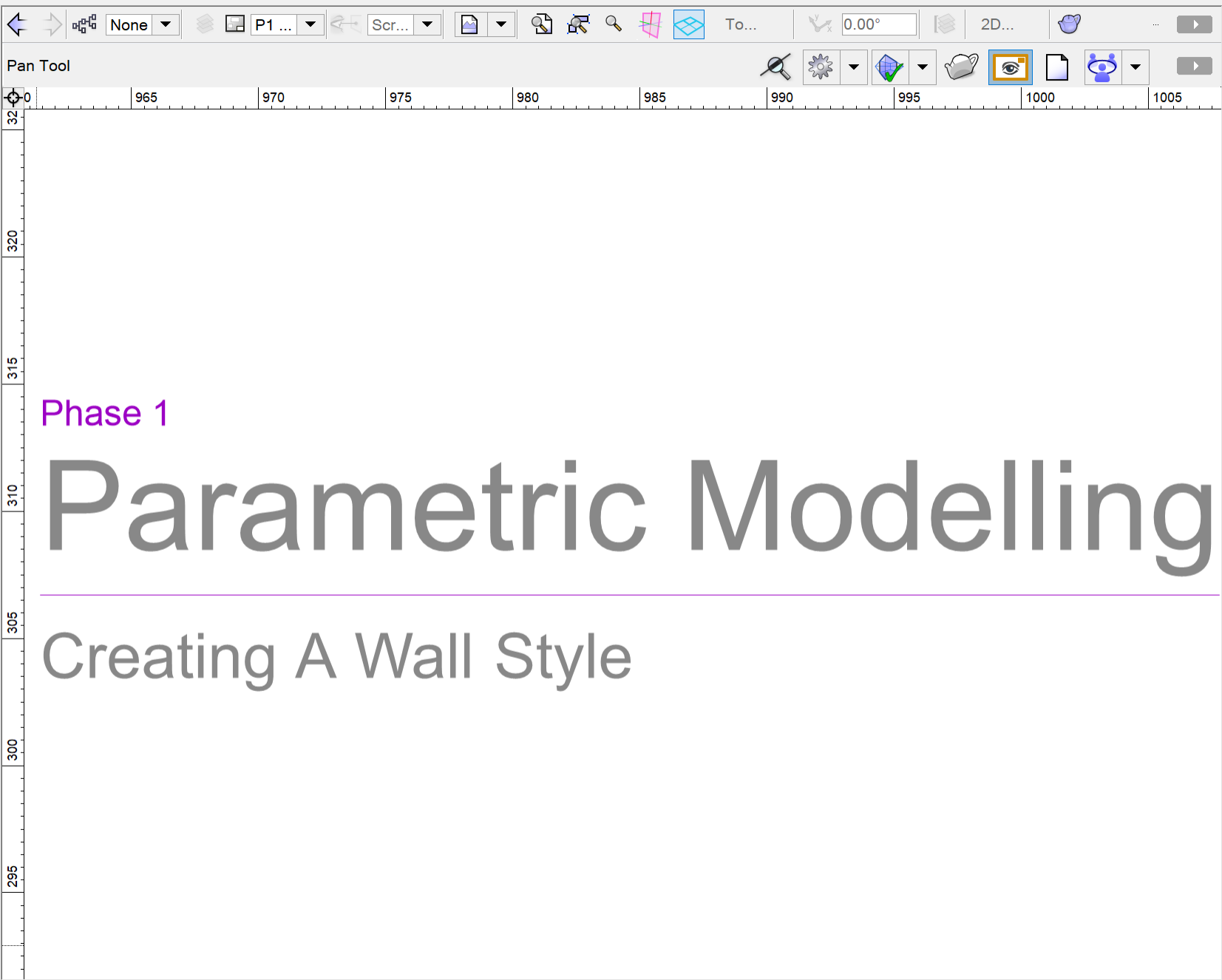
Navigation - Saved Views

- Saved View
- 001047 change massing
  - 001050 top Plan all mass
  - 001051 top plan perspective
  - 001052 perspective Massing
  - 001053 front. cnstrctin lines1
  - 001056 front. cnstrctin lines2
  - 001058 front. cnstrctin lines3
  - 001058 front. cnstrctin lines4
  - 001060 3d poly tool
  - 001062 draw 3D GF**
  - 001064 draw 3d GF 1ST
  - 001070 Parametric Mod Title
  - 001075 image of bricks
  - 001080 edit texture Image
  - 001081 brick size
  - 001082 apply texture to wall
  - 001085 apply texture

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker



**Object Info - Shape**

Shape | Data | Render

No Selection

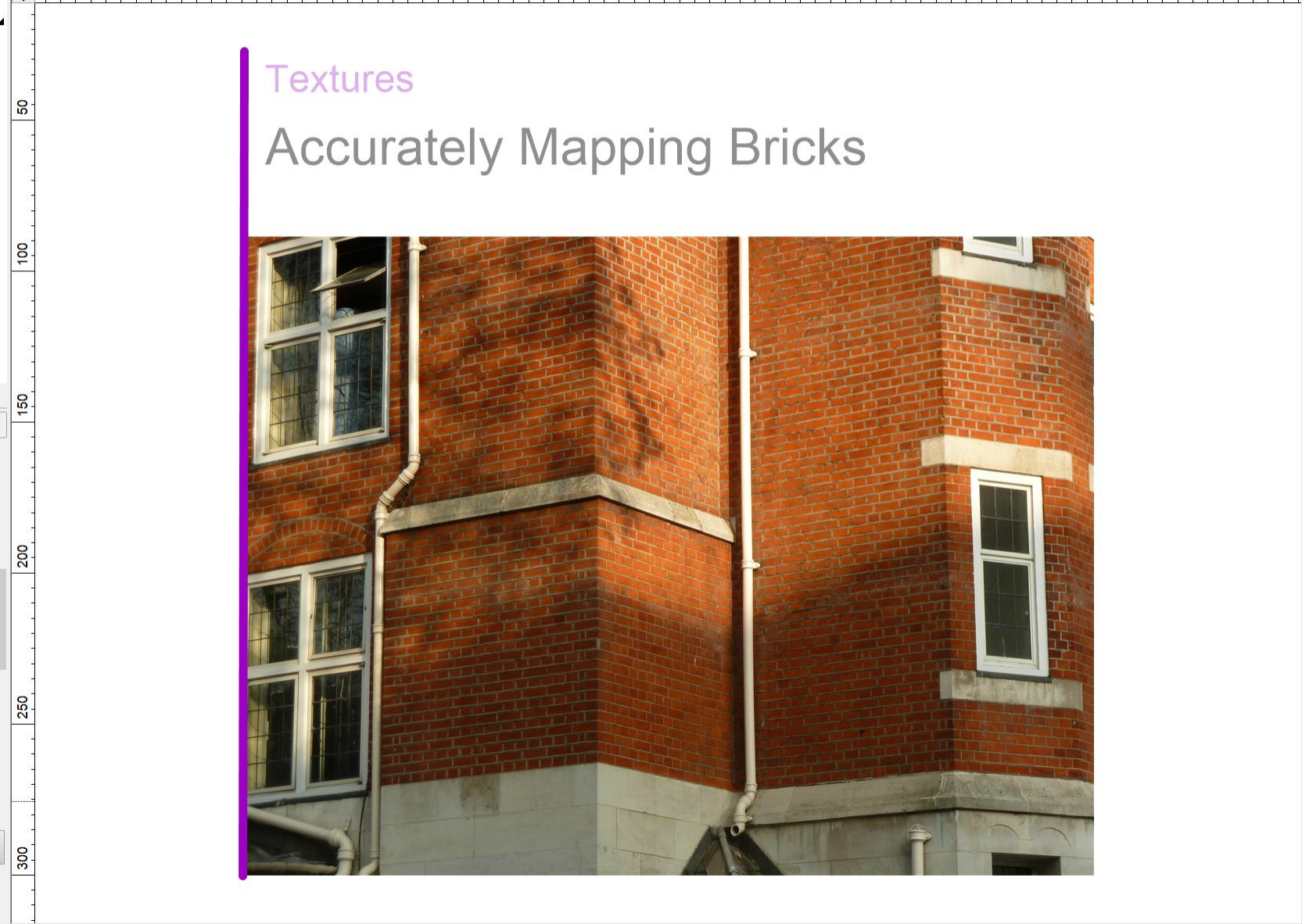
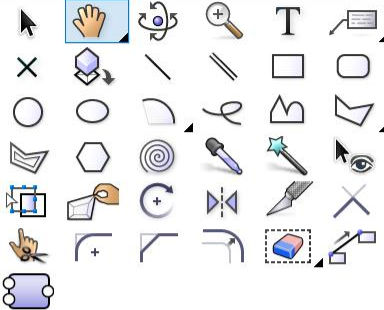
IFC...

Name:

**Navigation - Saved Views**

Saved View

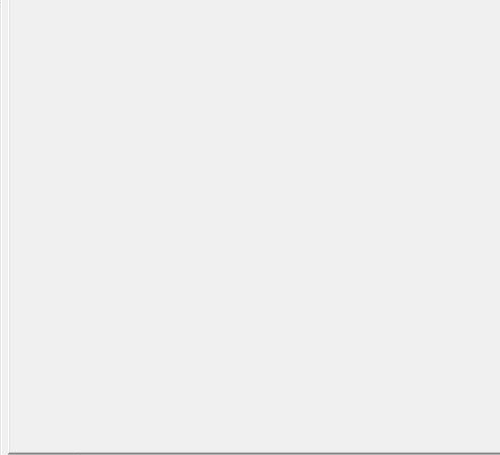
- 001047 change massing
- 001050 top Plan all mass
- 001051 top plan perspective
- 001052 perspective Massing
- 001053 front. cnstrctin lines1
- 001056 front. cnstrctin lines2
- 001058 front. cnstrctin lines3
- 001058 front. cnstrctin lines4
- 001060 3d poly tool
- 001062 draw 3D GF
- 001064 draw 3d GF 1ST
- 001070 Parametric Mod Title**
- 001075 image of bricks
- 001080 edit texture Image
- 001081 brick size
- 001082 apply texture to wall
- 001085 apply texture



# Textures

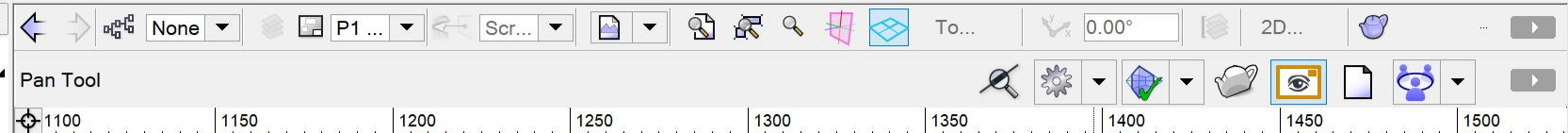
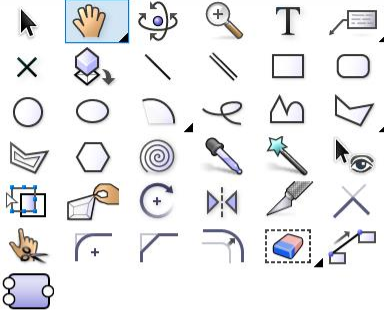
## Accurately Mapping Bricks

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

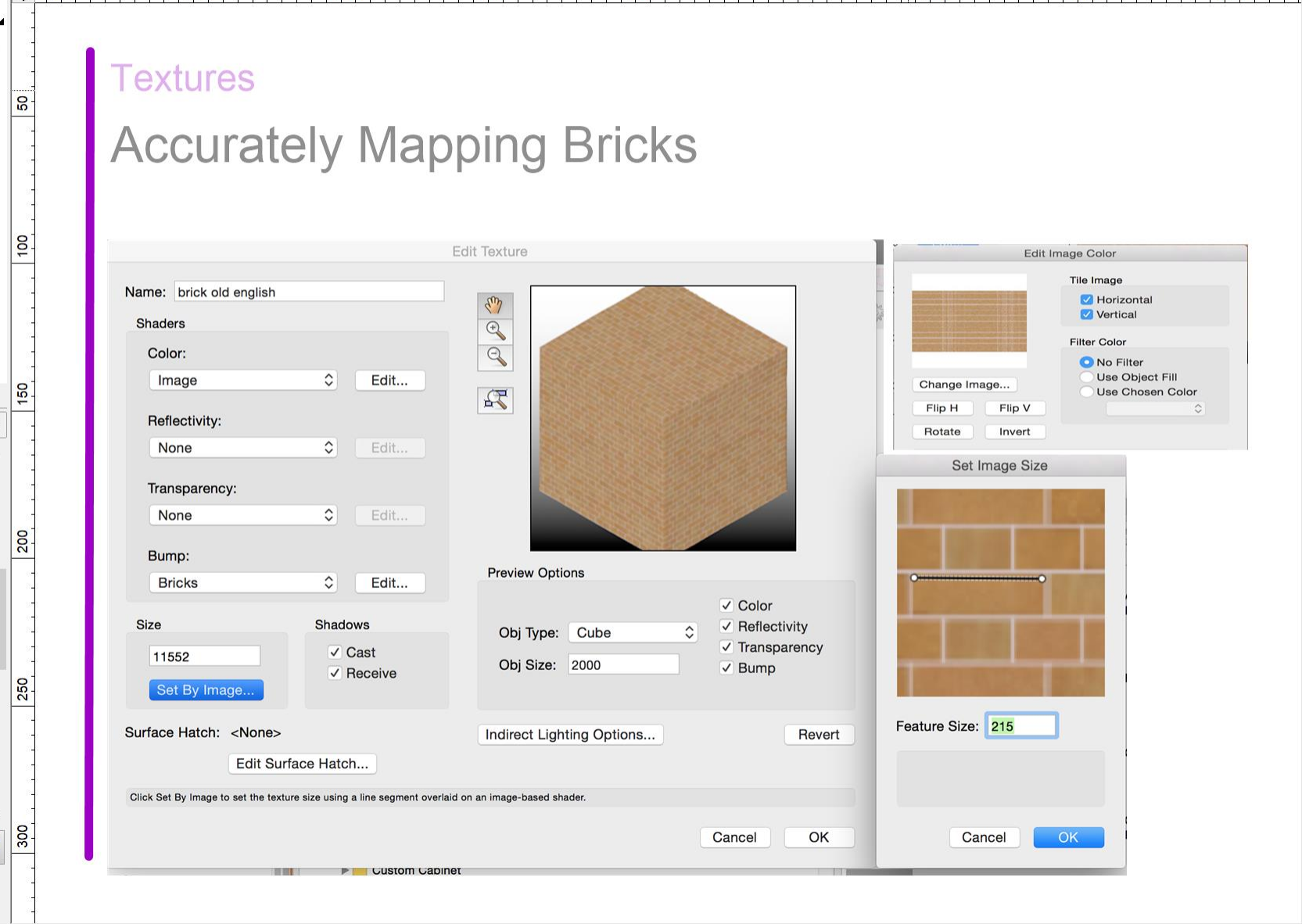
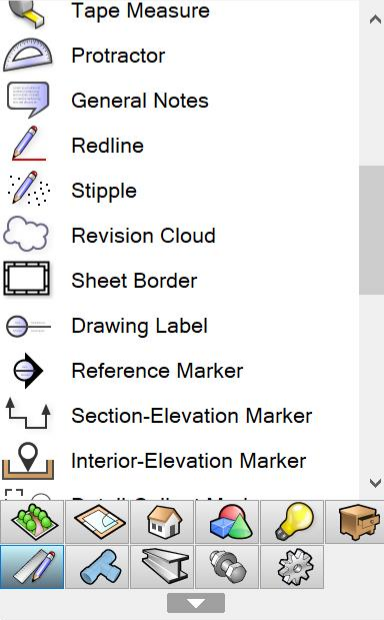


- Saved View
- 001047 change massing
- 001050 top Plan all mass
- 001051 top plan perspective
- 001052 perspective Massing
- 001053 front. cnstrctin lines1
- 001056 front. cnstrctin lines2
- 001058 front. cnstrctin lines3
- 001058 front. cnstrctin lines4
- 001060 3d poly tool
- 001062 draw 3D GF
- 001064 draw 3d GF 1ST
- 001070 Parametric Mod Title
- 001075 image of bricks**
- 001080 edit texture Image
- 001081 brick size
- 001082 apply texture to wall
- 001085 apply texture

Basic



Tool Sets



# Textures

## Accurately Mapping Bricks

**Edit Texture**

Name: brick old english

Shaders  
Color: Image [Edit...]  
Reflectivity: None [Edit...]  
Transparency: None [Edit...]  
Bump: Bricks [Edit...]

Size: 11552 [Set By Image...]  
Shadows:  Cast  Receive

Surface Hatch: <None> [Edit Surface Hatch...]

Preview Options  
Obj Type: Cube  
Obj Size: 2000  
 Color  Reflectivity  Transparency  Bump

Indirect Lighting Options... [Revert]

Cancel OK

**Edit Image Color**

Tile Image  
 Horizontal  Vertical

Filter Color  
 No Filter  
 Use Object Fill  
 Use Chosen Color

Change Image... [Flip H] [Flip V] [Rotate] [Invert]

**Set Image Size**

Feature Size: 215

Cancel OK

Object Info - Shape

Shape | Data | Render

No Selection

IFC...  
Name:

Navigation - Saved Views

- Saved View
- 001047 change massing
  - 001050 top Plan all mass
  - 001051 top plan perspective
  - 001052 perspective Massing
  - 001053 front. cnstrctin lines1
  - 001056 front. cnstrctin lines2
  - 001058 front. cnstrctin lines3
  - 001058 front. cnstrctin lines4
  - 001060 3d poly tool
  - 001062 draw 3D GF
  - 001064 draw 3d GF 1ST
  - 001070 Parametric Mod Title
  - 001075 image of bricks
  - 001080 edit texture Image**
  - 001081 brick size
  - 001082 apply texture to wall
  - 001085 apply texture

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Pan Tool

1650 1700 1750 1800 1850 1900 1950

# Textures

## Applying Texture to Wall Style

**Wall Preferences**

Wall Style: Ext Bearing-2x6-Brick Save Preferences as Wall Style...

Wall Type:  Standard Wall  Curtain Wall

**Textures** | Definition | Insertion Options | Data

Overall Thickness: 295 (Determined by components)

[Edit Wall Attributes...](#)

**Components:**

#	Name	Core	Class	Thickness	Lambda	R-Value	Top	Bottom
1	Brick Veneer		Component-Ext Finish-Brick	92	1.3000	0.07	Wall Top + 0 : ...	Wall Bottom
2	Air space		Component-Cavity	35	0.0000	0.00	Wall Top + 0 : ...	Wall Bottom
3	Sheathing		Component-Ext Finish-Sheathing	13	0.2000	0.06	Wall Top + 0 : ...	Wall Bottom
4	Wood Stud Framing (Insulated)	✓	Component-Struct-Wood (insulated)	140	0.0590	2.37	Wall Top + 0 : ...	Wall Bottom
5	Gypsum Board		Component-Finish-Gypsum Board	16	0.2000	0.08	Wall Top + 0 : ...	Wall Bottom

**Object Info - Shape**

Shape | Data | Render

**No Selection**

---

IFC...

Name:

---

**Navigation - Saved Views**

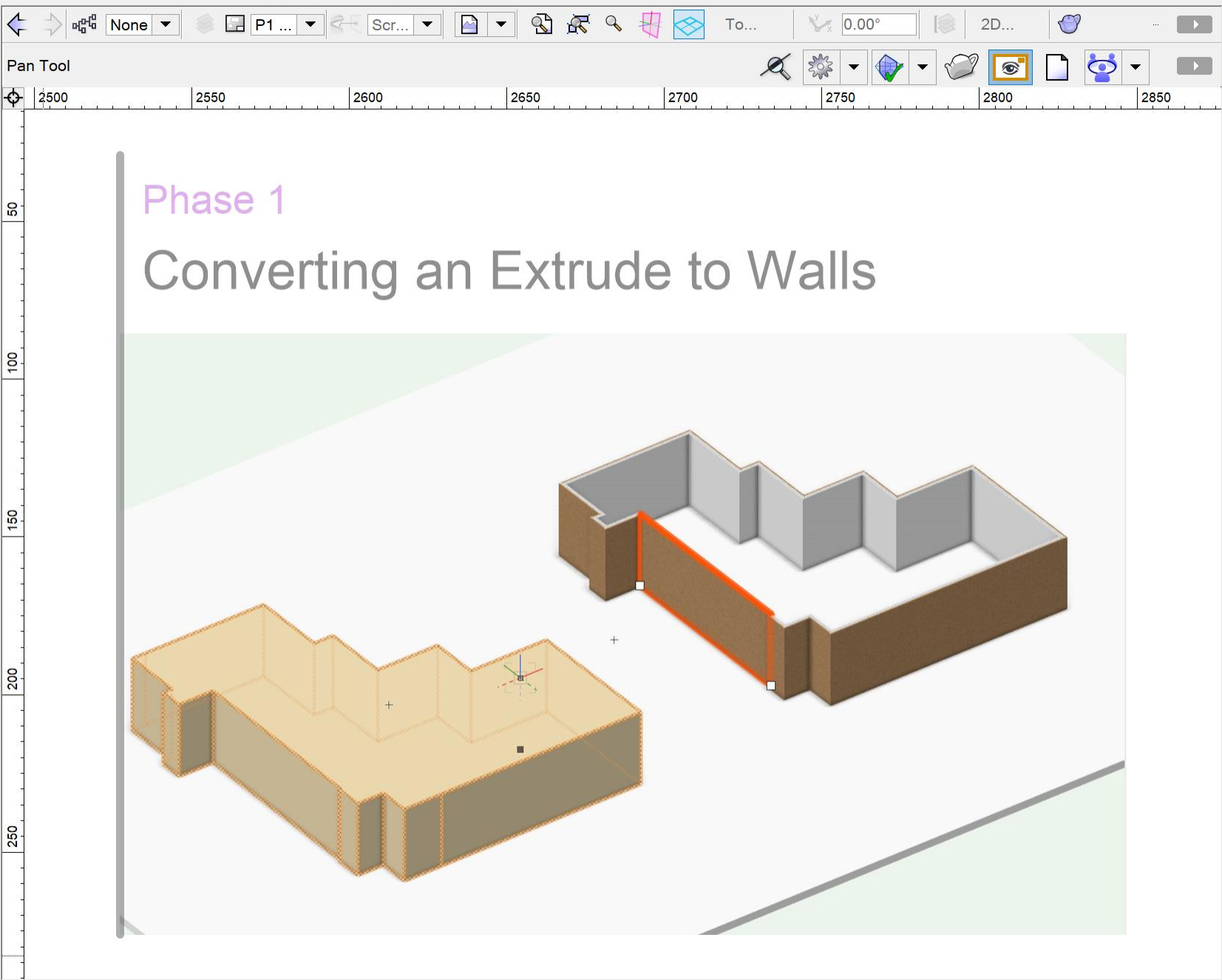
Saved View

- 001047 change massing
- 001050 top Plan all mass
- 001051 top plan perspective
- 001052 perspective Massing
- 001053 front. cnstrctin lines1
- 001056 front. cnstrctin lines2
- 001058 front. cnstrctin lines3
- 001058 front. cnstrctin lines4
- 001060 3d poly tool
- 001062 draw 3D GF
- 001064 draw 3d GF 1ST
- 001070 Parametric Mod Title
- 001075 image of bricks
- 001080 edit texture Image
- 001081 brick size
- 001082 apply texture to wall**
- 001085 apply texture

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker



**Object Info - Shape**

Shape | Data | Render

No Selection

IFC...

Name:

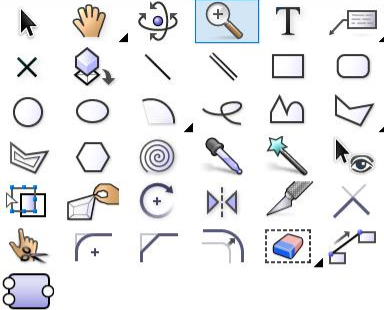
**Navigation - Saved Views**

Saved View

- 001081 brick size
- 001082 apply texture to wall
- 001085 apply texture
- 001090 AEC Space plan**
- 001095 model
- 001098 model zoom out
- 002000 model spin round
- 002005 model to floorplan
- 002010 zoom out
- 002015 model with textures
- 002020 interior
- 002030 window types
- 002500 Recap Phase 1
- 002505 recap 1
- 002510 recap 2
- 002515 recap 3
- 002520 recap 4



Basic



Zoom Tool: Interactive Mode. Includes a scale bar with markings at 10000, 8000, 6000, 4000, 2000, 0, 2000, 4000, 6000, 8000, 10000.



Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Object Info - Shape

Shape | Data | Render

**Extrude**

Class: A-Ee-20-20-M-Beam

Layer: G-Shell-Existing

±X: 10300

±Y: 176

Extr: -840

IFC...

Name:

Navigation - Saved Views

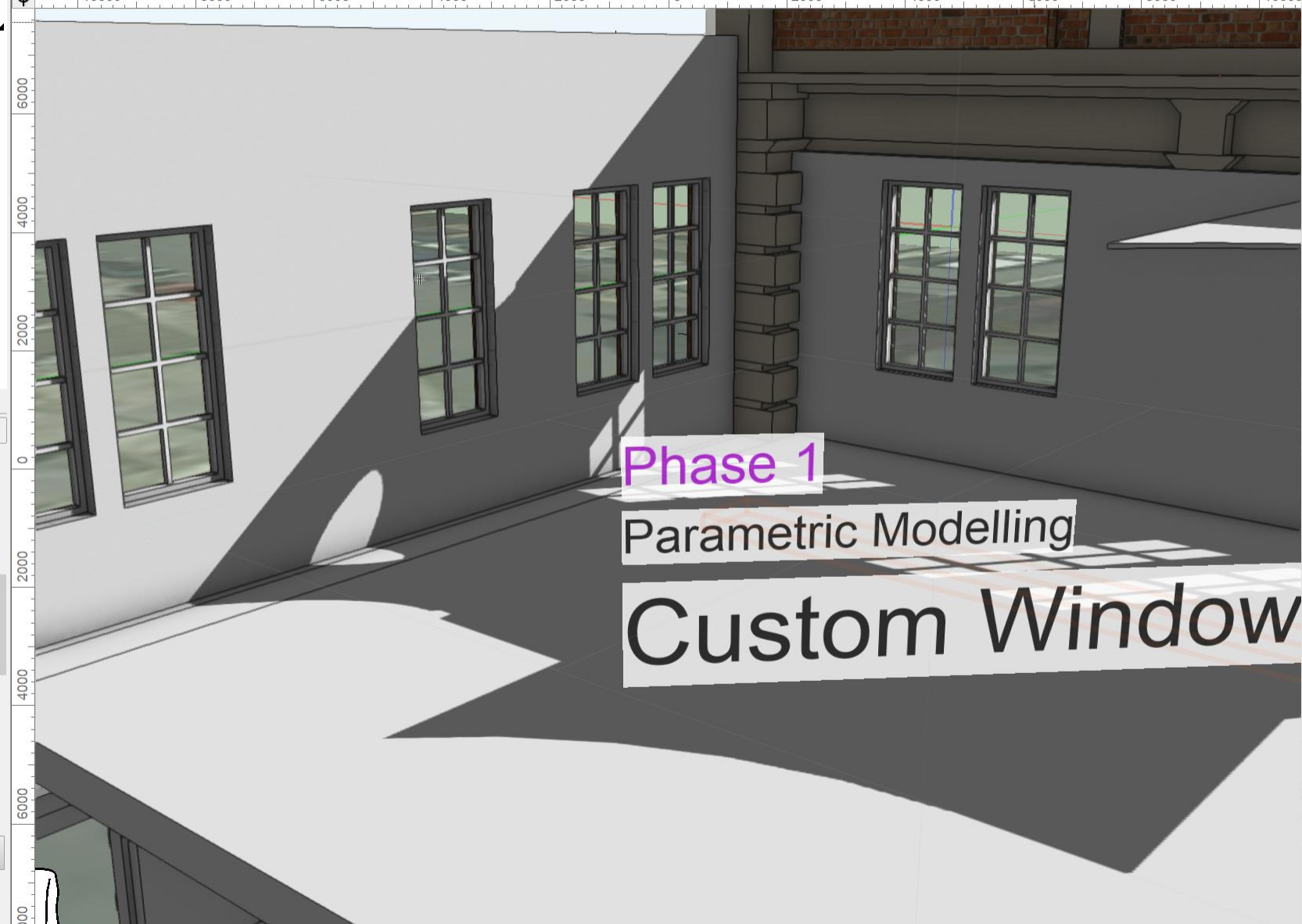
- Saved View
- 001081 brick size
  - 001082 apply texture to wall
  - 001085 apply texture
  - 001090 AEC Space plan
  - 001095 model
  - 001098 model zoom out
  - 002000 model spin round
  - 002005 model to floorplan
  - 002010 zoom out
  - 002015 model with textures**
  - 002020 interior
  - 002030 window types
  - 002500 Recap Phase 1
  - 002505 recap 1
  - 002510 recap 2
  - 002515 recap 3
  - 002520 recap 4

Basic

None 1-F... Lay... Cu... 0.00° No...

Selection Tool: Rectangular Marquee Mode

10000 8000 6000 4000 2000 0 2000 4000 6000 8000 10000



Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Object Info - Shape

Shape Data Render

Extrude

Class: A-Ee-20-20-M-Beam

Layer: G-Shell-Existing

±X: 10300

±Y: 176

Extr: -840

IFC...

Name:

Navigation - Saved Views

Saved View

- 002000 model spin round
- 002005 model to floorplan
- 002010 zoom out
- 002015 model with textures
- 002020 interior
- 002030 window types**
- 002500 Recap Phase 1
- 002505 recap 1
- 002510 recap 2
- 002515 recap 3
- 002520 recap 4
- 003000 Phase 2
- 003001 phase 2a
- 003002 Create record title
- 003004 new record
- 003006 phasing
- 003007 edit feild

Use Style: Unstyled

### Custom Sash Options

Num. of Rows: 4

Num. of Columns: 2

Overall Width: 800

Overall Height: 1850

Mullion Width: 38

Mullion Depth: 51

#### Selected Sash

Width: 381

Height: 434

Sash: Fixed Glass - N

Operation: XX

Replace Glazing with Louvers

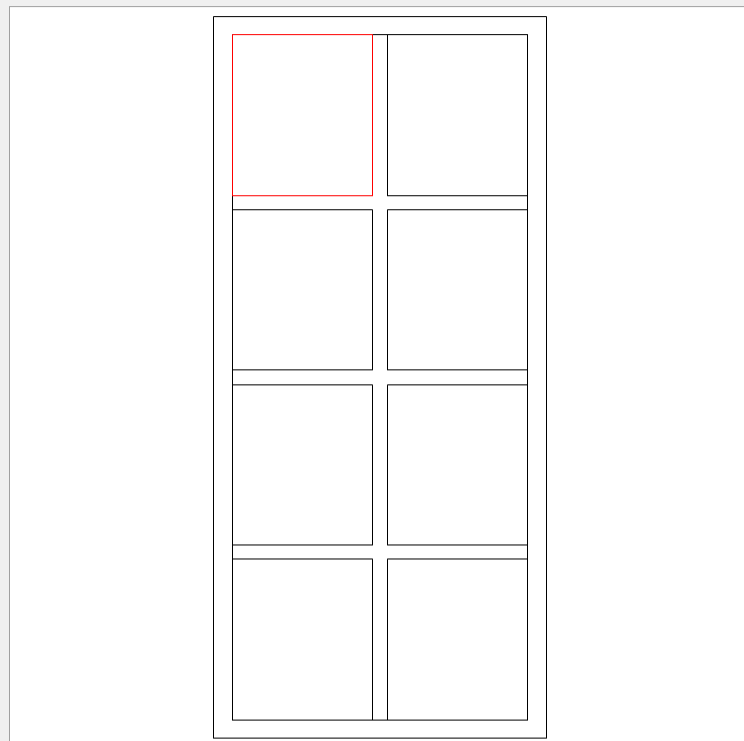
Include Muntins

Lock Sash Configuration

Unequal Sash

Sash Scale Factor: 0.25

<< >>



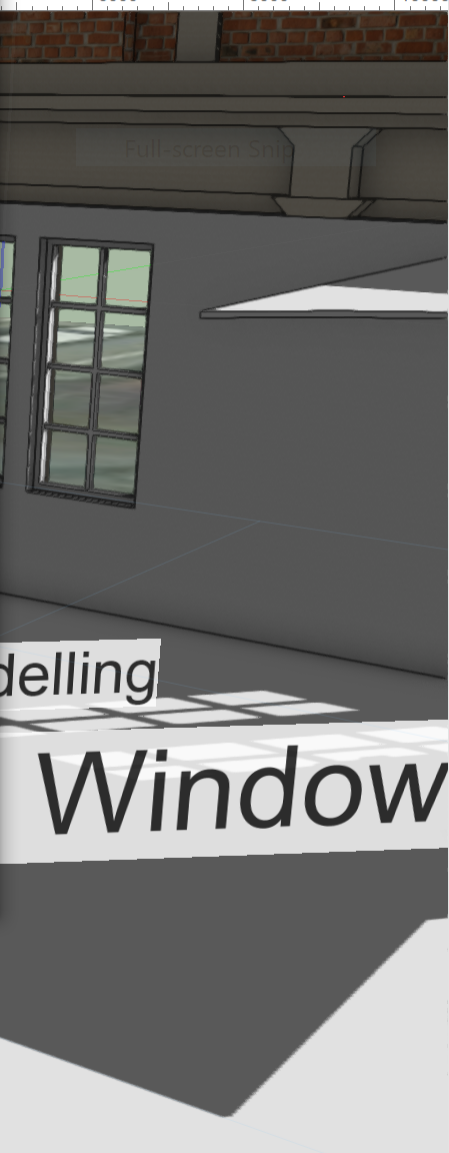
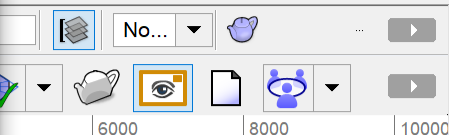
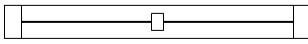
OK

Cancel

Width: 900

Height: 1950

Elevation In Wall: 3230



### Object Info - Shape

Shape | Data | Render

#### Window In Wall

Class: None

Layer: 1-Shell-Existing

Insert: Center line

Break: Full break without cap

Height: -1460

Flip

Set Position...

Style: Window Style

Hide Style Parameters

Settings...

#### General

Window Shape: Rectangle

Top Shape: Square

IFC... <Default IfcWindow>

Name:

#### Navigation - Saved Views

Saved View

- 002000 model spin round
- 002005 model to floorplan
- 002010 zoom out
- 002015 model with textures
- 002020 interior
- 002030 window types**
- 002500 Recap Phase 1
- 002505 recap 1
- 002510 recap 2
- 002515 recap 3
- 002520 recap 4
- 003000 Phase 2
- 003001 phase 2a
- 003002 Create record title
- 003004 new record
- 003006 phasing
- 003007 edit feild

Window Settings

Use Style: Unstyled Convert to Unstyled

**General**

2D Visualization  
3D Visualization  
ID Tag  
Corner Window  
Jamb and Sash  
Sill  
Louvers  
Transom  
Trim  
Lintel  
Muntins  
Interior Shutters  
Exterior Shutters  
Centerline Marker  
Interior Wall Detail  
Exterior Wall Detail  
Classes  
Energos  
Data

General

Window Shape: Rectangle

Top Shape: Square

Transom

Rise:

Spring:

Sash:

Operation:

Use Symbol Geometry  
Name: No Symbol Chosen Browse...

Size Reference: Unit Size

Width: 900

Height: 1950

Elevation In Wall: 3230

3D Preview

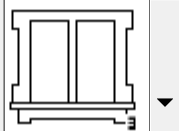
View: Front

Render: Wireframe

Preview

Choose a Symbol

Symbol Folders:  
Root Folder

Symbols:  
  
window frame  
concrete

OK Cancel

0.00° No...

4000 6000 8000 10000

Object Info - Shape

Shape | Data | Render

**Window In Wall**

Class: None

Layer: 1-Shell-Existing

Insert: Center line

Break: Full break without cap

Height: -1460

Flip

Set Position...

Style: Window Style

Hide Style Parameters

Settings...

General

Window Shape: Rectangle

Top Shape: Square

IFC... <Default IfcWindow>

Name:

Navigation - Saved Views

Saved View

- 002000 model spin round
- 002005 model to floorplan
- 002010 zoom out
- 002015 model with textures
- 002020 interior
- 002030 window types**
- 002500 Recap Phase 1
- 002505 recap 1
- 002510 recap 2
- 002515 recap 3
- 002520 recap 4
- 003000 Phase 2
- 003001 phase 2a
- 003002 Create record title
- 003004 new record
- 003006 phasing
- 003007 edit feild

ic Modelling

om Window

CAP NUM SCRL

Basic

None P1... Scr... To... 0.00° 2D...

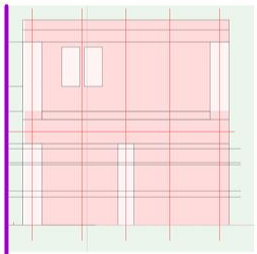
Selection Tool: Rectangular Marquee Mode

2200 2300 2400 2500 2600 2700 2800 2900 3000 3100

# Summary of Phase 1



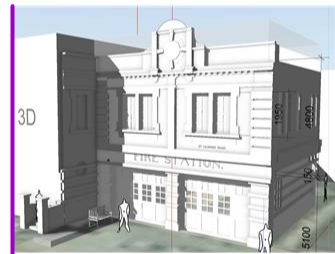
2D Plan



2D Elevation



Drawing in 3D



3D Direct Modelling



3D Parametric Modelling

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Object Info - Shape

Shape Data Render

No Selection

IFC...

Name:

Navigation - Saved Views

- Saved View
- 002000 model spin round
  - 002005 model to floorplan
  - 002010 zoom out
  - 002015 model with textures
  - 002020 interior
  - 002030 window types
  - 002500 Recap Phase 1**
  - 002505 recap 1
  - 002510 recap 2
  - 002515 recap 3
  - 002520 recap 4
  - 003000 Phase 2
  - 003001 phase 2a
  - 003002 Create record title
  - 003004 new record
  - 003006 phasing
  - 003007 edit feild

Basic

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Selection Tool: Rectangular Marquee Mode

1020 1025 1030 1035 1040 1045 1050 1055 1060 1065 1070

# Phase 2

---

# Construction Phasing

- Existing
- Demolition
- New Build

Object Info - Shape

Shape Data Render

No Selection

IFC...

Name:

Navigation - Saved Views

Saved View

- 002000 model spin round
- 002005 model to floorplan
- 002010 zoom out
- 002015 model with textures
- 002020 interior
- 002030 window types
- 002500 Recap Phase 1
- 002505 recap 1
- 002510 recap 2
- 002515 recap 3
- 002520 recap 4
- 003000 Phase 2
- 003001 phase 2a**
- 003002 Create record title
- 003004 new record
- 003006 phasing
- 003007 edit feild

X: 1026 Y: 254 L: 1057 A: 13.91° CAP NUM SCRL

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

None P1... Scr... To... 0.00° 2D...

Zoom Tool: Interactive Mode

920 930 940 950 960 970 980 990 1000

370 380 390 400 410 420 430

# Phasing

## Creating a Phasing Record

Resource Manager

**Object Info - Shape**

Shape Data Render

No Selection

IFC... Name:

**Navigation - Saved Views**

Saved View Vie ^

- 002000 model spin round
- 002005 model to floorplan
- 002010 zoom out
- 002015 model with textures
- 002020 interior
- 002030 window types
- 002500 Recap Phase 1
- 002505 recap 1
- 002510 recap 2
- 002515 recap 3
- 002520 recap 4
- 003000 Phase 2
- 003001 phase 2a
- 003002 Create record title**
- 003004 new record
- 003006 phasing
- 003007 edit feild

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Zoom Tool: Interactive Mode

0.00° 2D...

# Phasing

## Creating a Phasing Record

**Resource Manager**

Record Formats

Open Files:Untitled 1 (0 Items)

Data

- Subscription Libraries
- Open Files
  - CUB2 Presentation v2017.vwx
  - CUB4\_Presentation File\_Par...
  - Untitled 1
- Favorites
  - CAT.01.BACKBARTILES.vwx
  - CAT.01.CAFE SEATING.vwx
  - CAT.06.LIGHTING 2017\_06\_01
  - CAT.06.LIGHTING.vwx
- SB\_Casework
  - METRIC CASEWORK.vwx
  - \_RECORDS
- SB\_Finishes
- SB\_Furniture & Fixtures
  - CAT.02.SOFT SEATING.vwx

New Resource... New Folder... **New Record Format...**

**Object Info - Shape**

Shape | Data | Render

No Selection

IFC...

Name:

**Navigation - Saved Views**

Saved View

- 002030 window types
- 002500 Recap Phase 1
- 002505 recap 1
- 002510 recap 2
- 002515 recap 3
- 002520 recap 4
- 003000 Phase 2a
- 003001 phase 2a
- 003002 Create record title
- 003004 new record**
- 003006 phasing
- 003007 edit feild
- 003009 choices
- 003012 finished record
- 003020 file setup
- 003022 design layers
- 003024 classes



**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

None P1... Scr... To... 0.00° 2D...

Zoom Tool: Interactive Mode

1150 1200 1250 1300 1350 1400 1450 1500

450 500 550 600 650

**Resource Manager**

Subscription Libraries

Open Files

- CUB2 Presentation v2017.vwx
- CUB4\_Presentation File\_Par...

Record Formats

...tion File\_Part2.vwx (3 Items)

Data

**Create Record Format**

Name: Phasing

#	Field Name	Type	Default Value

New... Edit... Remove

The list of fields in the record format -- click on a field to change its po...

**Edit Choices**

Choices:

- Existing
- Demolition
- New Build

Cancel OK

**Edit Field**

Name:

Type: Pop-up

Default:

Choose the type of field. Note: Using Integer requires less memory than Number.

Cancel OK

**Object Info - Shape**

Shape Data Render

No Selection

IFC...

Name:

**Navigation - Saved Views**

Saved View

- 002030 window types
- 002500 Recap Phase 1
- 002505 recap 1
- 002510 recap 2
- 002515 recap 3
- 002520 recap 4
- 003000 Phase 2a
- 003001 phase 2a
- 003002 Create record title
- 003004 new record
- 003006 phasing
- 003007 edit feild
- 003009 choices
- 003012 finished record
- 003020 file setup
- 003022 design layers
- 003024 classes

Basic

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Zoom Tool: Interactive Mode

1150 1200 1250 1300 1350 1400 1450 1500

Resource Manager

Subscription Libraries

Open Files

- CUB2 Presentation v2017.vwx
- CUB4\_Presentation File\_Par...

Record Formats

...tion File\_Part2.vwx (3 Items)

Data

Create Record Format

Name: Phasing

#	Field Name	Type	Default Value

New... Edit... Remove

The list of fields in the record format -- click on a field to change its position.

Edit Choices

Choices:

- Existing
- Demolition
- New Build

Edit Field

Name:

Type: Pop-up

Default:

Choose the type of field. Note: Using Integer requires less memory than Number.

Cancel OK

Object Info - Shape

Shape Data Render

No Selection

IFC...

Name:

Navigation - Saved Views

Saved View

- 002030 window types
- 002500 Recap Phase 1
- 002505 recap 1
- 002510 recap 2
- 002515 recap 3
- 002520 recap 4
- 003000 Phase 2
- 003001 phase 2a
- 003002 Create record title
- 003004 new record
- 003006 phasing
- 003007 edit feild
- 003009 choices
- 003012 finished record
- 003020 file setup
- 003022 design layers
- 003024 classes

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Zoom Tool: Interactive Mode

1150 1200 1250 1300 1350 1400 1450 1500

Resource Manager

Subscription Libraries

Open Files

- CUB2 Presentation v2017.vwx
- CUB4\_Presentation File\_Par...

Record Formats

...tion File\_Part2.vwx (3 Items)

Data

Create Record Format

Name: Phasing

#	Field Name	Type	Default Value

New... Edit... Remove

The list of fields in the record format -- click on a field to change its po...

Edit Choices

Choices:

- Existing
- Demolition
- New Build

Cancel OK

Edit Field

Name:

Type: Pop-up

Default:

Choose the type of field. Note: Using Integer requires less memory than Number.

Cancel OK

Object Info - Shape

Shape Data Render

No Selection

IFC...

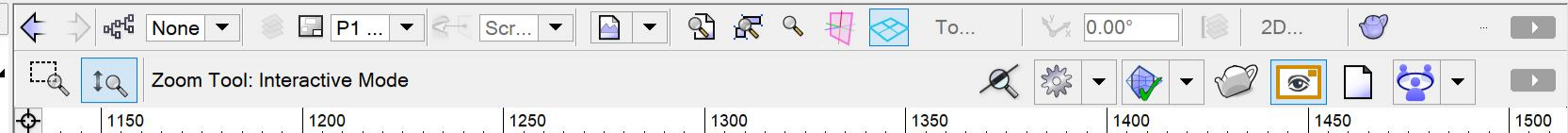
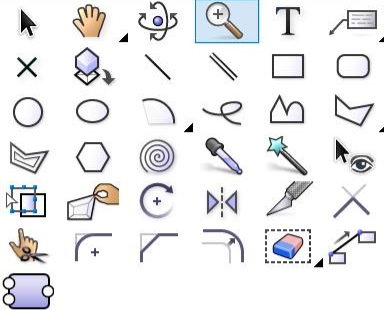
Name:

Navigation - Saved Views

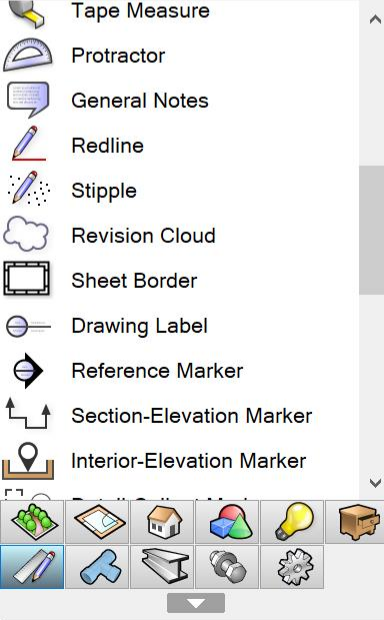
Saved View

- 002030 window types
- 002500 Recap Phase 1
- 002505 recap 1
- 002510 recap 2
- 002515 recap 3
- 002520 recap 4
- 003000 Phase 2
- 003001 phase 2a
- 003002 Create record title
- 003004 new record
- 003006 phasing
- 003007 edit feild
- 003009 choices**
- 003012 finished record
- 003020 file setup
- 003022 design layers
- 003024 classes

Basic



Tool Sets



**Resource Manager**

Subscription Libraries

Open Files

- CUB2 Presentation v2017.vwx
- CUB4\_Presentation File\_Part2.vwx**
- Untitled 1

Favorites

- CAT.01.BACKBARTILES.vwx
- CAT.01.CAFE SEATING.vwx
- CAT.06.LIGHTING 2017\_06\_01\_GZ.vwx
- CAT.06.LIGHTING.vwx
- SB\_Casework
  - METRIC CASEWORK.vwx
  - \_RECORDS

Record Formats

...UB4\_Presentation File\_Part2.vwx (3 Items)

- 01 Starbucks Schedule General
- Material Take-off
- Phasing**

New... Edit... Remove

The list of fields in the record format -- click on a field to change its po

Edit Choices

Choices:

- Existing
- Demolition
- New Build

Cancel OK

Edit Field

Name:

Type: Pop-up

Default:

Choose the type of field. Note: Using Integer requires less memory than Number.

Cancel OK

Object Info - Shape

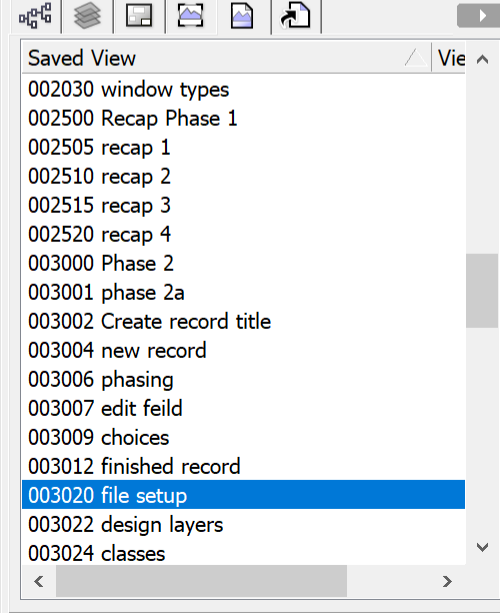
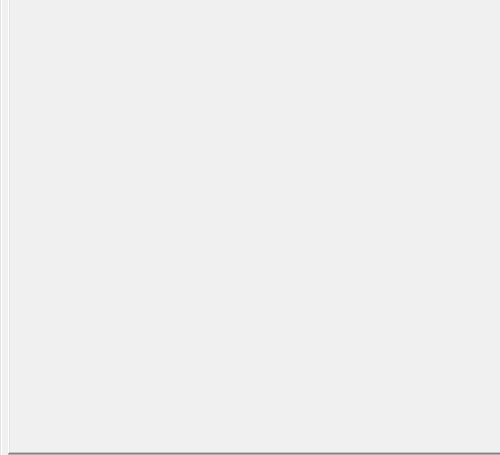
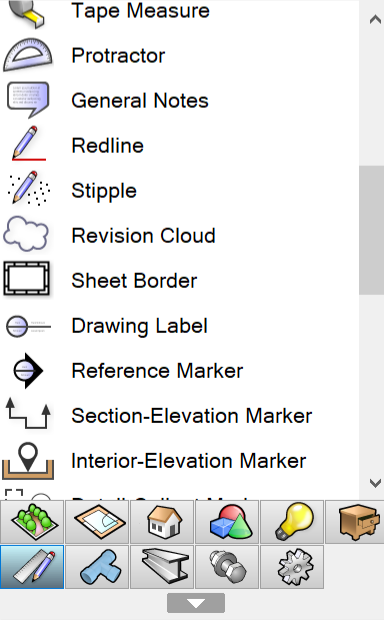
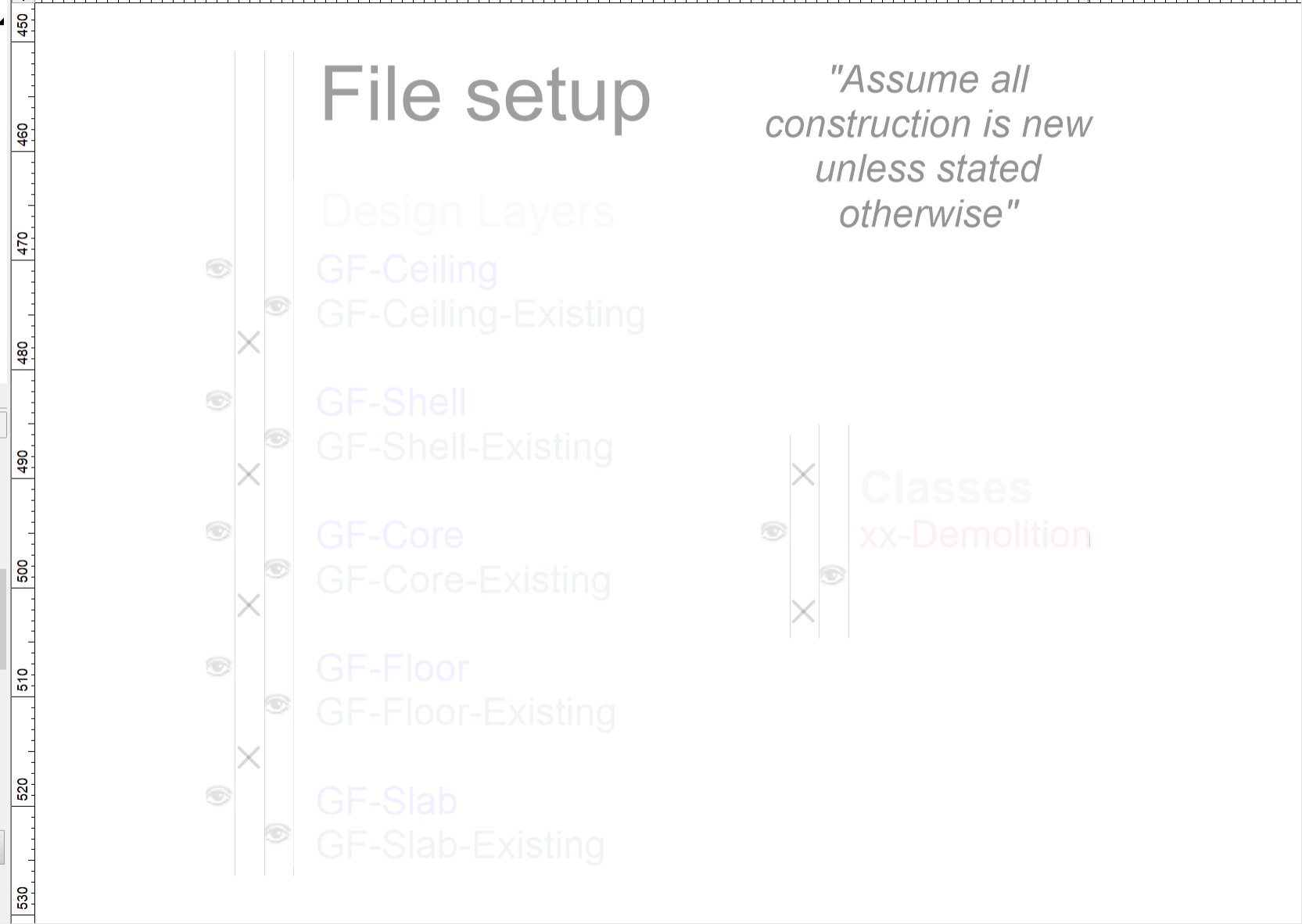
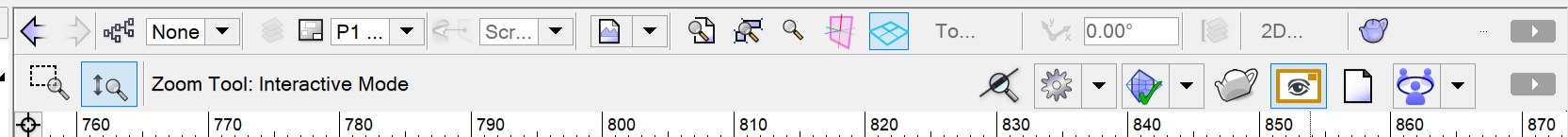
Shape Data Render

No Selection

IFC... Name:

Navigation - Saved Views

- Saved View
- 002030 window types
  - 002500 Recap Phase 1
  - 002505 recap 1
  - 002510 recap 2
  - 002515 recap 3
  - 002520 recap 4
  - 003000 Phase 2
  - 003001 phase 2a
  - 003002 Create record title
  - 003004 new record
  - 003006 phasing
  - 003007 edit feild
  - 003009 choices
  - 003012 finished record**
  - 003020 file setup
  - 003022 design layers
  - 003024 classes



**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Zoom Tool: Interactive Mode

760 770 780 790 800 810 820 830 840 850 860 870

450 460 470 480 490 500 510 520 530

# File setup

*"Assume all construction is new unless stated otherwise"*

Design Layers

- GF-Ceiling
- GF-Ceiling-Existing
- GF-Shell
- GF-Shell-Existing
- GF-Core
- GF-Core-Existing
- GF-Floor
- GF-Floor-Existing
- GF-Slab
- GF-Slab-Existing

Classes

- xx-Demolition

**Object Info - Shape**

Shape | Data | Render

**No Selection**

---

IFC...

Name:

**Navigation - Saved Views**

Saved View

- 003007 edit feild
- 003009 choices
- 003012 finished record
- 003020 file setup
- 003022 design layers**
- 003024 classes
- 003026 file setup - variations
- 003030 phase diagram
- 003032 existing. demo
- 003034 demolition setup
- 003035a demo setup
- 003035b demo class
- 003035c select similar class
- 003035d attach record
- 003036 existing to demo
- 003038 Data Visulisation
- 003040 data vis attributes

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Zoom Tool: Interactive Mode

760 770 780 790 800 810 820 830 840 850 860 870

450 460 470 480 490 500 510 520 530

# File setup

*"Assume all construction is new unless stated otherwise"*

Design Layers

- GF-Ceiling
- GF-Ceiling-Existing
- GF-Shell
- GF-Shell-Existing
- GF-Core
- GF-Core-Existing
- GF-Floor
- GF-Floor-Existing
- GF-Slab
- GF-Slab-Existing

# Classes

- xx-Demolition

**Object Info - Shape**

Shape | Data | Render

No Selection

---

IFC...

Name:

**Navigation - Saved Views**

Saved View

- 003007 edit feild
- 003009 choices
- 003012 finished record
- 003020 file setup
- 003022 design layers
- 003024 classes**
- 003026 file setup - variations
- 003030 phase diagram
- 003032 existing. demo
- 003034 demolition setup
- 003035a demo setup
- 003035b demo class
- 003035c select similar class
- 003035d attach record
- 003036 existing to demo
- 003038 Data Visulisation
- 003040 data vis attributes

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Zoom Tool: Interactive Mode

760 780 800 820 840 860 880 900 920

# Construcion Phasing

## File Setup - Variations

<h3>Interior renovation (A)</h3> <p>Receive Shell - not to edit No interior objects</p> <p><b>Design Layers:</b> GF-Shell-Existing GF-Floor No demolition Class required.</p>	<h3>Interior renovation (B)</h3> <p>Receive Shell - not to edit Interior objects - To edit</p> <p>Same as (A) but with a <b>Demolition Class</b> 2D Graphic options need to be set accordingly.</p>
<h3>Complete Renovation</h3> <p>Receive Shell - To edit Interior Objects - To edit</p> <p><b>Design layers:</b> GF-Shell-Existing GF-Shell GF-Floor Existing GF-Floor</p> <p><b>Demolition Class</b></p>	<h3>Exterior Renovation</h3> <p>Receive Shell - To edit Interior Objects - not to edit</p> <p><b>Design Layers:</b> GF-Shell-Existing GF-Shell GF-Floor Existing</p> <p><b>Demolition Class</b></p>

**Object Info - Shape**

Shape | Data | Render

**No Selection**

---

IFC...

Name:

**Navigation - Saved Views**

Saved View

- 003007 edit feild
- 003009 choices
- 003012 finished record
- 003020 file setup
- 003022 design layers
- 003024 classes
- 003026 file setup - variations**
- 003030 phase diagram
- 003032 existing. demo
- 003034 demolition setup
- 003035a demo setup
- 003035b demo class
- 003035c select similar class
- 003035d attach record
- 003036 existing to demo
- 003038 Data Visulisation
- 003040 data vis attributes



**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

**Pan Tool**

800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 30

# Construction Phasing

**Existing**

- GF-Floor
- GF-Floor-Existing
- Demolition Class

**Demolition**

- GF-Floor
- GF-Floor-Existing
- Demolition Class

+ Data Visulisation

**New Build**

- GF-Floor
- GF-Floor-Existing
- Demolition Class

+ Data Visulisation

**Object Info - Shape**

Shape | Data | Render

**No Selection**

---

IFC...

Name:

**Navigation - Saved Views**

Saved View

- 003007 edit feild
- 003009 choices
- 003012 finished record
- 003020 file setup
- 003022 design layers
- 003024 classes
- 003026 file setup - variations
- 003030 phase diagram**
- 003032 existing. demo
- 003034 demolition setup
- 003035a demo setup
- 003035b demo class
- 003035c select similar class
- 003035d attach record
- 003036 existing to demo
- 003038 Data Visulisation
- 003040 data vis attributes

Basic

Selection Tool: Rectangular Marquee Mode

0.00°

No...

10000 8000 6000 4000 2000 0 2000 4000 6000 8000 10000



# Preparing For Demolition

## Setup

1. Demolition Class
2. Select Similar
3. Attach Phasing Record

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Object Info - Data

Shape Data Render

Wall

Record Formats:

Phasing

Attach Record

Detach Record...

Phases: Demolition

IFC... IfcWallStandardCase

Name:

Navigation - Saved Views

Saved View

- 003007 edit feild
- 003009 choices
- 003012 finished record
- 003020 file setup
- 003022 design layers
- 003024 classes
- 003026 file setup - variations
- 003030 phase diagram
- 003032 existing. demo
- 003034 demolition setup**
- 003035a demo setup
- 003035b demo class
- 003035c select similar class
- 003035d attach record
- 003036 existing to demo
- 003038 Data Visulisation
- 003040 data vis attributes

Basic

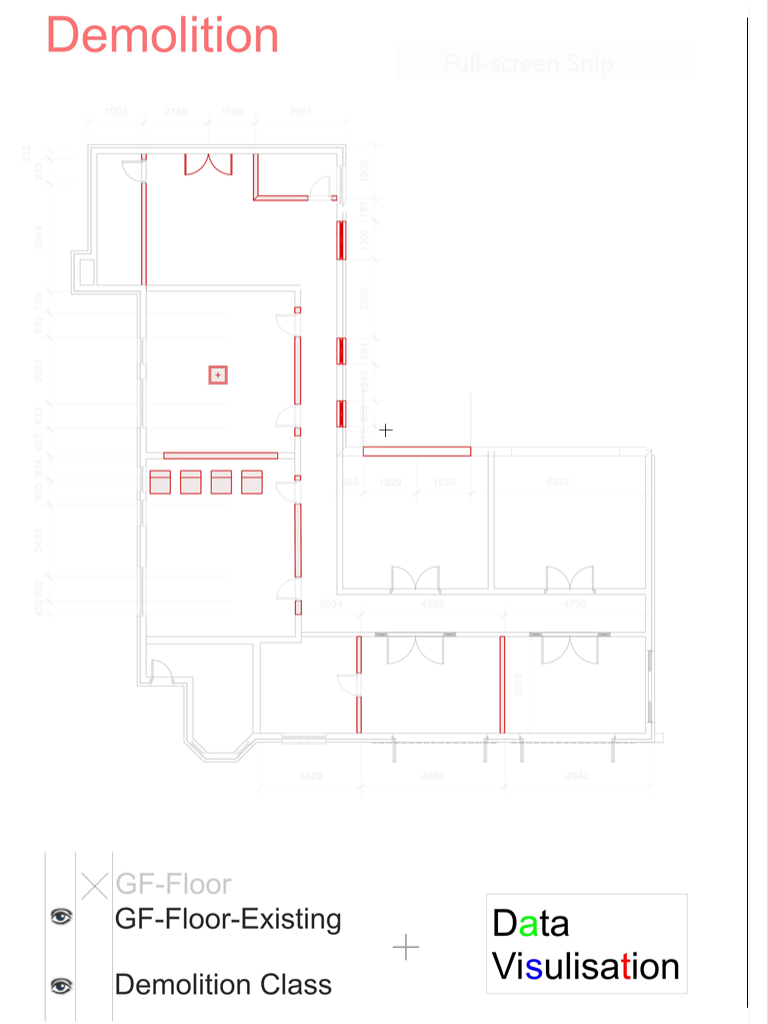
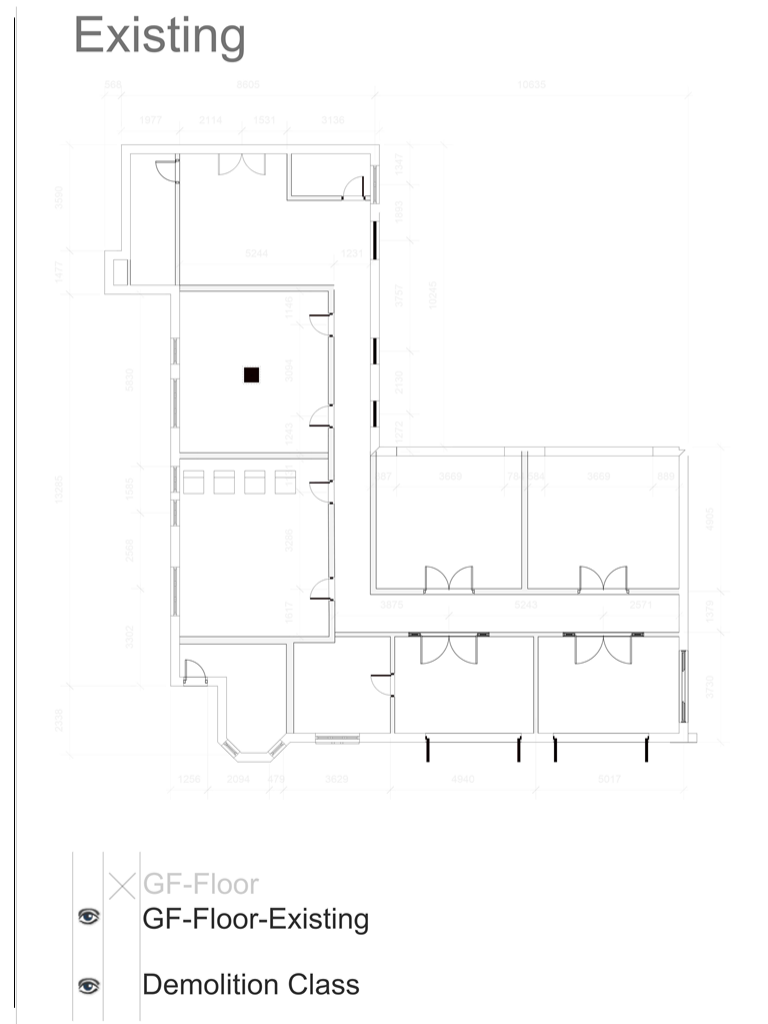
None P1... Scr... To... 0.00° 2D... 0 1 2

Dim Std: Arch

Constrained Linear Dimension Tool: Constr

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker



Object Info - Data

Shape Data Render

### Document Record Format Defaults

Record Formats:

- Event Planning Record
- Material Take-off
- Phase**
- Phasing

Attach Record

Detach Record...

Phases:

IFC...

Name:

### Navigation - Saved Views

Saved View

- 003007 edit feild
- 003009 choices
- 003012 finished record
- 003020 file setup
- 003022 design layers
- 003024 classes
- 003026 file setup - variations
- 003030 phase diagram
- 003032 existing. demo
- 003034 demolition setup
- 003035a demo setup
- 003035b demo class
- 003035c select similar class
- 003035d attach record
- 003036 existing to demo**
- 003038 Data Visualisation
- 003040 data vis attributes

Basic

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

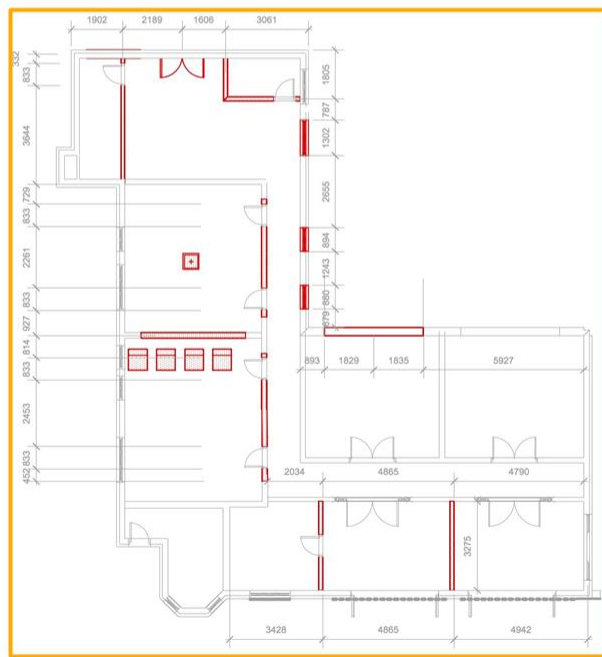
None P1... Scr... 0.00° 2D...

Selection Tool: Rectangular Marquee Mode

1580 1600 1620 1640 1660 1680 1700 1720 1740 1760 1780 1800

# Data Visualisation

Demolition Viewport



Object Info

Shape Data Render

**Viewport**

Crop Visible

Update

Drawing Title: [Drawing Title]

Drawing Number: 10

Layers...

Display Planar Objects

Project Screen Objects

Classes...

Data Visualization...

Scale: 1:100

Custom Scale 1: 100.000

Object Info - Data

Shape Data Render

**Document Record Format Defaults**

Record Formats:

- Event Planning Record
- Material Take-off
- Phase**
- Phasing

Attach Record

Detach Record...

Phases:

IFC... Name:

Navigation - Saved Views

Saved View

- 003007 edit feild
- 003009 choices
- 003012 finished record
- 003020 file setup
- 003022 design layers
- 003024 classes
- 003026 file setup - variations
- 003030 phase diagram
- 003032 existing. demo
- 003034 demolition setup
- 003035a demo setup
- 003035b demo class
- 003035c select similar class
- 003035d attach record
- 003036 existing to demo
- 003038 Data Visualisation**
- 003040 data vis attributes

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

None P1... Scr... To... 0.00° 2D...

Selection Tool: Rectangular Marquee Mode

1850 1900 1950 2000 2050 2100 2150

# Data Visualisation

**Viewport Data Visualization**

Enable Data Visualization for This Viewport

Settings: <Active Settings> Save... Manage...

Record: Phasing <applied>  Include Special Records

Record Field: Phases

**Operation**

Modify:

- Attribute Ranges
- Attribute Values

Include Components Of:

- Groups
- Symbols

**Options**

**Values List:**

Record Field Value	Apply	Fill	Pen	Line	Thickness
Demolition	<input checked="" type="checkbox"/>				0.25
Existing	<input type="checkbox"/>				0.05
New build	<input type="checkbox"/>				0.25

Edit...

Draw All Other Objects: Grayed

Cancel OK

**Object Info - Data**

Shape Data Render

**Document Record Format Defaults**

Record Formats:

- Event Planning Record
- Material Take-off
- Phase**
- Phasing

Attach Record

Detach Record...

Phases:

IFC...

Name:

**Navigation - Saved Views**

Saved View

- 003032 existing. demo
- 003034 demolition setup
- 003035a demo setup
- 003035b demo class
- 003035c select similar class
- 003035d attach record
- 003036 existing to demo
- 003038 Data Visualisation
- 003040 data vis attributes**
- 003045 dataVis viewports
- 003045 dataVis viewports-2
- 003045 dataVis viewports-2a
- 003045 dataVis viewports-3
- 003050 Phase 2 summary
- 003060 Phase 3 title
- 003500 firestation
- 003505 conceptual gallery

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

**Pan Tool**

None P1... Scr... To... 0.00° 2D...

2950 3000 3050 3100 3150 3200 3250 3300 3350 3400 3450 3500 3550

400 450 500 550 600 650 700 750 800 850

Full-screen Snip

### Data Visualisation

1 Existing  
Scale: 1:100

2 Demolition  
Scale: 1:100

3 Existing with Demo  
Scale: 1:100

4 New Build  
Scale: 1:100

Record Field Value	Apply	Fill	Pen	Line	Thickness
Demolition					0.50
Existing					0.35
New build					0.25

Record Field Value	Apply	Fill	Pen	Line	Thickness
Demolition					0.50
Existing	✓				0.35
New build					0.25

Record Field Value	Apply	Fill	Pen	Line	Thickness
Demolition					0.50
Existing	✓				0.35
New build					0.25

Record Field Value	Apply	Fill	Pen	Line	Thickness
Demolition					0.50
Existing	✓				0.35
New build					0.25

**Object Info - Data**

Shape Data Render

### Document Record Format Defaults

Record Formats:

- Event Planning Record
- Material Take-off
- Phase**
- Phasing

Attach Record

Detach Record...

Phases:

IFC... Name:

### Navigation - Saved Views

Saved View

- 003032 existing. demo
- 003034 demolition setup
- 003035a demo setup
- 003035b demo class
- 003035c select similar class
- 003035d attach record
- 003036 existing to demo
- 003038 Data Visualisation
- 003040 data vis attributes
- 003045 dataVis viewports**
- 003045 dataVis viewports-2
- 003045 dataVis viewports-2a
- 003045 dataVis viewports-3
- 003050 Phase 2 summary
- 003060 Phase 3 title
- 003500 firestation
- 003505 conceptual gallery

Basic

Zoom Tool: Marquee Mode

2200 2250 2300 2350 2400 2450 2500 2550 2600 2650 2700 2750

0.00° 2D...

# Summary of Phase 2

Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

File setup

Design Layers

- GF-Ceiling
- GF-Ceiling-Existing
- GF-Shell
- GF-Shell-Existing
- GF-Core
- GF-Core-Existing
- GF-Floor
- GF-Floor-Existing
- GF-Slab
- GF-Slab-Existing

Classes

- xx-Demolition

"Assume all construction is new unless stated otherwise"

File Setup

Resource Manager

Record Formats

Subscription Libraries

Open Files

- CUB2 Presentation v2017.vwx
- CUB4\_Presentation File\_Part2.vwx
- Untitled 1

Favorites

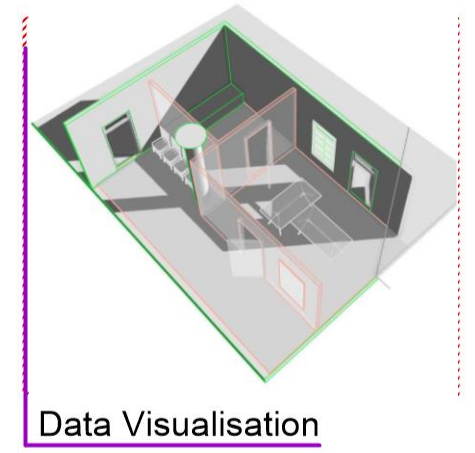
- CAT.01.BACKBARTILES.vwx
- CAT.01.CAFE SEATING.vwx
- CAT.06.LIGHTING 2017\_06\_01\_GZ.vwx
- CAT.06.LIGHTING.vwx
- SB\_Casework
- METRIC CASEWORK.vwx
- \_RECORDS

01 Starbucks Schedule General

Material Take-off

Phasing

Record Format



Object Info - Data

Shape Data Render

Document Record Format Defaults

Record Formats:

- Event Planning Record
- Material Take-off
- Phase
- Phasing

Attach Record

Detach Record...

Phases:

IFC...

Name:

Navigation - Saved Views

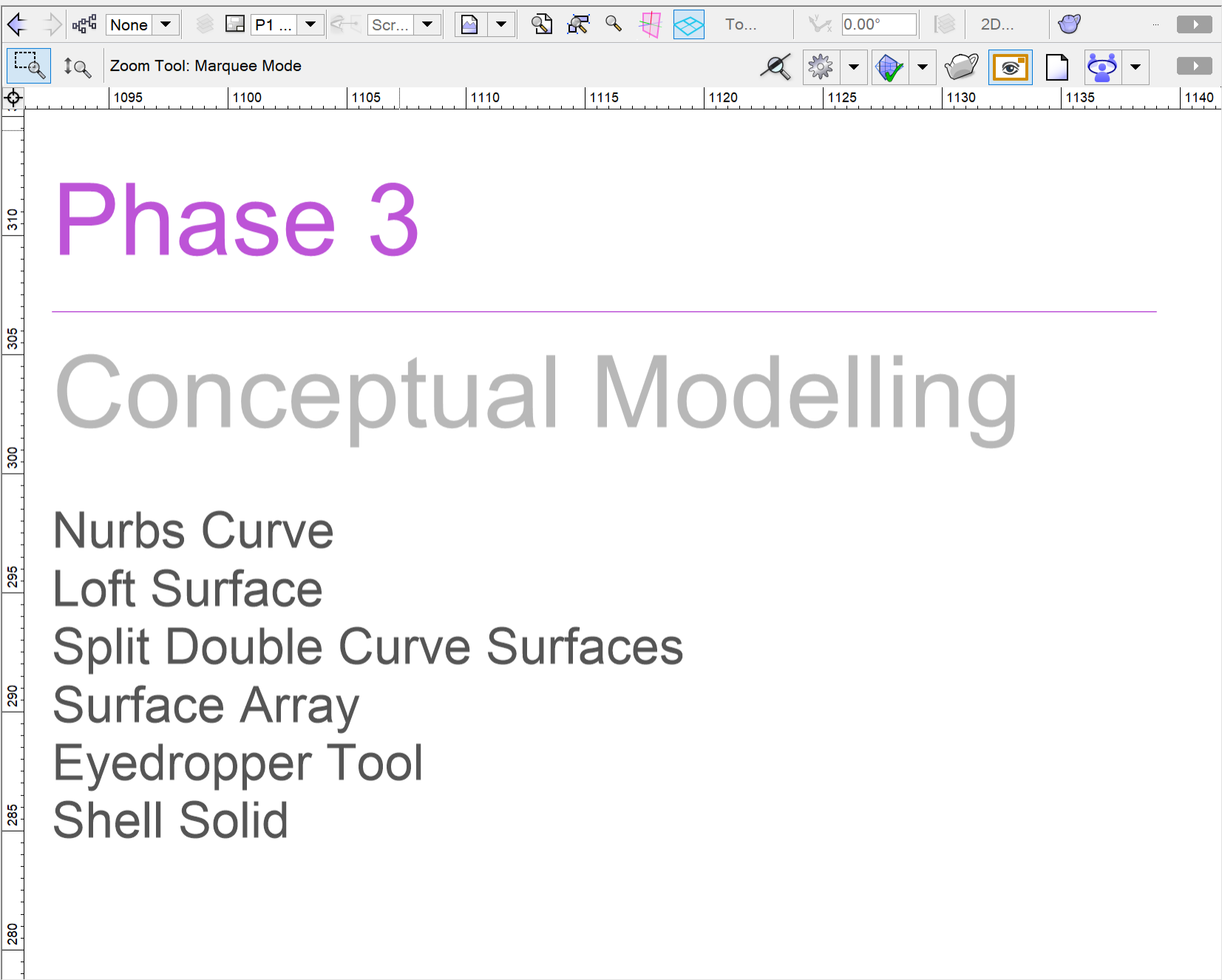
Saved View

- 003032 existing. demo
- 003034 demolition setup
- 003035a demo setup
- 003035b demo class
- 003035c select similar class
- 003035d attach record
- 003036 existing to demo
- 003038 Data Visualisation
- 003040 data vis attributes
- 003045 dataVis viewports
- 003045 dataVis viewports-2
- 003045 dataVis viewports-2a
- 003045 dataVis viewports-3
- 003050 Phase 2 summary
- 003060 Phase 3 title
- 003500 firestation
- 003505 conceptual gallery

**Basic**

**Tool Sets**

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker



**Object Info - Data**

Shape Data Render

**Document Record Format Defaults**

Record Formats:

- Event Planning Record
- Material Take-off
- Phase**
- Phasing

Attach Record

Detach Record...

Phases:

IFC...

Name:

**Navigation - Saved Views**

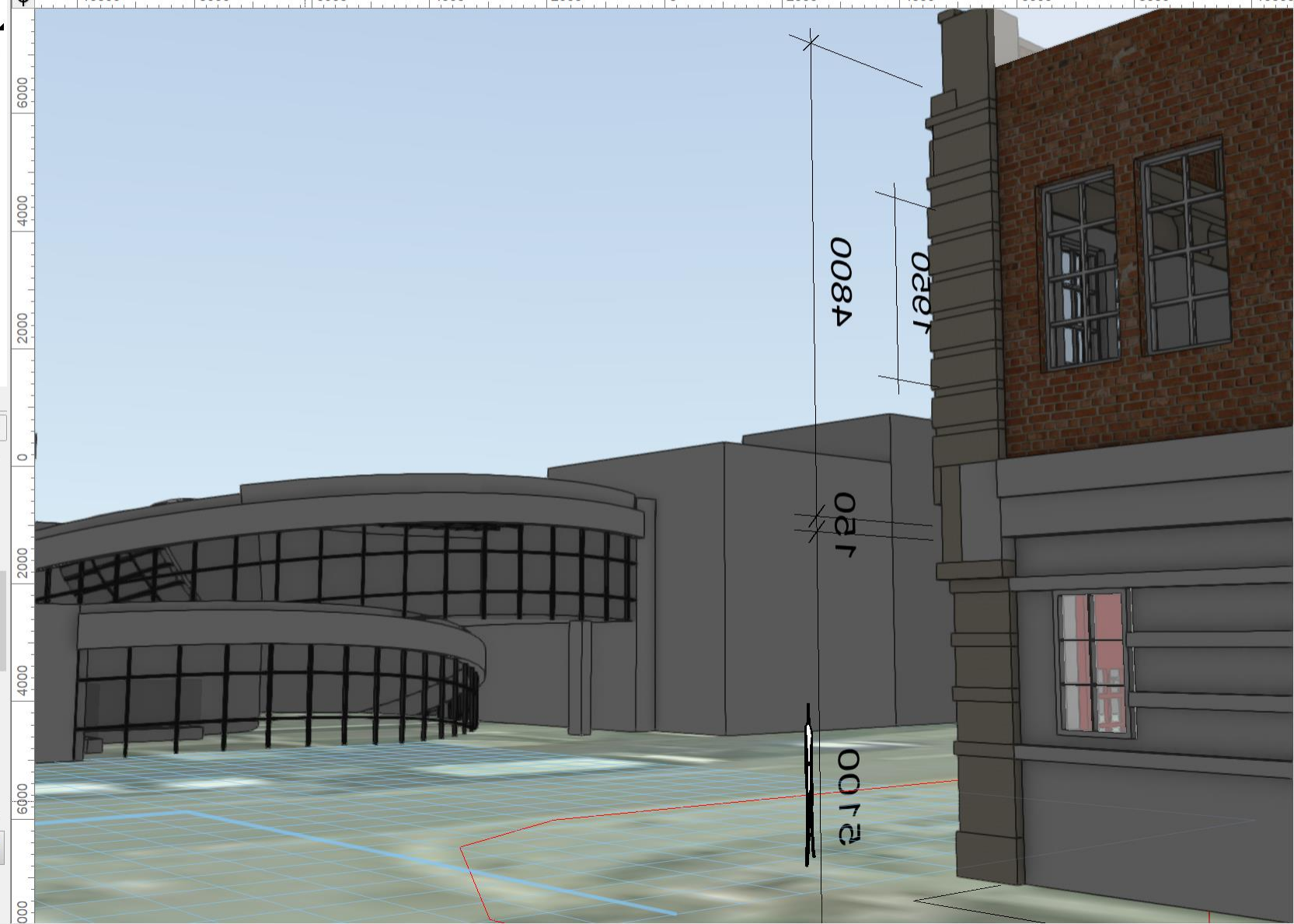
Saved View

- 003032 existing. demo
- 003034 demolition setup
- 003035a demo setup
- 003035b demo class
- 003035c select similar class
- 003035d attach record
- 003036 existing to demo
- 003038 Data Visualisation
- 003040 data vis attributes
- 003045 dataVis viewports
- 003045 dataVis viewports-2
- 003045 dataVis viewports-2a
- 003045 dataVis viewports-3
- 003050 Phase 2 summary
- 003060 Phase 3 title**
- 003500 firestation
- 003505 conceptual gallery



Basic

Zoom Tool: Marquee Mode



Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Object Info - Data

Shape Data Render

Document Record Format Defaults

Record Formats:

- Event Planning Record
- Material Take-off
- Phase**
- Phasing

Attach Record

Detach Record...

Phases:

IFC...

Name:

Navigation - Saved Views

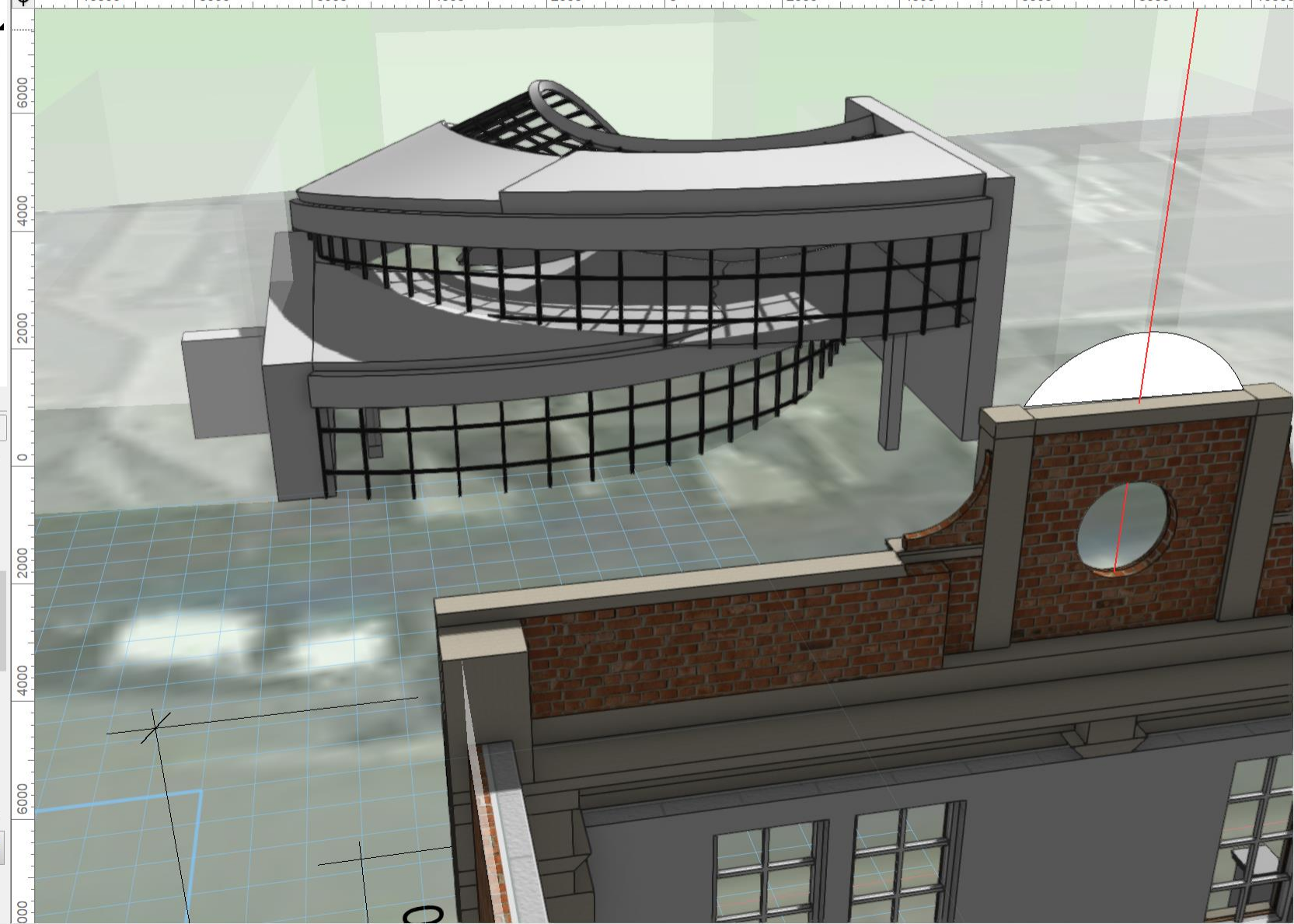
Saved View

- 003036 existing to demo
- 003038 Data Visualisation
- 003040 data vis attributes
- 003045 dataVis viewports
- 003045 dataVis viewports-2
- 003045 dataVis viewports-2a
- 003045 dataVis viewports-3
- 003050 Phase 2 summary
- 003060 Phase 3 title
- 003500 firestation
- 003505 conceptual gallery**
- 003510 conceptual gallery
- 003515 concept top
- 003520 contrasting, art, firestation
- 003560 extrude, no fill
- 003565 draw nurbs-left, right views
- 003570 loft surface-orbit

Basic

Zoom Tool: Marquee Mode

10000 8000 6000 4000 2000 0 2000 4000 6000 8000 10000



Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Object Info - Data

Shape Data Render

Document Record Format Defaults

Record Formats:

- Event Planning Record
- Material Take-off
- Phase**
- Phasing

Attach Record

Detach Record...

Phases:

IFC...

Name:

Navigation - Saved Views

Saved View

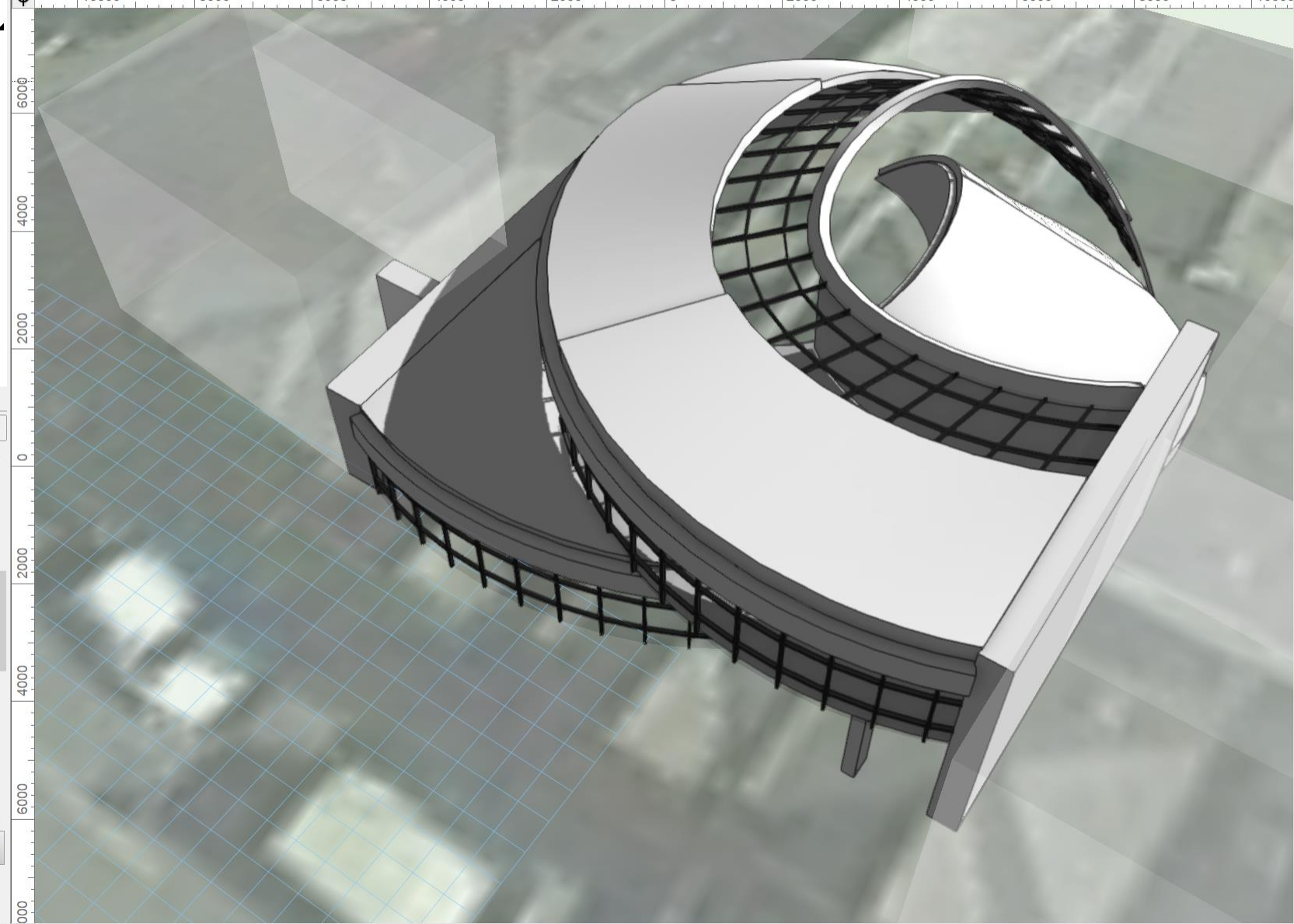
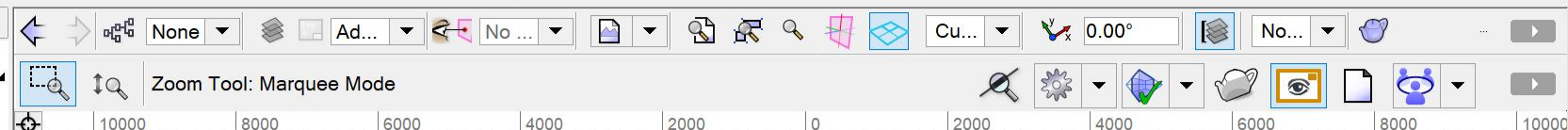
- 003036 existing to demo
- 003038 Data Visualisation
- 003040 data vis attributes
- 003045 dataVis viewports
- 003045 dataVis viewports-2
- 003045 dataVis viewports-2a
- 003045 dataVis viewports-3
- 003050 Phase 2 summary
- 003060 Phase 3 title
- 003500 firestation
- 003505 conceptual gallery
- 003510 conceptual gallery**
- 003515 concept top
- 003520 contrasting, art, firestation
- 003560 extrude, no fill
- 003565 draw nurbs-left, right views
- 003570 loft surface-orbit

Basic



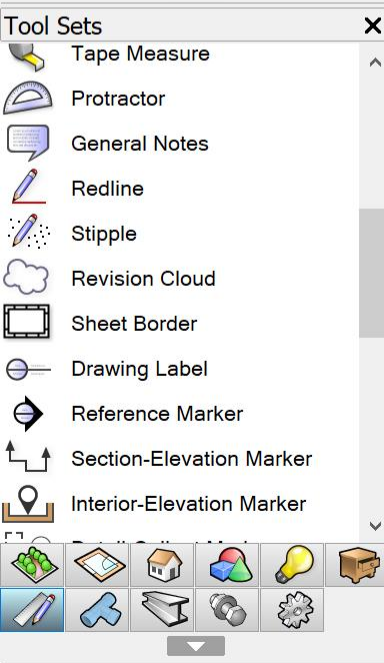
Zoom Tool: Marquee Mode

10000 8000 6000 4000 2000 0 2000 4000 6000 8000 10000



Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker



Object Info - Data

Shape Data Render

Document Record Format Defaults

Record Formats:

- Event Planning Record
- Material Take-off
- Phase**
- Phasing

Attach Record

Detach Record...

Phases:

IFC...

Name:

Navigation - Saved Views



Saved View

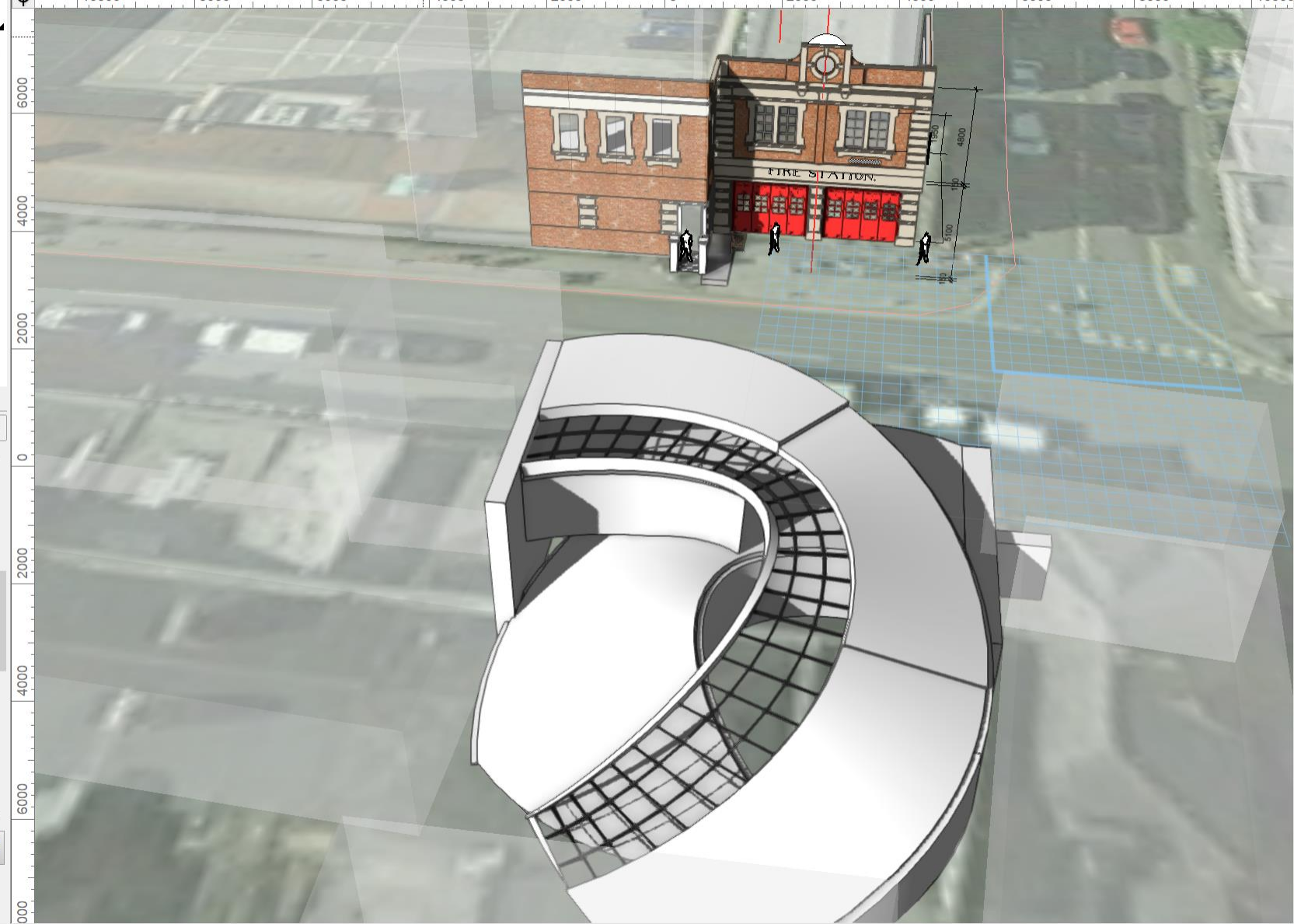
- 003036 existing to demo
- 003038 Data Visualisation
- 003040 data vis attributes
- 003045 dataVis viewports
- 003045 dataVis viewports-2
- 003045 dataVis viewports-2a
- 003045 dataVis viewports-3
- 003050 Phase 2 summary
- 003060 Phase 3 title
- 003500 firestation
- 003505 conceptual gallery
- 003510 conceptual gallery
- 003515 concept top**
- 003520 contrasting, art, firestation
- 003560 extrude, no fill
- 003565 draw nurbs-left, right views
- 003570 loft surface-orbit

Basic

Navigation and tool options: None, Ad..., No..., Cu..., 0.00°, No...

Zoom Tool: Marquee Mode

Scale: 10000 8000 6000 4000 2000 0 2000 4000 6000 8000 10000



Tool Sets

- Tape Measure
- Protractor
- General Notes
- Redline
- Stipple
- Revision Cloud
- Sheet Border
- Drawing Label
- Reference Marker
- Section-Elevation Marker
- Interior-Elevation Marker

Object Info - Data

Shape Data Render

Document Record Format Defaults

Record Formats:

- Event Planning Record
- Material Take-off
- Phase**
- Phasing

Attach Record

Detach Record...

Phases:

IFC...

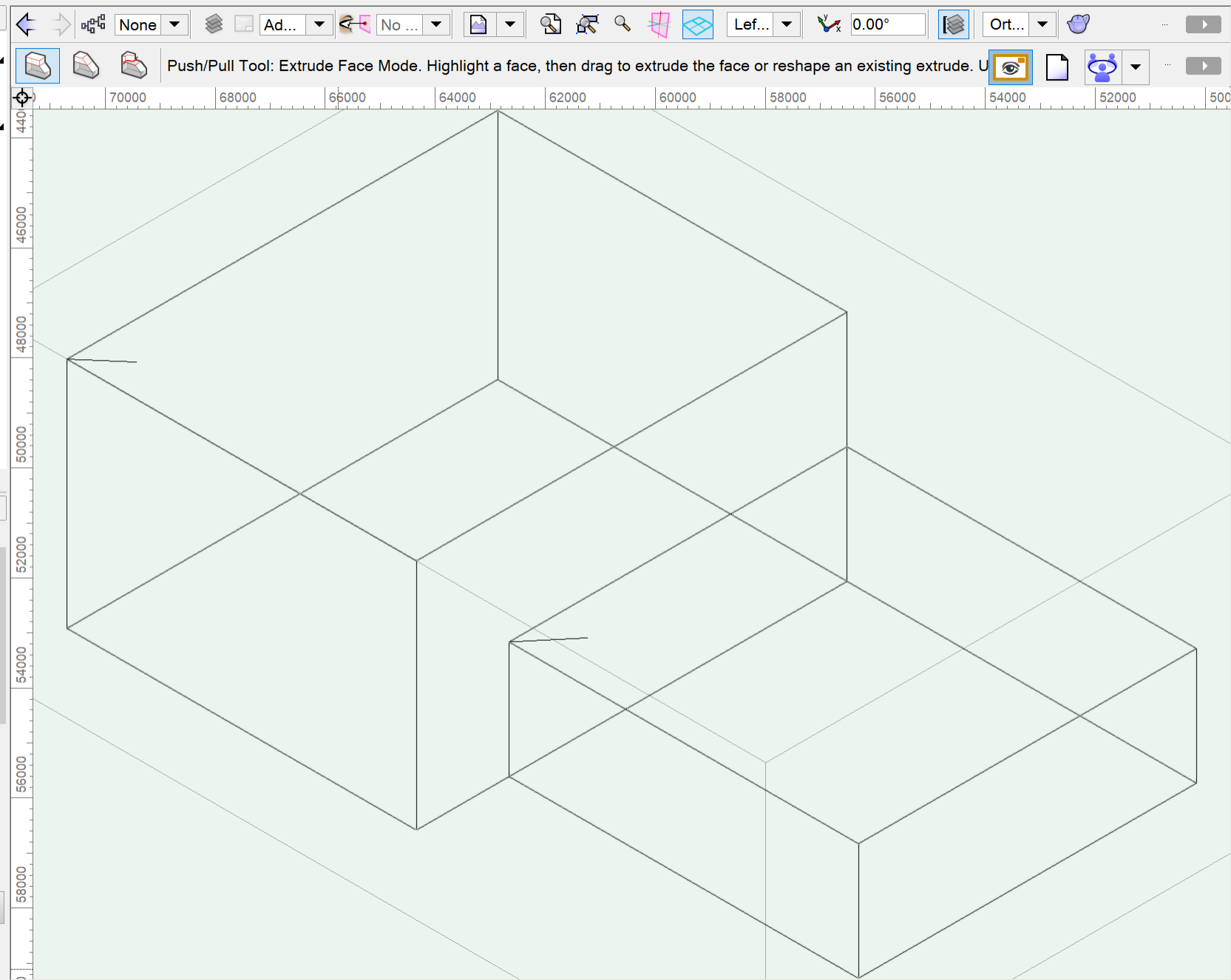
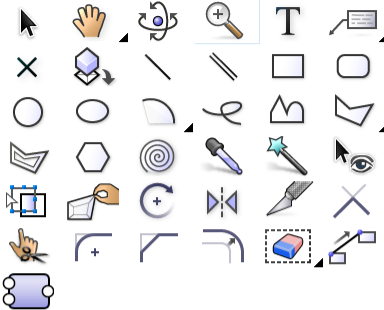
Name:

Navigation - Saved Views

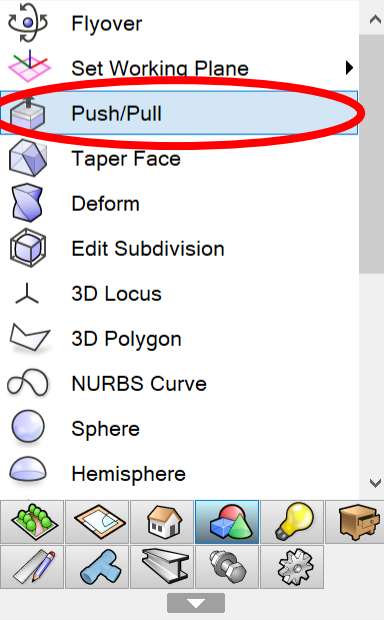
Saved View

- 003045 dataVis viewports-2
- 003045 dataVis viewports-2a
- 003045 dataVis viewports-3
- 003050 Phase 2 summary
- 003060 Phase 3 title
- 003500 firestation
- 003505 conceptual gallery
- 003510 conceptual gallery
- 003515 concept top
- 003520 contrasting, art, firestation**
- 003560 extrude, no fill
- 003565 draw nurbs-left, right views
- 003570 loft surface-orbit
- 003575 surface view
- 003577 split surfaces
- 003580 surface array
- 003585 show array

Basic



Tool Sets



Push/Pull Tool: Extrude Face Mode. Highlight a face, then drag to extrude the face or reshape an existing extrude. Use the eye icon to toggle visibility.

Object Info - Data

Shape Data Render

Document Record Format Defaults

- Record Formats:
- Event Planning Record
  - Material Take-off
  - Phase**
  - Phasing
- Attach Record
- Detach Record...

Phases:

IFC...  
Name:

Navigation - Saved Views

- Saved View
- 003045 dataVis viewports-2
  - 003045 dataVis viewports-2a
  - 003045 dataVis viewports-3
  - 003050 Phase 2 summary
  - 003060 Phase 3 title
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  - 003505 conceptual gallery
  - 003510 conceptual gallery
  - 003515 concept top
  - 003520 contrasting, art, firestation
  - 003560 extrude, no fill**
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  - 003577 split surfaces
  - 003580 surface array
  - 003585 show array

Basic

NURBS Curve Tool: Interpolation Point Mode

Tool Sets

- Flyover
- Set Working Plane
- Push/Pull
- Taper Face
- Deform
- Edit Subdivision
- 3D Locus
- 3D Polygon
- NURBS Curve**
- Sphere
- Hemisphere

Object Info - Data

Shape Data Render

Document Record Format Defaults

Record Formats:

- Event Planning Record
- Material Take-off
- Phase**
- Phasing

Attach Record

Detach Record...

Phases:

IFC...

Name:

Navigation - Saved Views

Saved View

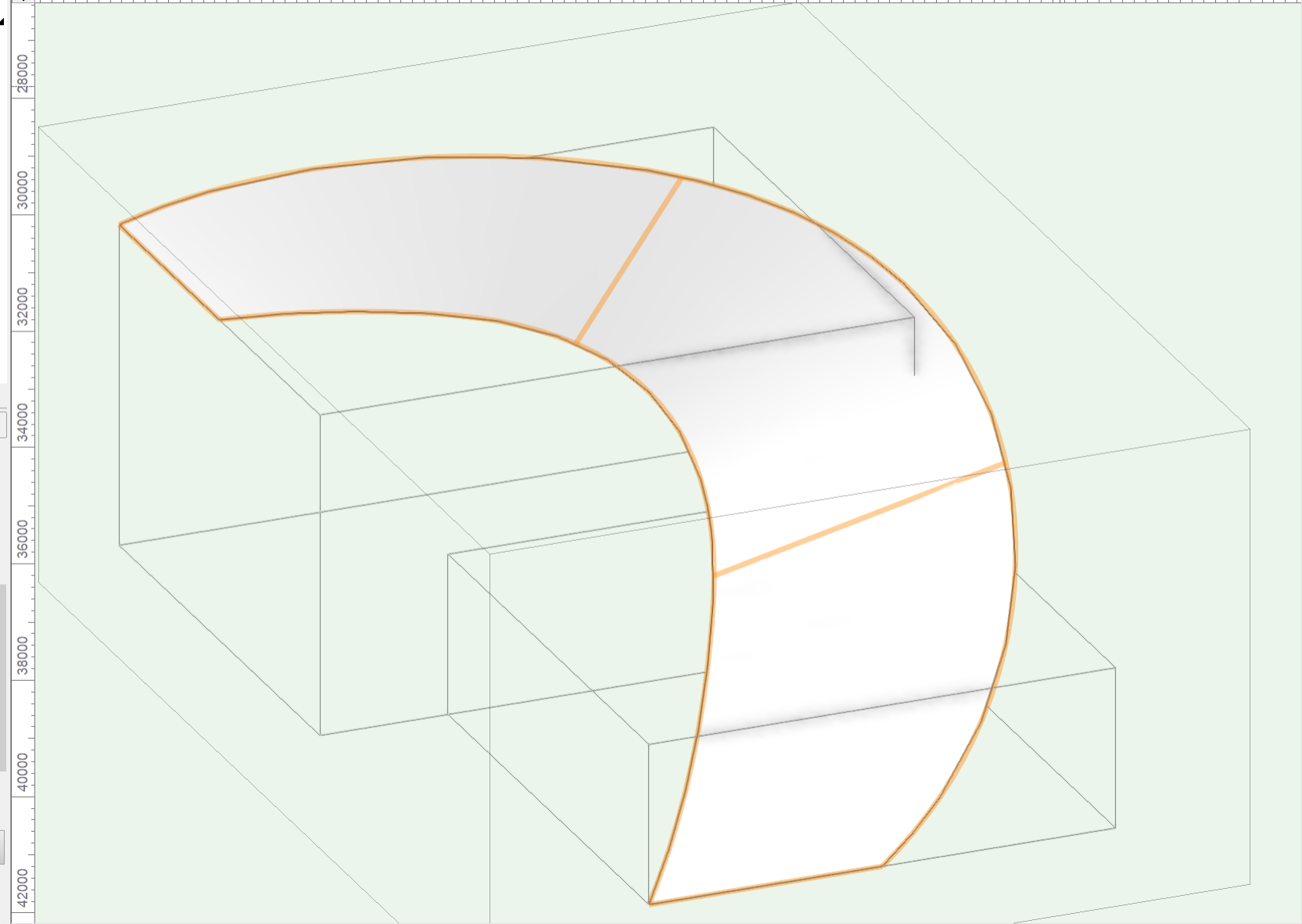
- 003045 dataVis viewports-2
- 003045 dataVis viewports-2a
- 003045 dataVis viewports-3
- 003050 Phase 2 summary
- 003060 Phase 3 title
- 003500 firestation
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- 003570 loft surface-orbit
- 003575 surface view
- 003577 split surfaces
- 003580 surface array
- 003585 show array

Basic

None | Ad... | No ... | Cu... | 0.00° | Ort... |

Loft Surface Tool: No Rail Mode. Select the profile curves.

46000 44000 42000 40000 38000 36000 34000 32000 30000 28000 26000



Tool Sets

- 3D Polygon
- NURBS Curve
- Sphere
- Hemisphere
- Cone
- Fillet Edge
- Chamfer Edge
- Shell Solid
- Loft Surface**
- Extract
- Create Contours

Object Info - Data

Shape Data Render

**NURBS Surface**

Record Formats:

Attach Record

Detach Record...

IFC...

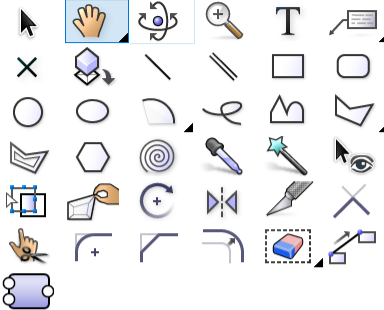
Name:

Navigation - Saved Views

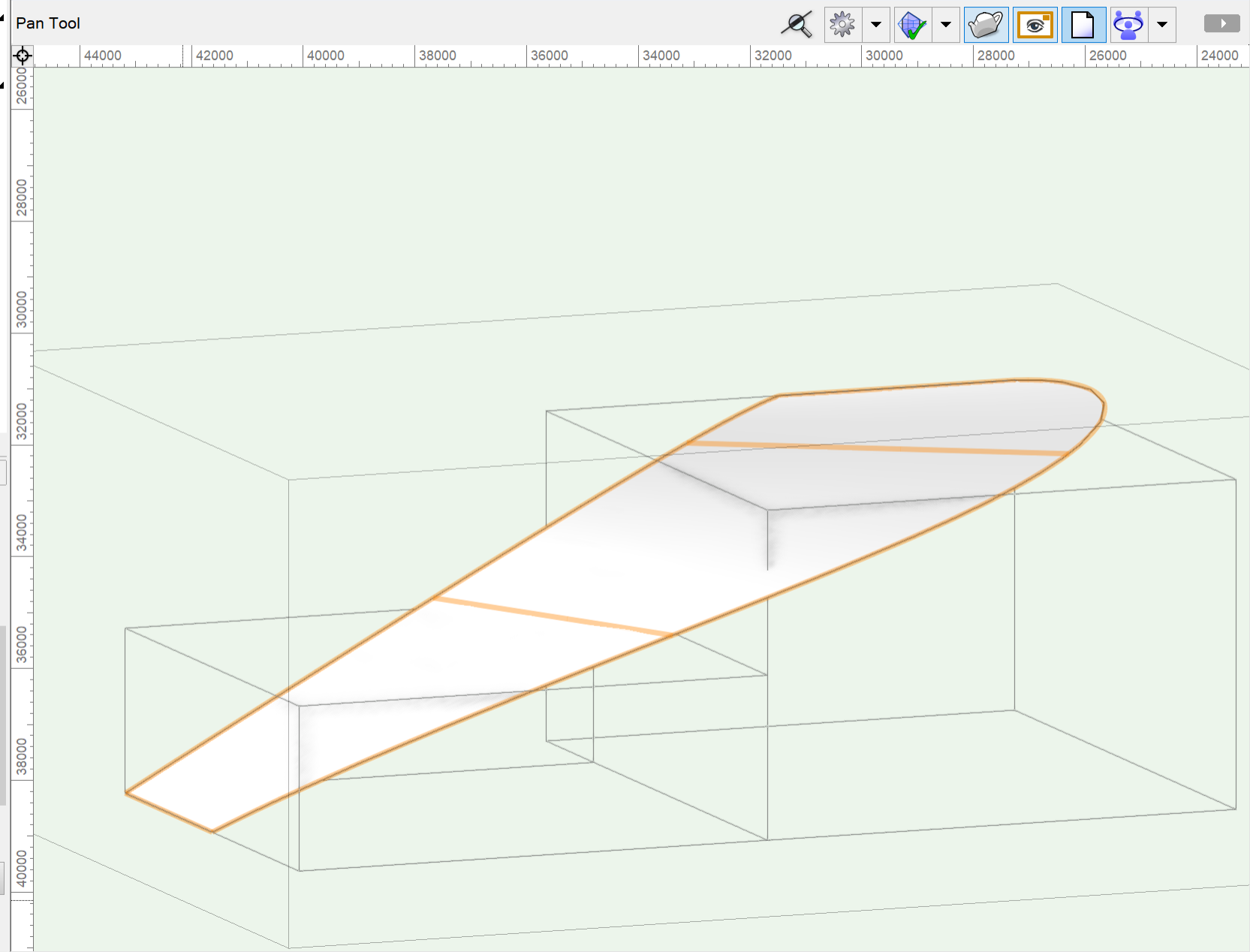
Saved View

- 003045 dataVis viewports-2
- 003045 dataVis viewports-2a
- 003045 dataVis viewports-3
- 003050 Phase 2 summary
- 003060 Phase 3 title
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- 003580 surface array
- 003585 show array

Basic



Navigation and tool options including 'Pan Tool', coordinate fields (44000 to 24000), and view manipulation icons.



Tool Sets

- 3D Polygon
- NURBS Curve
- Sphere
- Hemisphere
- Cone
- Fillet Edge
- Chamfer Edge
- Shell Solid
- Loft Surface
- Extract
- Create Contours

Object Info - Data

Shape Data Render

NURBS Surface

Record Formats:

Attach Record

Detach Record...

IFC... Name:

Navigation - Saved Views

- Saved View
- 003045 dataVis viewports-2
  - 003045 dataVis viewports-2a
  - 003045 dataVis viewports-3
  - 003050 Phase 2 summary
  - 003060 Phase 3 title
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  - 003510 conceptual gallery
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  - 003570 loft surface-orbit**
  - 003575 surface view
  - 003577 split surfaces
  - 003580 surface array
  - 003585 show array

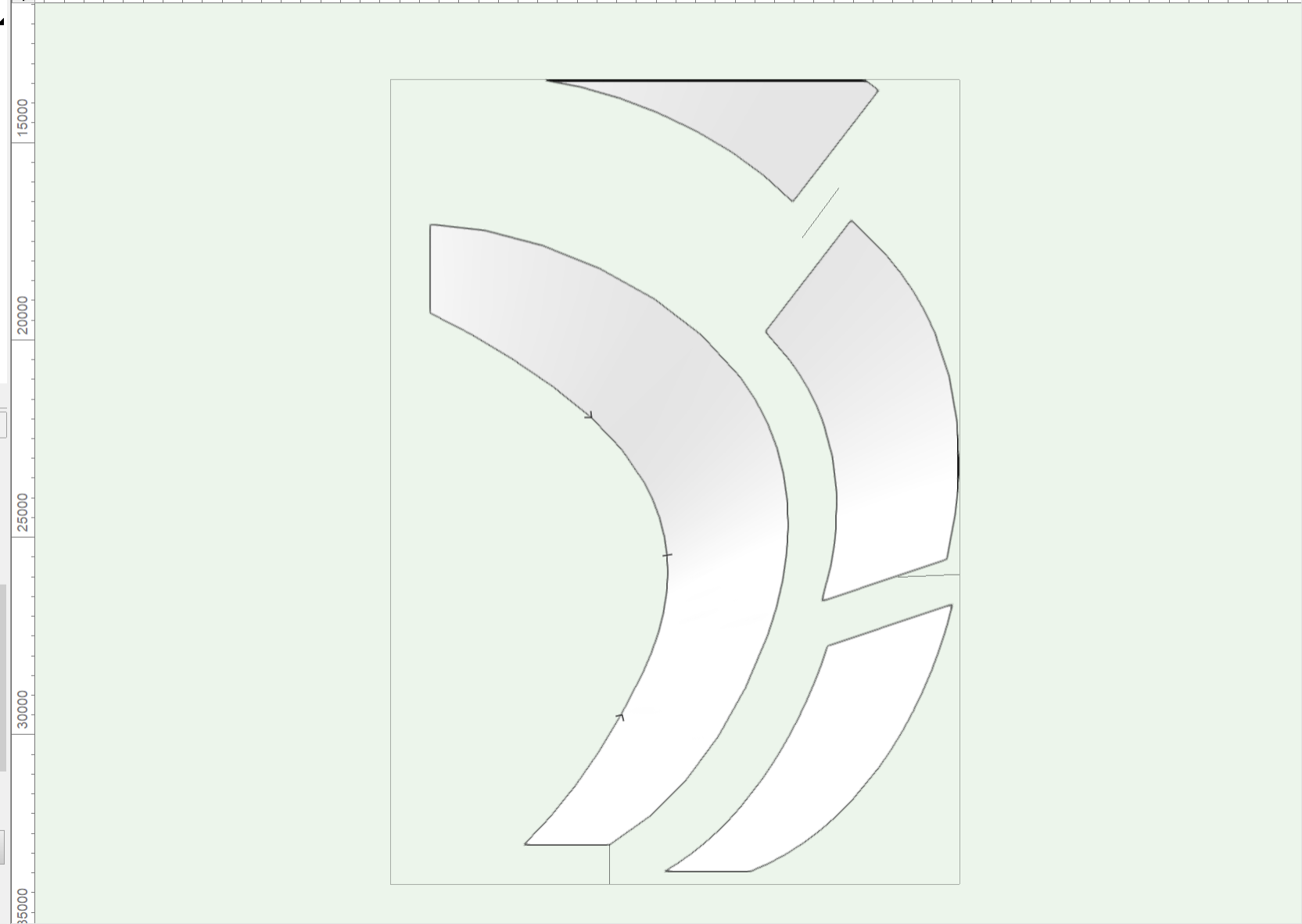


Basic



None | Ad... | Scr... | Top | 0.00° | Ort... | Split Tool: Point Split Mode. Click to split at a specified point.

70000 65000 60000 55000 50000 45000



Tool Sets

- 3D Polygon
- NURBS Curve
- Sphere
- Hemisphere
- Cone
- Fillet Edge
- Chamfer Edge
- Shell Solid
- Loft Surface
- Extract
- Create Contours

Object Info - Data

Shape Data Render

Document Record Format Defaults

Record Formats:

- Event Planning Record
- Material Take-off
- Phase**
- Phasing

Attach Record

Detach Record...

Phases:

IFC... Name:

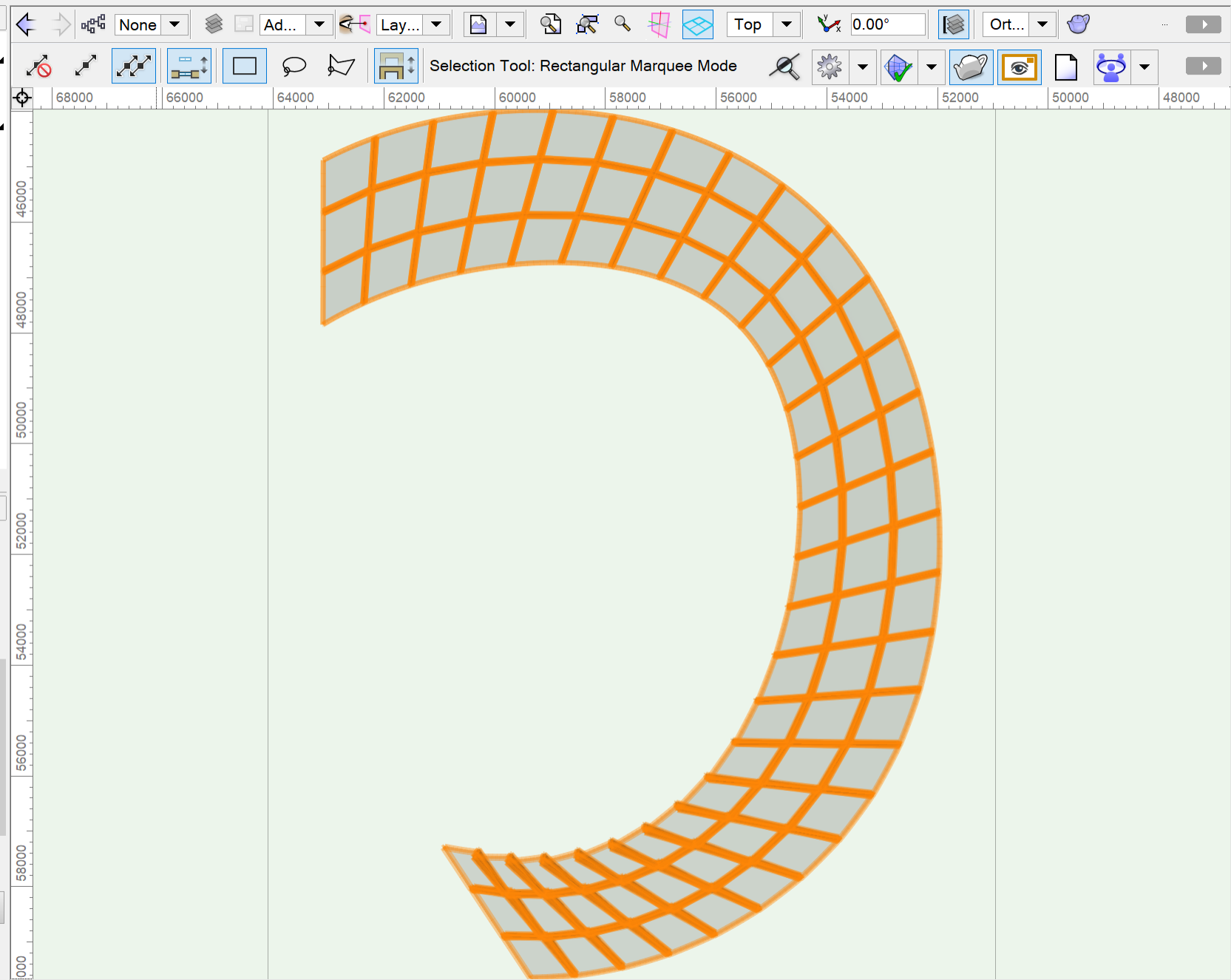
Navigation - Saved Views

- Saved View
- 003045 dataVis viewports-2
  - 003045 dataVis viewports-2a
  - 003045 dataVis viewports-3
  - 003050 Phase 2 summary
  - 003060 Phase 3 title
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  - 003575 surface view
  - 003577 split surfaces**
  - 003580 surface array
  - 003585 show array

**Basic**

**Tool Sets**

- 3D Polygon
- NURBS Curve
- Sphere
- Hemisphere
- Cone
- Fillet Edge
- Chamfer Edge
- Shell Solid
- Loft Surface
- Extract
- Create Contours



Shape | Data | Render

**Surface Array**

Class: advanced mod class

Layer: Advanced Modelling

Origin X' Factor: 0

Origin Y' Factor: 0

Pattern Rotation: 0.00°

Repetition Mode X': Fixed Distance

No. of Repetitions X': 2.7774047

Fixed Distance X': 1000

Offset X' Factor: 1

Shift X' Factor: 0

Repetition Mode Y': Fixed Distance

No. of Repetitions Y': 26.86189142

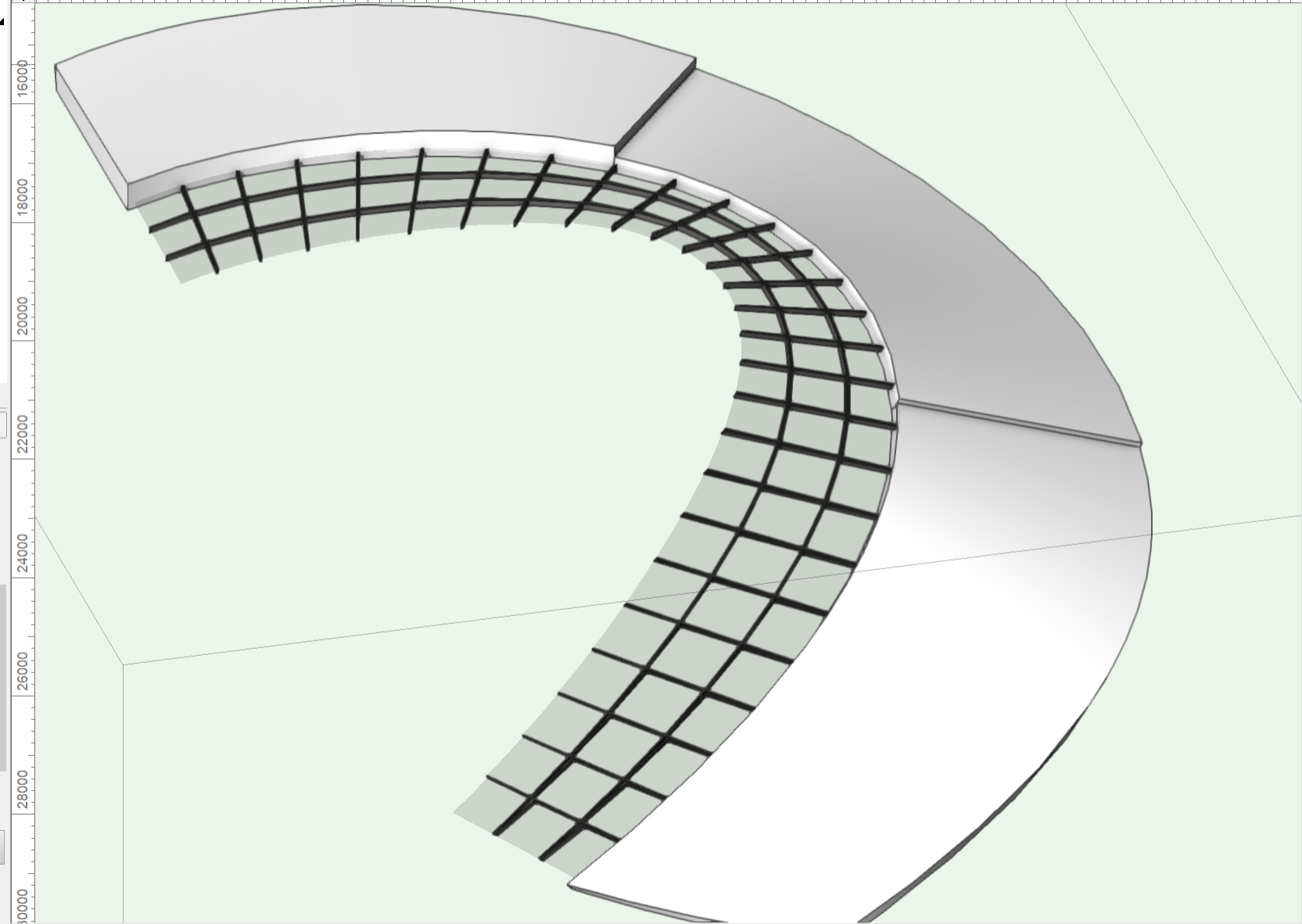
- Saved View
- 003560 extrude, no fill
  - 003565 draw nurbs-left, right views
  - 003570 loft surface-orbit
  - 003575 surface view
  - 003577 split surfaces
  - 003580 surface array**
  - 003585 show array
  - 003590 eyedrop
  - 003600 move to place
  - 003605 shell solid 200
  - 003606
  - 003607x contrasting, art, firestation-2
  - 003609 finished
  - 003610 art finished
  - 005000 art renders
  - 005001 phase 3 summary
  - 005003 Full Summary

Basic



Pan Tool | None | Ad... | No... | Cu... | 0.00° | Ort... | [Navigation icons]

40000 38000 36000 34000 32000 30000 28000 26000 24000 22000 20000



Tool Sets

- 3D Polygon
- NURBS Curve
- Sphere
- Hemisphere
- Cone
- Fillet Edge
- Chamfer Edge
- Shell Solid
- Loft Surface
- Extract
- Create Contours

Object Info - Shape

Shape | Data | Render

Surface Array

Class: advanced mod class

Layer: Advanced Modelling

Origin X' Factor: 0

Origin Y' Factor: 0

Pattern Rotation: 0.00°

Repetition Mode X': Fixed Distance

No. of Repetitions X': 2.7774047

Fixed Distance X': 1000

Offset X' Factor: 1

Shift X' Factor: 0

Repetition Mode Y': Fixed Distance

No. of Repetitions Y': 26.86189142

IFC... Name:

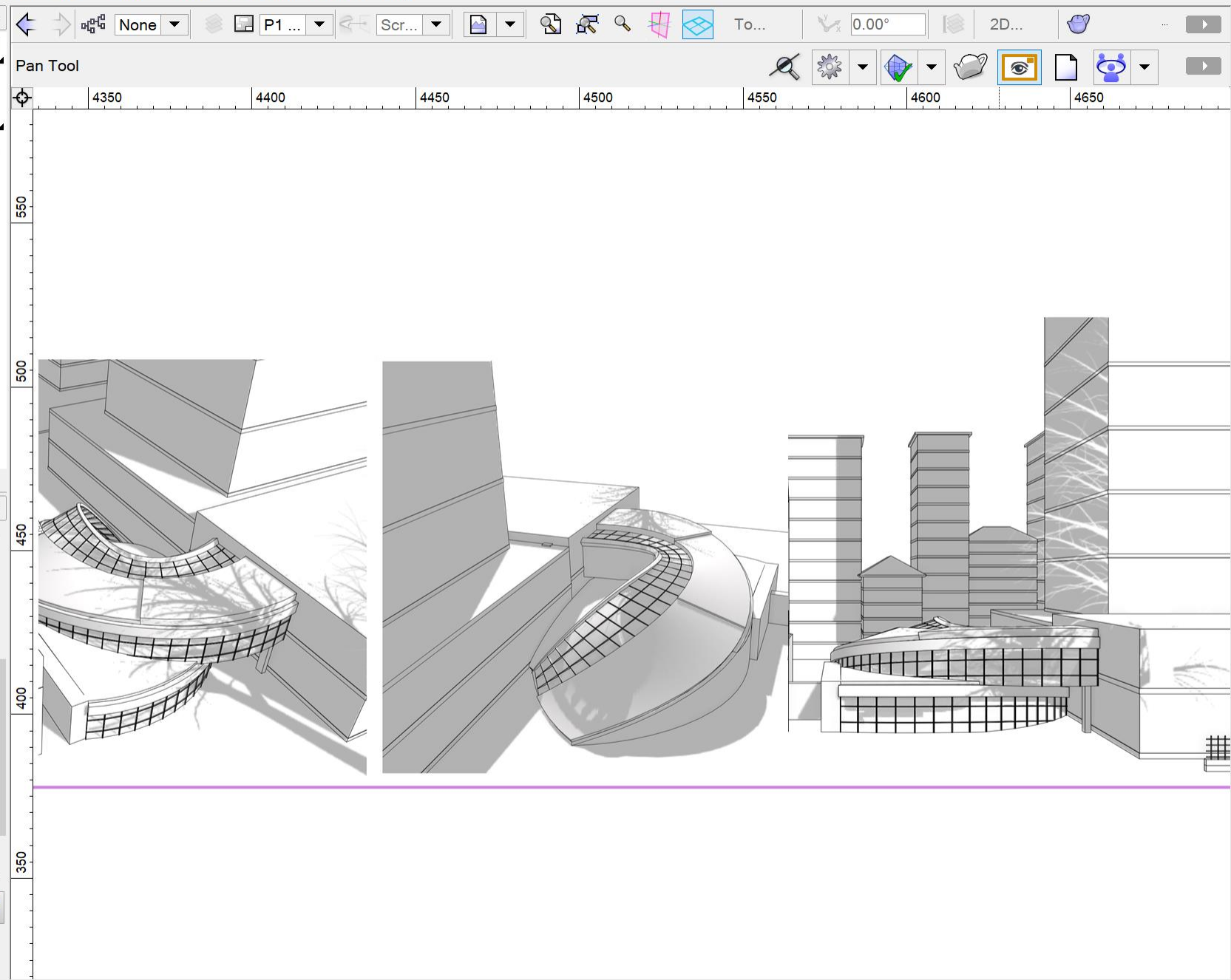
Navigation - Saved Views

- Saved View
- 003560 extrude, no fill
  - 003565 draw nurbs-left, right views
  - 003570 loft surface-orbit
  - 003575 surface view
  - 003577 split surfaces
  - 003580 surface array
  - 003585 show array
  - 003590 eyedrop
  - 003600 move to place**
  - 003605 shell solid 200
  - 003606
  - 003607x contrasting, art, firestation-2
  - 003609 finished
  - 003610 art finished
  - 005000 art renders
  - 005001 phase 3 summary
  - 005003 Full Summary

**Basic**

**Tool Sets**

- 3D Polygon
- NURBS Curve
- Sphere
- Hemisphere
- Cone
- Fillet Edge
- Chamfer Edge
- Shell Solid
- Loft Surface
- Extract
- Create Contours



**Object Info - Shape**

Shape | Data | Render

**No Selection**

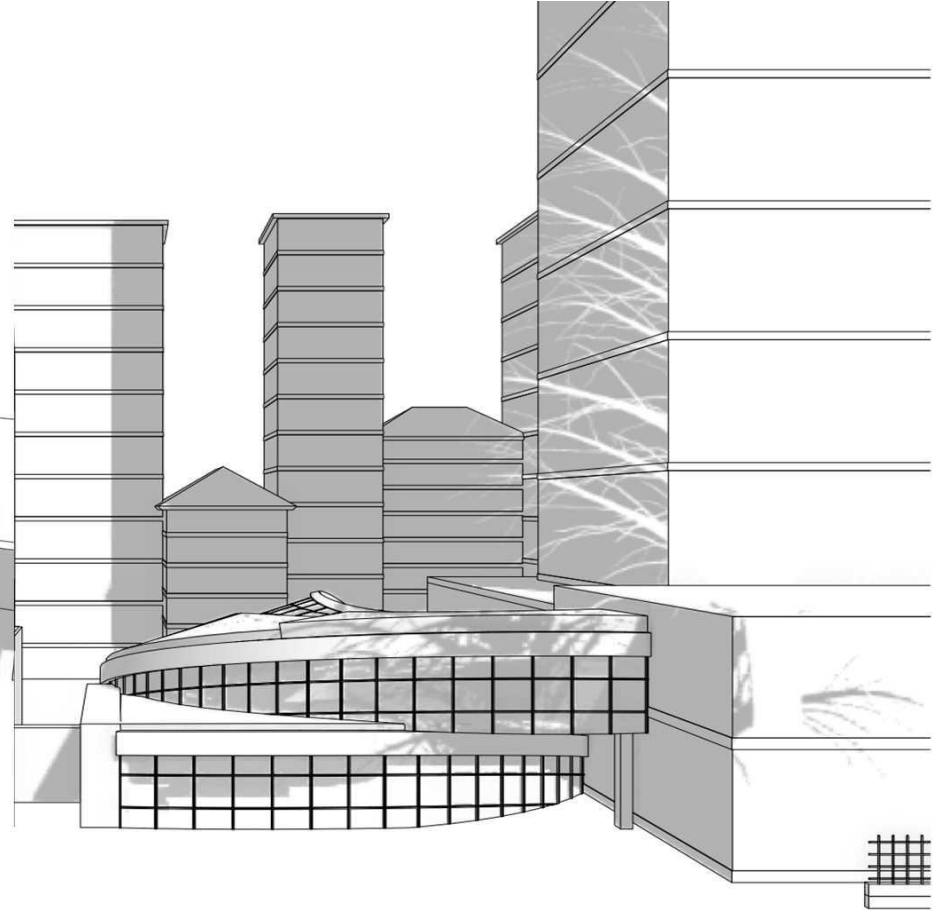
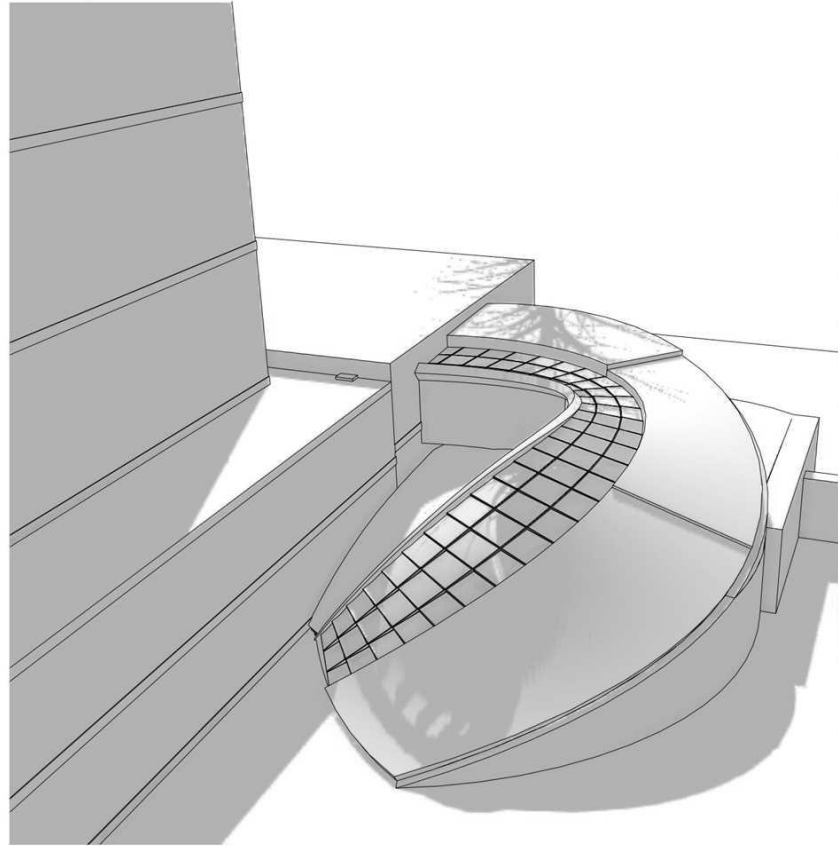
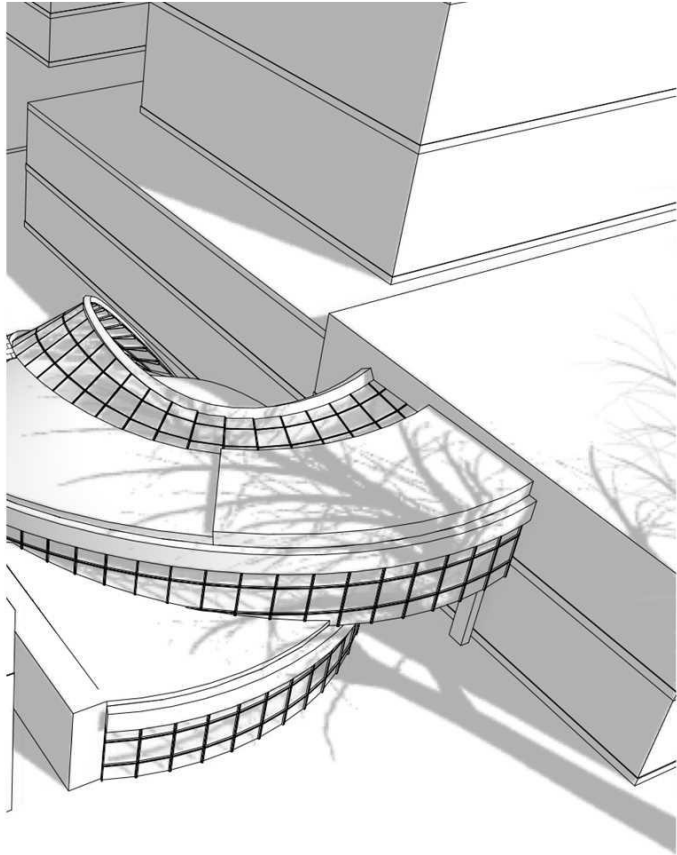
IFC...

Name:

**Navigation - Saved Views**

Saved View

- 003560 extrude, no fill
- 003565 draw nurbs-left, right views
- 003570 loft surface-orbit
- 003575 surface view
- 003577 split surfaces
- 003580 surface array
- 003585 show array
- 003590 eyedrop
- 003600 move to place
- 003605 shell solid 200
- 003606
- 003607x contrasting, art, firestation-2
- 003609 finished
- 003610 art finished
- 005000 art renders**
- 005001 phase 3 summary
- 005003 Full Summary



**Basic**

**Tool Sets**

- 3D Polygon
- NURBS Curve
- Sphere
- Hemisphere
- Cone
- Fillet Edge
- Chamfer Edge
- Shell Solid
- Loft Surface
- Extract
- Create Contours

Zoom Tool: Marquee Mode

4200 4300 4400 4500 4600 4700 4800 4900 5000 5100 5200

**Phase 1**  
Model Existing Architecture

2D Plan  
2D Elevation  
Drawing in 3D  
3D Direct Modelling  
3D Parametric Modelling

**Phase 2**  
Demolition Phasing

File Setup  
Record Format  
Data Visualisation

**Phase 3**  
New Build

Conceptual Modelling

- Nurbs Curve
- Loft Surface
- Split Curve Surfaces
- Surface Array
- Eyedropper Tool
- Shell Solid

**Object Info - Shape**

Shape | Data | Render

No Selection

IFC...

Name:

**Navigation - Saved Views**

Saved View

- 003580 surface array
- 003585 show array
- 003590 eyedrop
- 003600 move to place
- 003605 shell solid 200
- 003606
- 003607x contrasting, art, firestation-2
- 003609 finished
- 003610 art finished
- 005000 art renders
- 005001 phase 3 summary
- 005003 Full Summary
- 005005 thank you
- zz 1 street view
- zz 2 street veiw
- zz 4 view images and gf existing

**Basic**

**Tool Sets**

- 3D Polygon
- NURBS Curve
- Sphere
- Hemisphere
- Cone
- Fillet Edge
- Chamfer Edge
- Shell Solid
- Loft Surface
- Extract
- Create Contours

Selection Tool: Rectangular Marquee Mode

620 630 640 650 660 670 680 690 700

410 400 390 380 370 360 350

BIM in Practice  
Exemplar Project

# Thank You

[samit.patel@cadventure.co.uk](mailto:samit.patel@cadventure.co.uk)

**No Selection**

Saved View

- 003580 surface array
- 003585 show array
- 003590 eyedrop
- 003600 move to place
- 003605 shell solid 200
- 003606
- 003607x contrasting, art, firestation-2
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