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Appendix 3 CIC BIM User Guide for Preparation of Statutory Plan Submissions

Revit

December 2020

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Whilst reasonable efforts have been made to ensure the accuracy of the information contained in this publication (Reference Materials), the CIC nevertheless encourages readers to seek appropriate independent advice from their professional advisers where possible. Readers should not treat or rely on this publication (Reference Materials) as a substitute for such professional advice.

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Preface

The Construction Industry Council (CIC) is committed to seeking continuous improvement in all aspects of the construction industry in Hong Kong. To achieve this aim, the CIC forms Committees, Task Forces and other forums to review specific areas of work with the intention of producing Alerts, Reference Materials, Guidelines and Codes of Conduct to assist participants in the industry to strive for excellence. The CIC appreciates that some improvements and practices can be implemented immediately whilst others may take more time for implementation. It is for this reason that four separate categories of publication have been adopted, the purposes of which are as follows:

Alerts The Alerts are reminders in the form of brief leaflets produced quickly to draw the immediate attention of relevant stakeholders to the need to follow some good practices or to implement some preventive measures in relation to the construction industry. Reference The Reference Materials are standards or methodologies generally adopted and regarded by the industry as good Materials practices. The CIC recommends the adoption of the Reference Materials by industry stakeholders where appropriate. Guidelines The Guidelines provide information and guidance on particular topics relevant to the construction industry. The CIC expects all industry stakeholders to adopt the recommendations set out in the Guidelines where applicable. Codes of The Codes of Conduct set out the principles that all relevant industry participants should follow. Under the Construction Conduct Industry Council (Cap 587), the CIC is tasked to formulate codes of conduct and enforce such codes. The CIC may take necessary actions to ensure compliance with the codes.

If you have read this publication, we encourage you to share your feedback with us. Please take a moment to fill out the Feedback Form attached to this publication in order that we can further enhance it for the benefit of all concerned. With our joint efforts, we believe our construction industry will develop further and will continue to prosper for years to come.

Foreword

I am glad to see the release of CIC BIM User Guide for Preparation of Statutory Plan Submissions Revit (December 2020). This software specific user guide shall be read in conjunction with the CIC BIM Standards for Preparation of Statutory Plan Submissions (December 2020).

This software specific user guide is only provided to demonstrate the feasibility of drawings generation with the Standards.

With the software specific user guides which contains step by step procedures of modelling, BIM users can easily apply the templates for the generation of statutory plan submission drawings.

Feedback on the CIC BIM User Guide for Preparation of Statutory Plan Submissions Revit (December 2020) from practitioners subsequent to the issuance of this publication will be considered in future revisions.

On behalf of the CIC, I would like to thank everyone who has contributed to producing this CIC BIM User Guide for Preparation of Statutory Plan Submissions Revit (December 2020), in particular to the members of the Task Force on BIM Standards.

Ar. Ada FUNG, BBS Chairperson Committee on Building Information Modelling Construction Industry Council December 2020

1 Hardware / System Requirements

1.1 General

Hardware / system requirement for modellings, coordination and visualisation on desktop/notebook computers and mobile devices should be determined by the BIM managers for different projects on a case by case basis. The minimum requirement varies for different applications, project sizes and operating systems.

https://www.autodesk.com/collections/architecture-engineeringconstruction/included- software

2 Revit Basics

2.1 User Interface

- Open a project or family or create either one from a template to get started. The user interface provides the tools need to work in a model. The user interface can customise the interface to support the way for different works.
- Project Browser: organise the views, schedules, and sheets of the current project.



- Properties palette: modify properties of select elements.



- Ribbon: select the tools need to design the building model.



 View Control Bar: provide options for changing the view display, including scale or visual style.

2.2 Difference of RVT, RTE, RFA files

It will eventually become necessary to save our work and share our progress with others in the model. RTEs are project template file. RVTs are working project files. Both files can be generated from Revit® projects. The difference is that the template is used when you start a new project.

RFAs are family files that can either be loaded into a project or saved externally.



2.3 Types of Family (system families, loadable families, in place family)

A group of elements with common parameters and graphical representation call family. There are three types of families in the model, system families, loadable families and in-place families.

System Families

System families are basic elements to assembly on a construction site. It can be predefined in the model, for example: wall, ceiling, beam and duct.

Loadable Families

Loadable families are families used to create non-standard or customised components such as windows, furniture, pump and chiller. It includes customisation of annotation elements, such as symbols and title blocks.

In-Place Families

In-place elements are unique elements for a specific project. It can be created in-place geometry or import to other projects to resize the shape.

2.4 Categories and Types

Category assigns the properties of a predefined family category to the component.

Types define components that apply across all types in that family.

2.5 Project base point, Grid, Levels and Work Planes

Project base point defines the origin (0,0,0) of the project coordinate system initially. Location of point can be determined by the team as a reference point. It can be used to establish a reference for measuring distances and positioning objects in relation to the model and used to position the building on site.

Gridline, annotation element help to determine whether gridlines appear in each plan view that you create for a project.

Level can act as a reference for level-based elements for story or reference plane within a building. In a section view or elevation view, it can add a level line in a model and create an associated plan view.

Work plane defines a virtual 2-dimensional surface used as the origin for viewing or for sketching in the model. It can create on Architecture / Structure / System tab.

2.6 Suggested Model Nesting Method

When you import a model that contains a linked model, links become nested. Nested linked models can be shown or hid in the host model. The nested links display according to Reference Type setting in the host model.

- 1. Overlay unload nested models into the host model, do not display in the project
- 2. Attachment load nested linked models in the host model, displays in the project

2.7 2D Views and Sheets

2D views are oriented to specific coordinates such as plan, elevation and section. Schedule and details are another way of viewing information in neither 2D nor 3D. A new view can be generated from the Create panel on



View tab of the ribbon.

Or you can right-click a view name in Project browser and select one of the Duplicate View commends.

Project Browser - RME_basic_sampl D. [0] Views (Simple) D. HVAC	X 😥 Main Electrical Distribution	Et Et	01 - Electrical Power Riser Dia 🗙
3D View Typical Room W Elbor Plan: Typical Room Section: Typical Room Section: Typical Roo Section: Typical Roo Plantbing	Open Open Sheet Close Find Referring Views Apply Template Properties Create View Template From View		
🖃 📰 Legends	Duplicate View	*	Duplicate
ABBREVIATIONS Diffuser Legend HVAC_SM_DUCT TYPE	Convert to independent view Apply Dependent Views		Duplicate with Detailing Duplicate as a Dependent
HVAC_SM_DUCT_COND/ PIPING SYMBOLS VALVE SYMBOLS Exchedules/Quantities [all Electrical Equipment Cor Level 2 HVAC Zone Sche	Save to Project as Image Delete Copy to Clipboard Rename Select All Instances	>	The second secon
Level 2 Space Airflow Sc 灵	Properties		
Level 2 Space Schedule Level 2 WSHP Schedule	Save to New File	t	
Mechanical Equipment S Space Schedule Pig Panel Schedules Reports	Search Expand All Collapse All	ļ	Dave Picket Viver

After creating a model in Revit, you can print the sheets by creating viewport for collecting documents. A sheet set consists of many sheets. Layout, elevation, section, schematic, details, schedule, legend etc. can be included in the sheet set.

2.8 Tag, Symbols and Dimensions

Tag is an annotation (text label) to identify elements in a drawing. Tag is intelligent, bi-directional graphics that report information stored in an object's properties. Once you have tagged an element and entered a value in the tag, the tagged element will retain that value until you remove it.



The symbol is a graphic representation of an annotation or other object.



Dimensions are used to convey the distance or angle between elements or part of elements. It is a bi-directional annotation that you can edit the distance directly within the dimension string to move elements a specific distance apart and updates automatically. There are permanent dimension and temporary dimension can be used in the model.



2.9 Different Parameters

All contents in the model have parameters, which are simply the information or data about the objects/ items.



Parameters that you create display in the Properties palette or Type Properties dialogue under the group you define and with the values you define.

Project Parameters - specific to a single project file and cannot share with other projects. They are added to elements by assigning them to multiple categories of elements, sheets, or views. It can be used for sorting, scheduling, and filtering.

Family Parameters - control variable values of the family, such as materials. It is specific to the family.

Shared Parameters - can be used in multiple families or projects. After you add a shared parameter definition to a family or project, you can use it as a family or project parameter. Because the definition of a shared parameter is stored in a separate file, it is protected from change. So, it can be tagged and scheduled.

Global Parameters - specific to a single project file but are not assigned to categories. It can be simple values, values derived from equations, or values taken from the model using other global parameters.

3 Getting Start

In this chapter, it covers how to configure and manage standards through the development and use of a project template. This template can be rich with information that goes beyond the out of box content that Revit provides. The template setting is established and content as well as explain how the reuse of work will increase productivity and standardise with each project for Building Department submission.

1. Open a new project in Revit by the following steps:

Open Revit \rightarrow click "New" button \rightarrow click "Browse" in New Project browser to open template (CIC_Template_STR.rte for Superstructure Plans; CIC_Template_DML.rte for Demolition Plan; CIC_Template_CVL.rte for Hoarding Plan) \rightarrow click "OK"

(€		
М	ODELS		
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		New	
F/	AMILIE	S	
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2. Create Site Boundary

In the project browser, click "Site" plan under the Structural Plan of View.



Insert CAD drawing of block plan to the view, click "Insert" → "Link CAD"



Move the CAD link towards the location of the project base point such that point A of the site boundary and the project base point is overlapped.



Open a structural plan in Revit, click "Massing & Site" \rightarrow "Modify Site" \rightarrow "Property Line" to add property line.



Add site boundary symbol in plan view (Refer to section 7.1.4 Add annotation symbol)

Category	Family	Туре
Generic Annotation	ANN-GNN-CIC- Site_Boundary_Mark	1



3. Set the project base point (for civil model only):

Inside Site Plan \rightarrow Click "Manage" in ribbon \rightarrow "Project Location" \rightarrow " Coordinates" \rightarrow click "Specify Coordinates at Point".



Select one of the site boundary points. In the dialogue box, type the true coordination of the point.

	Specify Shared Coordinate	es X
THIS LLL	Relocate this project in Sha known values at the point y will move relative to globally	red Coordinates by specifying ou selected. Current project positioned links.
N 810780811 87	North/South:	819789844.870
N 013103044.01 P	East/West:	835335928.356
E 835335928.356	Elevation:	0.000
to Z +	Angle from Project North	to True North
	0° 00' 00*	East 🗸
		OK Cancel

In the same view, select the survey point, click the clip to change its state to unclipped.



Move the survey point towards the project base point so that they are overlapped. Then click the clip to change its state to clipped.



4. Create a grid and level

Open a structural plan in Revit, click "Architecture" \rightarrow "Datum" to create a grid in the model according to a specific design.



Open an elevation in Revit, click "Architecture" \rightarrow "Datum" to create a level in the model according to a specific design.



5. Acquire a shared coordinate system from the civil model (for structure and demolition models only)

In the project browser, open Level 0 plan under Structural Plan of View. Insert CAD drawing of block plan to the view, click "Insert" \rightarrow "Link CAD"



Move the CAD link towards the location of the project base point such that the intersection of Grid A and Grid 1 is placed in the project base point.



Create grids and site boundary.



Link civil model file to the view, click "Insert" → "Link Revit"



Move and rotate the civil model so that their site boundary and grids are overlapped.



Select the civil model, in the properties panel, click "Not Shared" in "Shared Site" \rightarrow select "Acquire the shared coordinate system form xxx.rvt" -> click "Reconcile".

Properties		×		
Lin Cit	ked Revit Model SAMPLE_CVL_2017 auriocal.rvt		Share Coordinates Shared coordinates of the current project and "CIC_SAMPLE_CVL_2017 aurlocal.rvt" have not been reconciled. This is a one-time operation.	×
RVT Links (1) Identity Data	v 🗄 Edit	Type 2	Publish the current shared coordinate system to "CIC_SAMPLE_CVL_2017 aurlocal.rvt."	
Other Shared Site	. Mint Shareds	*	This will modify all Named Positions of the linked model.	
Shared Site	< NOC SHAREON		 Acquire the shared coordinate system from 'CIC_SAMPLE_CN_2017 auricol.iv.t." This will modify the current model and all Named Positions of other linked models. 	
			Record selected instance as being at Position:	
			CIC_SAMPLE_CVL_2017 aurlocal.rvt : True Coordinate Change	8
Properties help	App	NY .	What are shared coordinates? Reconcile Cancel	
	B	24		

Select the survey point, click the clip to change its state to unclipped.

٨	Survey	Point - Tr	ue Coordin	ate
4	N/S 0	000		
P	E/W 0	.000		
4	Elev 0	.000		

Move the survey point towards the project base point so that they are overlapped. Then click the clip to change its state to clipped. Save the project.

4 Creating Model Objects

4.1 Superstructure

The following objects will be modelled in the structural plan:

- Slab
- Column
- Wall
- Beam
- Lift Shaft
- □ Staircase
- Water Tank
- Reinforcement

4.1.1 Create a Slab

Open a structural plan in Revit \rightarrow Click "Structure" in ribbon \rightarrow click "Floor" \rightarrow click "Floor: Structural"



In the properties panel, you may choose the specific types of the slab from floor family or create by your own. Adjust the value for "Height Offset From Level".

Properties			×
Floor SRS-CIC-150mm	1		,
Floors (1)	~ 66	Edit Ty	pe
Constraints		\$	^
Level	5/F		
Height Offset From Level	-175.000		
Room Bounding			
Related to Mass			1000
Structural		\$	
Structural			
Enable Analytical Model			
Rebar Cover - Top Face	Rebar Cover 1 <25 mm>		
Rebar Cover - Bottom Face	Rebar Cover 1 <25 mm>		Ň.
Rebar Cover - Other Faces	Rebar Cover 1 <25 mm>		
Dimensions		*	~
Properties help		Apply	

Create the slab by drawing boundary line \rightarrow select "Span Direction" \rightarrow click "tick".





Add level difference symbol and span direction symbol in plan view (Refer to section 7.1.4 Add annotation symbol)

Category	Family	Туре
Generic Annotation	ANN-GNN-CIC-Level_Difference	/
Generic Annotation	ANN-GNN-CIC-Span_Direction	Two Way Slab - 2.5mm One Way Slab - 2.5mm Cantilever Slab - 2.5mm



4.1.2 Create Column

Open a structural plan in Revit \rightarrow Click "Structure" in ribbon \rightarrow click "Column".



In the properties panel, you may choose the specific types of the column from column family or create by your own. Adjust the value for "Base Level", "Base Offset", "Top Level" and "Top Offset".

Properties				×
COL-C 250 x 8	CR-CIC- 375	Rectangular		•
Structural Columns	(1)	~	Edit Ty	pe
Constraints			\$	-
Column Location N	Mark	A-4(1920)		
Base Level		5/F		
Base Offset		0.000		
Top Level		6/F		1
Top Offset		0.000	1	
Column Style		Vertical		
Moves With Grids				
Room Bounding				

In the properties panel, type column mark in "Mark" of identity data. For example, C1A was typed for column mark in this case. \rightarrow Place the column into designed location.

dentity Data		
Image		
Comments		
Mark	C1A	
Fire Designation		
Workset	Superstructure	
Edited by		

Repeat the above steps.



Add Tag in plan view (Refer to section 7.1.2 Add Tags – Tag by Category)



4.1.3 Create Wall

Open a structural plan in Revit \rightarrow Click "Architecture" in the ribbon \rightarrow "Build" \rightarrow click "Wall" \rightarrow click "Wall: Structural".



In the properties panel, you may choose the specific types of the wall from column family or create by your own.

Properties	×
Basic Wall STW-CIC-250mm	
Search	Q
Basic Wall	^
BSW-CIC-475mm	
STW-CIC-150mm	
STW-CIC-200mm	
STW-CIC-250mm	
STW-CIC-300mm	

In the properties panel, place the wall by setting base constraint and top constraint to demonstrate the floor extension of the wall. Adjust the value for "Base Constraint", "Base Offset", "Top Constraint" and "Top Offset".

Properties		×
Basic Wall STW-CIC-250r	nm	
Walls (1)	~ 🔓 E	dit Type
Constraints		* ^
Location Line	Wall Centerline	
Base Constraint	5/F	
Base Offset	0.000	
Base is Attached		
Base Extension Distance	0.000	······
Top Constraint	Up to level: 6/F	
Unconnected Height	3325.000	
Top Offset	0.000	

Drag the wall from the start point to endpoint.



In the properties panel, type wall mark in "Mark" of identity data. For example, W5B was typed for wall mark in this case.

Identity Data		
Image		
Comments		
Mark	W5B	
Fire Designation		
Workset	Superstructure	
Edited by		

Add Tag in plan view (Refer to section 7.1.2 Add Tags - Tag by Category)



4.1.4 Create Beam

Open a structural plan in Revit \rightarrow Click "Structure" in ribbon \rightarrow click "Structure" \rightarrow click "Beam"



In the properties panel, you may choose the specific types of the beam from beam family or create by your own.

×
•
Q
^

Create the slab by drawing start point and endpoint \rightarrow Enter the value for "Start Level Offset" and "End Level Offset" or "Z Offset Value" for beam or inverted beam in the constraint of properties.

Properties			×
SFM-RCB-CIC 400 x 600	-Rectangular		•
Structural Framing (Other)	(1) ~	Edit Ty	pe
Constraints		\$	^
Reference Level	5/F		
Work Plane	Level : 5/F		
Start Level Offset	0.000		
End Level Offset	0.000		
Orientation	Normal		
Cross-Section Rotation	0.00*		
Geometric Position		\$	
yz Justification	Uniform		
y Justification	Origin		
y Offset Value	0.000	0	ř.
z Justification	Тор		~

In the properties panel, add beam mark in "Mark" of identity data. For example, TB18 was typed for beam mark in this case.

Identity Data	
Image	
Comments	
Mark	TB18
Fire Designation	
Workset	Superstructure
Edited by	

In Structural group, tick the property "Cantilever" or "Transfer" to identify the specific beam.

Structural	
Cantilever	
Transfer	
Cut Length	1575.000
Structural Usage	Other

Add Tag in plan view (Refer to section 7.1.2 Add Tags – Tag by Category)

Category	Family	Туре
Structural Framing	ANN-FRG-CIC- Rectangular	Standard

TB29 (200 x 600) x	50 × 600)
TB41 (500 x 600)	TB79(4 ⁴

4.1.5 Create Lift Shaft

Open a structural plan in Revit \rightarrow Click "Structure" in ribbon \rightarrow click "Opening" \rightarrow click "Shaft"



Create the shaft by drawing boundary line / using detail line on plan \rightarrow click "symbolic line" to create cross indication for shaft \rightarrow click "tick".



In the properties panel, enter the value for base constraint, base offset, top constrain and top offset to control the shaft location and level.

rioperues	~
D	
-12	
Shaft Openings (1)	∽ 🖯 Edit Type
Constraints	*
Base Constraint	3F
Base Offset	0.000
Top Constraint	Up to level: 6F
Unconnected Height	6300.000
Top Offset	0.000

4.1.6 Create a Staircase

Droportion

Open a structural plan in Revit \rightarrow Click "Architecture" in ribbon \rightarrow "Circulation" \rightarrow click "Stair"



Click "Run" \rightarrow Create the staircase by drawing start point to endpoint, and landing on plan \rightarrow click "tick".



In the properties panel, use the base level, top-level and offset to control the staircase location and level.

Stairs (1) Constraints Base Level S/F Base Offset 0.000 Top Level 6/F Top Offset 375.000 Desired Stair Height 3700.000 Multistory Top Level None	SCS-AEC-20	Dmm		•
Constraints Base Level S/F Base Offset Output Constraints Base Level S/F Base Offset Output Constraints Cons	Stairs (1)	V 🖯 Edi	t Typ)e
Base Level 5/F Base Offset 0.000 Top Level 6/F Top Offset 375.000 Desired Stair Height 3700.000 Multistory Top Level None	Constraints		\$	^
Base Offset 0.000 Top Level 6/F Top Offset 375.000 Desired Stair Height 3700.000 Multistory Top Level None	Base Level	5/F		
Top Level 6/F Top Offset 375.000 Desired Stair Height 3700.000 Multistory Top Level None	Base Offset	0.000		
Top Offset 375.000 Desired Stair Height 3700.000 Multistory Top Level None	Top Level	6/F		
Desired Stair Height 3700.000 Multistory Top Level None	Top Offset	375.000		
Multistory Top Level None	Desired Stair Height	3700.000		
	Multistory Top Level	None		
	1			
			-141	
		1 1 1 1 1 1		

4.1.7 Create a Water Tank

Open a structural plan in Revit \rightarrow Click "Structure" in ribbon \rightarrow "Model" \rightarrow "Component" \rightarrow click "Model In-Place"



Select "Generic Models" in the Family Category and Parameters dialogue and fill in the name of the water tank.





4.1.8 Create Reinforcement (Beam / Column / Wall / Staircase / Water Tank)

After the creation of Beam, Column, Wall, Staircase \rightarrow Open a structural plan in Revit \rightarrow right click the plan in project browser \rightarrow click "Duplicate View" to duplicate the plan \rightarrow click "Duplicate"



Create column rebar plan \rightarrow click "View" \rightarrow "Graphics" \rightarrow click "Visibility/ Graphics" to show the column and rebar in plan only.



Unclick all items, except "Structural Column" and "Structural Rebar" in Visibility/ Graphics window \rightarrow click "Apply" \rightarrow click "OK".

×

Visibility/Graphic Overrides for Structural Plan: 5F COLUMN REBAR PLAN



Only column is shown on the screen.



Select a column \rightarrow click "Reinforcement" in ribbon \rightarrow click "Rebar".



Select the "Placement Plane" in Ribbon \rightarrow select "current work plane / near cover reference / far cover reference" to place the rebar plane.



Create a stirrup \rightarrow In the properties panel, you may choose the specific rebar bar and rebar shape from rebar family or create by your own.

Properties		×	Rebar Shape Browser	>
	Rebar Bar T10	•		
Search		Q	Rebar Shape : 00	
Rebar Bar				F
Struc	tural Rebar 1			
T10				J
T12			Rebar Shape : 11	_
T16				
T20				5
T25				
Т32			Rebar Shape : 12	
T40				
	Most Recently Used Types			
Rebar Bar :	T32			
Rebar Bar :	T16		Rebar Shape : 21	
Rebar Bar :	T40		·	
Rebar Bar :	T10		∥ —	1
Rebar Bar :	T12		Pohar Shano (22	
Rebar Bar :	T25		Repar shape : 22	
Rebar Bar :	T20			



Properties					×
Reba T10	ar Bar				
Structural Rebar ((1)	Ŷ	🕮 Edit 1	Гур	pe
Construction				2	~
Partition					
Rebar Number		5			
Schedule Mark		3			
Geometry		Shape Driven			
Style		Stirrup / Tie			
Stirrup/Tie Attac	hment	Interior Face of Cover	Refere		
Shape		Rebar Shape 5			
Shape Image		<none></none>			
Hook At Start		Stirrup/Tie Hook - 13	5 deg.		
Hook At End		Stirrup/Tie Hook - 13	5 deg.		
End Treatment A	t Start	None			
End Treatment A	t End	None			
Rebar Set				2	
Layout Rule		Maximum Spacing			
Quantity		17			
Spacing		175.0 mm			

Change the rebar spacing in rebar set of Ribbon.

Layout:	Maximum Spacing	- 100	⊡ +			
Quantity:	17	Pick New	Edit	Constrained	Insert	Varving
Spacing:	175.0 mm	Host	Constraints	Placement	Coupler	Rebar Set
	Rebar Set	Host	Rebar C	onstraints	Rebar Coupler	Rebar Set Type

Change the quantity of rebar and direction in rebar set of Ribbon.

Layout:	Fixed Number	•			
Quantity:	2	*	Show	Show	Select
Spacing:			All	First and Last	
	Rebar Set			Presentation	

Repeat the above step for mains and links.



Repeat the above steps for Beam and Wall.

Category Family	Туре
Structural Rebar	 ANN-RBG-CIC Quantity & Type & Spacing Quantity & Type (Rebar Set) Quantity Type & Number Quantity Type Spacing & Number - 1 Line Quantity Type Spacing & Number - 2 Line Shape Code Tag Shape Only Type & Number Type & Spacing Type & Spacing Type & Spacing (D.S.) Type & Spacing (S.S.)

Add Tag in plan view/ section view (Refer to section 7.1.2 Add Tags - Tag by Category)



4.1.9 Create Reinforcement (Path)

After the creation of Slab \rightarrow Click "Structure" in ribbon \rightarrow "Reinforcement" \rightarrow Click "Path"



Select the floor \rightarrow Sketch the line of the path on the floor.

1		
	Vertical and Nearest	
1440	5 30,05	
Properties	-	×
Structural Pa Structural Pa	h Reinforcement h Reinforcement 1	
Structural Path Reinforcen	nent (1) 🗸 🔚	Edit Type
Construction		^ ^
Partition		
Layout Rule	Maximum Spacing	
Additional Offset	10.0 mm	
Graphics Structural Layers		» » «
Face	Bottom	
Bar Spacing	250.0 mm	
Number Of Bars	18	
Primary Bar - Type	T10	ACCOUNTS INC.
Primary Bar - Length	10360.0 mm	
Primary Bar - Shape	00	
Primary Bar - Start Hoo	None	
Primary Bar - End Hook	None	
Alternating Bars		
Alternating Bar - Type	T40	
Alternating Bar - Length	2000.0 mm	
Alternating Bar - Shape		
Alternating Bar - Offset	0.0 mm	
Alternating Bar - Start	Rebar Hook 90	****
Alternating Bar - End H.	None	
dentity Data	1	\$
Image	- Joseph - J	
Comments		
Mark		
Rebar Laver	B 2	
incoli cojci		

In the properties panel, fill in the information of "Layout Rule", "Additional Offset", "Face", "Bar Spacing", "Primary Bar – Type", "Primary Bar – Length", "Primary Bar – Shape", "Primary Bar – Start Hook", "Primary Bar – End Hook".

For "Rebar Layer", fill in T1/T2/B1/B2, etc.



Select the structural path reinforcement symbol. In the properties panel, select "ANN-PHG-CIC-Symbol (Top)" for top layer rebar and "ANN-PHG-CIC-Symbol (Bottom)" for bottom layer rebar.

Properties	5	×		
	ANN-PHG-CIC-Symbol Top		and the second s	
Search		R		(T1) –
ANN-PH	G-CIC-Symbol			
Bo	ttom	-	¥	
To	p			
	Most Recently Used Types			
ANN-PH	G-CIC-Symbol : Top			
ANN-PH	G-CIC-Symbol : Bottom			

Add path reinforcement symbol in plan view

Click "Annotation" in ribbon \rightarrow "Symbol" \rightarrow click "Path".



Select between "Top" or "Bottom" for a different layer of the rebar.

Properti	es	×
	ANN-PHG-CIC-Symbol Top	-
Search		م
ANN-P	HG-CIC-Symbol	
E	Bottom	
1	Гор	
	Most Recently Used Types	5
ANN-P	HG-CIC-Symbol : Top	
ANN-P	HG-CIC-Symbol : Bottom	



Add Tag in plan view (Refer to section 7.1.2 Add Tags – Tag by Category)

Category		Family	Туре
Structural Reinforcement	Path	ANN-PHG-CIC- Tag	Standard



4.1.10 Create Reinforcement (Area)

After the creation of Slab \rightarrow Click "Structure" in ribbon \rightarrow "Reinforcement" \rightarrow Click "Area"



Select the floor \rightarrow sketch the boundary of slab to form a closed loop



A parallel line symbol indicates the major direction edge of the area reinforcement.

For major direction, tick "Top Major Direction" and "Bottom Major Direction" in the properties panel. Select the "Top Major Bar Type" and "Top Major Spacing". Set the value of "Bottom Major Bar Type "and "Bottom Major Spacing",

Properties		
Structural Area R Structural Area R	einforcement einforcement 1	
Structural Area Reinforcement	(1) 🗸 🔂 Edi	t Typ
Construction		*
Partition		1
Layout Rule	Maximum Spacing	
Additional Top Cover Offset	0.0 mm	
Additional Bottom Cover Of	. 0.0 mm	
Graphics	· · · · · · · · · · · · · · · · · · ·	\$
View Visibility States	Edit	n
Structural	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	*
Reinforcement Volume	16604.10 cm ³	1
Lavers		*
Top Major Direction		11
Top Major Bar Type	T10	11
Top Major Hook Type	None	
Top Major Hook Orientation	Down	
Top Major Spacing	200.0 mm	
Top Major Number Of Lines	27	
Top Minor Direction		
Top Minor Bar Type	T10	
Top Minor Hook Type	None	
Top Minor Hook Orientation	Down	1
Top Minor Spacing	300.0 mm	
Top Minor Number Of Lines	2	
Bottom Major Direction		
Bottom Major Bar Type	T10	
Bottom Major Hook Type	None	
Bottom Major Hook Orienta	.Up	
Bottom Major Spacing	200.0 mm	
Bottom Major Number Of L	27	
Bottom Minor Direction		
Bottom Minor Bar Type	T10	
Bottom Minor Hook Type	None	
Bottom Minor Hook Orient	Up	
Bottom Minor Spacing	300.0 mm	
A	1.0	-
Copy the previous Structural Area Reinforcement object and paste "Aligned to the Same Place" as the rebars for minor direction.

For minor direction, tick "Top Minor Direction" and "Bottom Minor Direction" in the properties panel. Select the "Top Minor Bar Type" and "Top Minor Spacing". Set the value of "Bottom Minor Bar Type ", "Bottom Minor Spacing", "Additional

Properties		
Structural Area R Structural Area R	einforcement einforcement 1	
Structural Area Reinforcement	(1) 🗸 🔂 Ed	it Typ
Construction		*
Partition		
Layout Rule	Maximum Spacing	
Additional Top Cover Offset	10.0 mm	
Additional Bottom Cover Of.	. 10.0 mm	
Graphics		\$
View Visibility States	Edit	1
Structural		*
Reinforcement Volume	13752.32 cm ³	T
Layers		*
Top Major Direction		
Top Major Bar Type	T10	
Top Major Hook Type	None	
Top Major Hook Orientation	Down	
Top Major Spacing	200.0 mm	
Top Major Number Of Lines	27	
Top Minor Direction		
Top Minor Bar Type	T10	
Top Minor Hook Type	None	
Top Minor Hook Orientation	Down	
Top Minor Spacing	250.0 mm	
Top Minor Number Of Lines	17	
Bottom Major Direction		
Bottom Major Bar Type	T10	
Bottom Major Hook Type	None	
Bottom Major Hook Orienta.	Up	
Bottom Major Spacing	200.0 mm	
Bottom Major Number Of L.	. 27	
Bottom Minor Direction		
Bottom Minor Bar Type	T10	
Bottom Minor Hook Type	None	
Bottom Minor Hook Orient	Up	
Bottom Minor Spacing	250.0 mm	

Top Cover Offset" and "Additional Bottom Cover Offset".



Go to 3D View, there are four layers of rebars. Select the first layer of rebars and add "T1" to Comments in the properties panel. Select the second layer of rebars and add "T2" to Comments. For the bottom layer of rebar, add "B2" to Comments for the third layer and add "B1" to Comments for the fourth layer.



Add Tag in plan view (Refer to section 7.1.2 Add Tags - Tag by Category)

Category		Family	Туре
Structural Reinforcement	Area	ANN-ARG-CIC	Major / Minor



4.2 Demolition including hoarding

The following objects will be modelled in the demolition plan:

- Existing Building Structure
- Bamboo Scaffolding
- Propping
- Debris Chute
- Video Camera

The following objects will be modelled in hoarding plan:

- Topo surface
- Counterweight
- Hoarding
- Railing
- Street Furnitures (Traffic Light / Fire Hydrant / Pillar Box / Street Light)

4.2.1 Create an Existing Building Structure

Steps of creating existing building structure can be referred to Section 4.1 "Superstructure". Structural wall, beam, slab and shaft are created.



4.2.2 Create Bamboo Scaffolding

Open a structural plan in Revit \rightarrow click "Structure" in ribbon \rightarrow click "Component".



In the properties panel, you may choose the specific types of scaffolding from family "GMD-TMP-CIC- Bamboo_Scaffolding" or create by your own.

Properties			×
GMD-	TMP-CIC-Bamboo_Scaffo	Iding	•
Generic Models (1)		lit Typ	pe
Constraints		\$	^
Length	91552.013		
Offset	0.000		
Work Plane	Level: 1/F		
Text		\$	
Filter Level			
Dimensions		\$	
Angle	0.00°		
h2	10000.000		
Volume	640.864 m ³		
Identity Data		\$	
Image			
Comments			
Mark			
Phasing		\$	
Phase Created	New Construction		~
Properties help	Α.	pply	

Create the scaffolding by stretch starting point to endpoint





4.2.3 Create Propping

Open a structural plan in Revit \rightarrow click "Structure" in ribbon \rightarrow click "Component".



In the properties panel, you may choose the specific types of propping from family "GMD-TMP-CIC- Propping" or create by your own. Place it to the desired location.



Repeat the above steps.



1,

4.2.4 Create Debris Chute

Open a structural plan in Revit \rightarrow click "Structure" in ribbon \rightarrow click "Component".



In the properties panel, you may choose the specific types of debris chute from family "GMD-TMP-CIC- Debris_Chute" or create by your own. Place it to the desired location.

Properties)	<
GMD-TMP	P-CIC-Debris_Chute		
Generic Models (1)	V 🚰 Edit 1	fype	
Constraints	;	* /	,
Level	G/F		
Host	Level : G/F		
Offset	0.000		
Moves With Nearby			
Text		*	
Filter Level			
Dimensions		*	
Volume	162.354 m ³		
Identity Data		*	
Image			
Comments			
Mark			

Dimension can be adjusted by clicking "Edit Type" in properties panel \rightarrow type the dimensions of width / length / height by your own to suit the design \rightarrow click "OK".

Family:	GMD-TMP-CIC-D	ebris_Chute ~	Load
Type:	GMD-TMP-CIC-D	ebris_Chute ~	Duplicate
			Rename
Type Paran	neters Descendence	Value	1_1
	Parameter	Value	=
Materials	s and Finishes	12	*
Material		Debris Chute	
Dimensio	ons		*
Height		13000.000	
Length		3728.000	
Width		3350.000	0
Identity	Data		\$
Type Ima	ge		
Keynote			



Repeat the above steps.



4.2.5 Create a Video Camera

Open a structural plan in Revit \rightarrow click "Structure" in ribbon \rightarrow click "Component".



In the properties panel, you may choose the specific types of debris chute from family "SCD-CTV-CIC- Wall_Mounted" or create by your own. Place it to the desired location.



Properties				×
1	SCD-CT	/-CIC-Wall_Mou	inted	•
Security D	evices (1)	~	Edit Ty	pe
Constraint	s		*	^
Host		Level : G/F	1	
Elevation	**********	0.000		
Electrical -	Loads		\$	
Panel		1	I	
Circuit N	umber			
Dimension	15	In Automatic Contractor	\$	
Angle		45.00°		The second se
Identity Da	ita		*	
Image				
Commen	ts			
Mark		26		



4.2.6 Create Topographic Surface

Insert CAD as a reference to create a 3D topo surface.

Open a site plan in Revit \rightarrow click "Insert" in Ribbon \rightarrow click "Link CAD" \rightarrow find the CAD location \rightarrow click "OK"

Architecture	E - 1	Structu	ire	Syste	ms	Insert	An	notate						
	2		E	5	Ð		(HB)							
Link Lin Revit IF	nk C	Link CAD	DV Mar	VF kup	Decal	Point Cloud	Ma Li	nage nks						
			I	Link										
Favorites	l	≮ File I	name: [N:\Digita	al\504972 (CIC BIM Sta	ndard	Autodesk\Re	vit 2019\Export DW	G	>			
Desktop	~	Files of	type:	DWG File	es (*.dwg)){					~			
Current view	only			c	Colors: 👔	reserva	~		Positioning): Ma	nual - Cent	er		~
				Layers/L	evels: Vi	sible	~		Place at	t: P1L	E CAP LEVE	EL.		~
				Import	units: mi	limeter	~	1,000000			Orient to Vi	ew		
Tools	•				\square	Correct line	s that	are slightly o	ffaxis		<u>O</u> pen		Cancel	



Open a site plan in Revit \rightarrow click "Massing & Site" in ribbon \rightarrow click "Toposurface" under Model Site.



Place point and set the elevation on the Toposurface to create \rightarrow click "Tick".

×	Place Point	Creat from Im	re Simp port Surf	blify Set	Show	Ref Plane	Viewer	
Surface		Too	ls		Work	Plane		
Modify	Edit Surf	ace	Elevation	4100.000	8	A	bsolute Ele	vatio



Repeat the above steps for other Toposurface with different levels.



4.2.7 Create Counterweight

Open a site plan in Revit \rightarrow click "Structure" in ribbon \rightarrow click "Component".



In the properties panel, you may choose the specific types of counterweight from family

"STE-LGT-CIC-Counterweight-2 / 3 / 4 posts" or create by your own. Place it to the desired location.

Properties			x
STE-LGT-CIC-Cou	nterweight-2_posts		•
Site (1)	~	Edit Ty	pe
Constraints		\$	^
Level	EXISTING GROUND L	EVEL	
Host	Surface		
Offset	0.000		Y
Moves With Nearby Elements		Q.	
Materials and Finishes		\$	
Bottom Formwork	Formwork Soffit		
Dimensions		\$	
Height	800.000		The second second
Length	2387.000]
Width	250.000		
offset1	200.000		
offset2	200.000]
post1offset	200.000		
post2offset	200.000		



4.2.8 Create Hoarding

Open a site plan in Revit \rightarrow click "Structure" in ribbon \rightarrow click "Component".



In the properties panel, you may choose the specific types of hoarding from family

"STE-LGT-CIC-Hoarding-Gantry / Double Deck / Corner" or create by your own. Place it to the desired location.

Adjust Angle for the sloped surface.

Properties		×
STE-LGT-I Double d	CIC-Hoarding eck_2300_width_4785_height	-
Site (1)	~	Edit Type
Constraints		\$
Length	82132.492	1
Offset	-100.000	Ĩ
Work Plane	Level : EXISTING GR	OUND LEVEL
Dimensions		\$
Angle	0.00°	0
h2	4785.000	



4.2.9 Create Railing

Open a site plan in Revit \rightarrow click "Architecture" in ribbon \rightarrow click "Railing".



In the properties panel, you may choose the specific type of counterweight from family "ste-lgt-CIC- Counterweight-2 / 3 / 4 posts" or create on your own. Drag the railing from a start point to end. Place it to the desired location.

Properties			×
Railin Peds	ng trian 1	100mm	
Railings (1)	~	Edit T	ype
Constraints			\$
Base Level	EXIST	ING GR	
Base Offset	-20.0	00	
Offset from Path	0.000	(1
Dimensions	0.0000000000000000000000000000000000000		\$
Length	22180).000	



4.2.10 Create Street Furnitures (Traffic Light/Fire Hydrant/Pillar Box/Street Light)Open a structural plan in Revit → click "Structure" in ribbon → click "Component"



In the properties panel, you may choose the specific types of elements from family or create by your own. Place it to the desired location.

Properties	1			×
1	GMD-STU-CIC-Fire	e Hydrant		•
Generic Mo	idels (1)	~	Edit Typ	pe
Constraints				*
Level		EXISTING GROUND	LEVEL	
Host		Surface		
Offset		0.000		T
Moves With	h Nearby Elements			\square
Dimensions				\$
Volume		0.144 m ²		11
Identity Data	а			\$
Image		1		П
Comments	s			Π
Mark				
Phasing				*
Phase Crea	ated	New Construction		T
Phase Dem	nolished	None		

4.3 Foundation

The following objects will be modelled in a foundation plan:

- Pile Cap
- Bored Pile
- Socket H-Pile
- Tie Beam
- Screen Wall
- Foundation Slab
- Column/Wall above pile cap

4.3.1 Create Pile Cap

Open a pile cap level plan in Revit \rightarrow Click "Structure" in ribbon \rightarrow click "Foundation" \rightarrow click "Slab" \rightarrow "Structural Foundation: Slab"



In the properties panel, you may choose the specific types of the slab from foundation slab family or create by your own.



Type slab mark in "Mark" of identity data. For example, CP1 was typed for slab mark in this case.

Properties					×
	Foundati PC_RC25	on Slab 00			
Structural	Foundation	s (1) 🗸 🗸	Edit 1	Ty	pe
Constrain	ts			*	^
Level		PILE CAP LEVEL			
Height O	ffset From L	evel 0.000			
Related t	o Mass				
Structural				¥	
Dimension	ns			¥	
Identity D	ata			\$	
Image					
Commer	nts				
Mark		CP1			
Workset		Foundation			
Edited by	7				
Phasing				*	

Click "Edit Type" in Properties browser \rightarrow Under Type Parameter \rightarrow Under Other \rightarrow Select the Foundation_Type as "FD_Cap" to ensure the filtering function of template format can be functional.

System Family: Foundation Slab 🗸 🗸		Load	
FDS-AEC-2500m	m-Pile_Cap ~	Duplicate	
		Rename	
eters			
Parameter	Value	=	-
esistance (R)	2.3901 (m ² ·K)/W		
nass	350.96 kJ/K		
ice	0.100000		
s	1		
ata		\$	
je			
urer			
iments			
n			
Description			
Code			
٤			
		\$	
n_Type	FD_Cap		
	System Family: F FDS-AEC-2500m eters Parameter esistance (R) nass ice s bata je urer iments n Description Code c n Type	System Family: Foundation Slab	System Family: Foundation Slab

Use Draw tool to create a slab by drawing a boundary line \rightarrow click "Tick" when finishing





Add Tag in plan view/ section view (Refer to section 7.1.2 Add Tags – Tag by Category)

Category	Family	Туре	
Structural	ANN-FDG-CIC-	Mark & FDN	
Foundation	Rectangular	Thickness	



4.3.2 Create Bored Pile

Open a pile cap level plan in Revit \rightarrow click "Structure" in ribbon \rightarrow click "Foundation" \rightarrow click "Isolated



In the properties panel, you may choose the specific types of a pile from pile family "SFD-FPL-CIC- Bored_Pile" or create by your own.

Properties		×
SFD-FPL-CIC-B D2500_BD3750	ored_Pile)	•
Structural Foundations (1)	🗸 🔠 Edit Type	e
Constraints	*	^
Cap Thk	2500.000	
Pile Length	42375.000	
Level	PILE CAP LEVEL	
Host	Foundation Slab : FDS-AEC	
Height Offset From Level	-2500.000	
Moves With Grids		

Type pile mark in "Mark" of identity data. For example, BP3 was typed for the mark in this case \rightarrow place the pile into the designed ocation.



Add Tag in plan view/ section view (Refer to section 7.1.2 Add Tags – Tag by Category)

Category	Family	Туре
Structural Foundation	ANN-FDG-CIC-Bored_Pile	Mark & Size
		Mark
BP2 DIA = 2500 mm B.O. = 3750 mm DIA = 2500 mm B Q = 3750 mm		

4.3.3 Create Socket H-Pile

Open a pile cap level plan in Revit \rightarrow click "Structure" in ribbon \rightarrow click "Foundation" \rightarrow click "Isolated"



In the properties panel, you may choose the specific types of the pile from pile family "SFD-FPL-CIC- Socket_H_Pile" or create by your own.

Create the pile by setting cap thickness, pile length, socket length and height offset in constraint. The universal beam dimension and steel plate dimension of the pile can be set in "Edit Type".

Properties		×
SFD-FPL-CIC-Si 305x305x223U	ocket_H_Pile BP R=610	•
Structural Foundations (1)	~ 🚰 Edi	t Type
Constraints		* ^
Cap Thk	2000.000	
Pile Base Offset	-56880.000	
Pile Length	57025.000	0
Socket Length	7000.000	
Level	PILE CAP LEVEL	- Anna
Host	Foundation Slab : FDS-AEC	
Height Offset From Level	-2000.000	1999-0990
Moves With Grids		

Type pile mark in "Mark" of identity data. For example, SP2B was typed for the mark in this case. \rightarrow Place the pile into designed location.

dentity Data		:
Image		
Comments		
Mark	SP2B	
Fire Designation		
Workset	Foundation	
Edited by		

Repeat the above steps.



Add Tag in plan view/ section view (Refer to section 7.1.2 Add Tags – Tag by Category)

Category	Family	Туре
Structural Foundation	ANN-FDG-CIC- Rectangular	Mark Only



4.3.4 Create Tie Beam

Open a pile cap level plan in Revit \rightarrow click "Structure" in ribbon \rightarrow click "Foundation" \rightarrow click "Isolated".



In the properties panel, you may choose the specific types of the beam from family "SFD-FBM-CIC- Rectangular" or create by your own.

Properties		
SFD-FBM-0 1000 x 800	CIC-Rectangular	
Structural Foundations (1) v 🗄 Edit Type	
Constraints	* ^	
Start Level Offset	0.000	
End Level Offset	0.000	
Length	10935.000	
Report Length	10935.000	
Offset	0.000	
Moves With Grids		
Work Plane	Level : PILE CAP LEVEL	

Click "Place on Work Plane" in Ribbon \rightarrow draw the beam from starting point to end at the centre of slabs.



Type beam mark in "Mark" of identity data. For example, TB10 was typed for the mark in this case.

Identity Data		\$	
Image		-	
Comments			
Mark	TB10		
Fire Designation			- Contraction of the local sectors of the local sec
Workset	Foundation		1000
Edited by		1	



Category	Family	Туре
Structural	ANN-FDG-CIC-	Standard 2 Lines
Foundation	Rectangular	Standard



4.3.5 Create Screen Wall

Open a pile cap level plan in Revit \rightarrow click "Structure" in ribbon \rightarrow click "Wall".

Beam Wall	Floor Truss Brace Beam System	n	
Str	ucture	ы	
Properties		2	×
Basic Wall BSW-CIC-475n	nm		•
Walls (1)	✓ Eli Edit	Туре	£.
Constraints		*	^
Location Line	Wall Centerline		
Base Constraint	PILE CAP LEVEL		
Base Offset	0.000		
Base is Attached		1	
Base Extension Distance	0.000	1	
Top Constraint	Up to level: EXISTING GROU	T	
Unconnected Height	10550.000	TT.	
Top Offset	100.000	1	

In the properties panel, you may choose the specific types of a wall from family or create by your own \rightarrow set the "Base Constraint" and "Top Constraint" of screen wall height.

Type wall mark in "Mark" of identity data. For example, BW10 was typed for the mark in this case.

Identity Data		\$
lmage		
Comments		
Mark	BW10	
Fire Designati	on	
Workset	Foundation	
Edited by		

Draw the screen wall from starting point to end.





4.3.6 Create Foundation Slab

Click "Structure" in ribbon \rightarrow click "Foundation" \rightarrow click "Slab" \rightarrow "Structural Foundation: Slab"



In the properties panel ,you may choose the specific types of the slab from foundation slab family or create on your own.

Propert	ties	×
	Foundation Slab FDS-AEC-600mm	-
Search	h	م
Found	lation Slab	
	FDS-AEC-600mm	
	FDS-AEC-2000mm-Pile_Cap	
	FDS-AEC-2100mm-Pile_Cap	

Use Draw tool to create a slab by drawing a boundary line \rightarrow click "Tick" when finishing



Add Tag in plan view (Refer to section 7.1.2 Add Tags - Tag by Category)

Category	Family	Туре
Structural	ANN-FDG-CIC-	Mark
Foundation	Rectangular	

Category	Family	Туре
Generic Annotation	ANN-GNN-CIC-Level_Difference	1
Generic Annotation	ANN-GNN-CIC-Span_Direction	Two Way Slab - 2.5mm One Way
		Slab -2.5mm
		Cantilever Slab - 2.5mm

Add level difference symbol and span direction symbol in plan view (Refer to section 7.1.4 Add annotation symbol)



4.3.7 Create Column/Wall

Open a structural plan in Revit \rightarrow Click "Structure" in ribbon \rightarrow click "Column"/"Wall".



In the properties panel, you may choose the specific types of a column from column family or create by your own.

×

Properties				×	Properties				>
	COL-CCR-CIC- 450 x 1000	Rectangular		•		Basic Wall STW-CIC-350r	nm		
Structural	Columns (1)	~	Edit Ty	/pe	Walls (1)		~	Edit Ty	pe
Constraints	5		*	~	Constraints			\$	
Column L	ocation Mark	P-4-P-D			Location Lin	e	Wall Centerline		
Base Level	I	PILE CAP LEVEL			Base Constra	aint	PILE CAP LEVEL		
Base Offse	et	0.000		1	Base Offset		0.000		1
Top Level		EXISTING GROUND L	EVEL	~	Base is Attac	hed			
Top Offse	t	100.000		1	Base Extension	on Distance	0.000		
Column S	tyle	Vertical			Top Constra	int	Up to level: B1/F		-
Moves Wr	th Grids				Unconnecte	d Height	5350.000		
Room Bou	unding		01010000000000000000000000000000000000		Top Offset		0.000	1	1

In the properties panel, type column mark in "Mark" of identity data. For example, PC2 was typed for column mark in this case. \rightarrow Place the column into designed location.



Add Tag in plan view/ section view (Refer to section 7.1.2 Add Tags – Tag by Category)

Category	Family	Туре
Structural Column	ANN-SCG-CIC	Mark
Wall	ANN-WLG-CIC	Mark



4.4 Excavation and lateral support

The following objects will be modelled in a foundation plan:

- Sheet Pile
- Walling
- Struct / Tie / Short Struct
- □ Stage Topo / Final Topo
- Basement Wall
- 4.4.1 Create Sheet Pile

In the Project Browser, open an existing ground level Click "Structural" in ribbon → click "Isolated"



In the Properties panel, select family type "SFD-FPL-CIC-Sheet_Pile" \rightarrow change "Offset" to set level \rightarrow

Click "Edit Type" to change properties by your own if any

Properties				×
	SFD-FPL-CIC-S FSP IV (TYPE C	iheet_Pile)		•
Structural Fo	oundations (1)	~	Edit Ty	pe
Constraints			\$	^
Length		39500.000		
Report Leng	jth	39500.000		
Offset		0.000		C
Moves With	Grids			
Work Plane		Level : EXISTING GRO	UND LE	C
Structural			\$	
Enable Anal	ytical Model			
Dimensions			\$	1
Depth		23000.000		
Elevation at	Тор	4100.000		
Elevation at	Bottom	Varies		~
				10 N N

Click "Place on Work Plane" \rightarrow Drag from starting point to end to create sheet pile





4.4.2 Create Walling

In the Project Browser, open an existing ground level

Click "Insert" \rightarrow click "Load Family" \rightarrow Open "SFM-STB-CIC-UB.rfa" file in Browser \rightarrow click "Open" Remark: repeat the above steps to load different types can be loaded into the model



Look	in: Family			~	🔶 🖳 💥	(🖬 Y	(ews
1	Name	~	Date modified	Туре	PTEVIEW		
	COL-S	TC-CIC-Square_Hollow_Section.rfa	1/2/2020 5:38 PM	Autodesk Revi	\leq	2	
Computer	COL-S	TC-CIC-UB.rfa	11/4/2019 3:09 PM	Autodesk Revi		~	
er.	COL-9	TC-CIC-UBP.rfa	1/2/2020 5:37 PM	Autodesk Revi	~	~	5
2	COL-9	TC-CIC-UC.rfa	11/4/2019 3:08 PM	Autodesk Revi	1	_	1
etwork	SFM-S	TB-CIC-Channel_Tapered_Flange.rfa	1/2/2020 5:38 PM	Autodesk Revi	-	~	
Sector Sector Sector	SFM-S	TB-CIC-Rectangular_Hollow_Section	1/2/2020 5:39 PM	Autodesk Revi			S
	SFM-S	TB-CIC-UB.rfa	1/2/2020 5:39 PM	Autodesk Revi			
and have	SFM-9	TB-CIC-UC.rfa	1/2/2020 5:39 PM	Autodesk Revi			
econ Li L. odesk L							
		Provention					
Clävary	File nam	e: SFM-STB-CIC-U8.rfa		~			
(C. 1000 (C. 1))	 Files of tyr 	et All Supported Elec. (* cfa. * adek)					

Select the required type to load into the project.

amily:		Types:						
SFM-STB-CIC-UB.rfa	^	Туре	Width	Height	Flange Thickness	Web Thickness	Web Fillet	'
		-	(all) 🗸	(all) 🗸	(all) 🗸	(all) 🗸	(all) 🗸	1
		UB610x305x238	31.14 cm	63.58 cm	3.14 cm	1.84 cm	1.65 cm	
		UB610x305x179	30.71 cm	62.02 cm	2.36 cm	1.41 cm	1.65 cm	2
		UB610x305x149	30.48 cm	61.24 cm	1.97 cm	1.18 cm	1.65 cm	1
		UB610x229x140	23.02 cm	61.72 cm	2.21 cm	1.31 cm	1.27 cm	1
		UB610x229x125	22.90 cm	61.22 cm	1.96 cm	1.19 cm	1.27 cm	i.
		UB610x229x113	22.82 cm	60.76 cm	1.73 cm	1.11 cm	1.27 cm	i
		UB610x229x101	22.76 cm	60.26 cm	1.48 cm	1.05 cm	1.27 cm	1
~		UB610x178x100	17.92 cm	60.74 cm	1.72 cm	1.13 cm	1.27 cm	1
		UB610x178x92	17.88 cm	60.30 cm	1.50 cm	1.09 cm	1.27 cm	1
	~	UB610x178x82	17.79 cm	59.86 cm	1.28 cm	1.00 cm	1.27 cm	1.
< >		<					>	

In Ribbon, click "Structure" → draw walling by dragging starting point to end

In the Properties panel, select the corresponding type and dimension of walling \rightarrow fill in "mark" for identification of element \rightarrow Fill in "ELS_Phase" to identify the phasing (i.e. 1,2,3,4 ... etc)

Properties			x
SFM-STB-CI UB533x210	C-UB (92		•
Structural Framing (Othe	r) (1) 🗸 🖯 🖬 🛙	dit Ty	pe
Identity Data		\$	~
Image			
Comments			
Mark	W1		
Remarks			
Phasing		\$	
ELS_Phase	1		Î.
Phase Created	New Construction		
Phase Demolished	None		
Other		\$	
Adjacent Structure			
			~
Properties help		Apply	

Set cross-section rotation if necessary





4.4.3 Create Strut / Short Strut / Tie

In Ribbon, click "Structure" \rightarrow click "BEAM" \rightarrow drag from starting point to end to create the strut / tie /short strut



In the Properties panel, select the corresponding type and dimension \rightarrow select the reference level \rightarrow Fill in "Mark" for identification of element \rightarrow Fill in "ELS_Phase" to identify the phasing (i.e. 1,2,3,4 ... etc.)

Properties			×
SFM-STB-CIC UB533x210x9	-UB 12		
Structural Framing (Other)	(1) ~	Edit Ty	pe
Identity Data		\$	~
Image		1	
Comments			
Mark	W1		
Remarks			ĺ.
Phasing		\$	
ELS_Phase	1		L.
Phase Created	New Construction		1
Phase Demolished	None		
Other		\$	-
Adjacent Structure		1	
Adjacent Structure Properties help		Apply	Contract of Contra



Repeat the above steps



Add Tag in plan view/ section view (Refer to section 7.1.2 Add Tags – Tag by Category)

Category	Family	Туре
Structural Framing	ANN-FTG-CIC- Rectangular	Standard
Structural Column	ANN-SCG-CIC	Mark



4.4.4 Create Stage Topo / Final Topo

In Ribbon, click "Massing & Site" \rightarrow click "Toposurface" \rightarrow Input surface "Elevation" \rightarrow click "Place Point" on specific elevation \rightarrow click "Tick" \rightarrow Repeat above steps for different elevations

Toposurface	Site Componen	Parking t Componer	ıt		
	Wodel	bite	-	1.000	
Modify Edit	Surface	Elevation	0.000	Absolute Elevation	~



In the Properties panel, fill in "ELS_Phase" and "Name" to identify the phasing (i.e. 1,2,3,4 ...etc.) and the name of the toposurface (i.e. 1,2,3,4 ...etc.). Select "Earth" for Material.

Properties		×
R		
Topography (1)	~ 88	Edit Type
Materials and Finishes		* ^
Material	Earth	
Dimensions		*
Projected Area	1389.921 m ²	
Surface Area	1389.921 m ²	
Identity Data		\$
Image	contrator a la contrata de contrator de la cont	
Comments		
Name	1	
Mark		
Workset	ELS	
Edited by		
Phasing		\$
ELS_Phase	1	
Phase Created	New Construction	

For final excavation toposurface, fill in "Final" for Name and select "Final Excavation Level" for Material.

Properties			×
R			*
Topography (1)	✓ 68 B	dit Ty	pe
Materials and Finishes		\$	^
Material	Final Excavation Level		
Dimensions		\$	
Projected Area	266.097 m ²		
Surface Area	266.097 m ²		
Identity Data		\$	
Image		. I	
Comments			
Name	Final		
Mark			
Workset	ELS		
Edited by			
Phasing		\$	
ELS_Phase	8	in in	É.
Phase Created	New Construction		
Phase Demolished	None		~



Add Symbol in plan view (Refer to section 7.1.4 Add annotation symbol)

Category	Family	Туре
Generic Annotation	ANN-GNN-CIC-Cut_Slope	5mm 10mm

Add spot elevation for final excavation in plan view

In ribbon \rightarrow click "Annotate" \rightarrow "Spot Elevation" \rightarrow select "SPE-AEC-Final_Excavation_Level_Prefix" in properties panel \rightarrow place to the desired location.



4.5 Ground Investigation

The following objects will be modelled:

- Bored Hole
- Standard penetration tests result
- Derofile for inferred boundaries of different geological strata
- Instrument checkpoints

4.5.1 Insert Bored Hole using Dynamo

Prepare the bored hole coordination table in excel format for dynamo input. Basic information shall be input by the user:

- Bored hole number
- □ Soil / rock layer
- Easting coordination

- Northing coordination
- □ Layer top-level (mPD)
- Layer bottom level (mPD)

BH no.	Soil / Rock Layer	Easting	Northing	Layer Top Level (mPD)	Layer Bottom Level (mPD)
BH1	FILL	835338517	819787853.8	4019.447	-4480.553
BH1	V	835338517	819787853.8	-4480.553	-5980.553
BH1	, II.,	835338517	819787853.8	-5980.553	-8480.553
BH1	V	835338517	819787853.8	-8480.553	-27480.5529
BH1	IV	835338517	819787853.8	-27480.5529	-30100.5529
BH1		835338517	819787853.8	-30100.5529	-33780.5529
BH1	IV	835338517	819787853.8	-33780.5529	-34680.5529
BH1		835338517	819787853.8	-34680.5529	-36860.5529
BH1	I	835338517	819787853.8	-36860.5529	-38800.5529
BH1		835338517	819787853.8	-38800.5529	-39380.5529
BH1	II.	835338517	819787853.8	-39380.5529	-40730.5528
BH1		835338517	819787853.8	-40730.5528	-41090.5528
BH1	II	835338517	819787853.8	-41090.5528	-41880.5528
BH1		835338517	819787853.8	-41880.5528	-42560.5528
BH1	I	835338517	819787853.8	-42560.5528	-43430.5528
BH1		835338517	819787853.8	-43430.5528	-43800.5528
BH1	I II	835338517	819787853 8	-43800 5528	-44930 5528

Click "Manage" in ribbon → click "Dynamo"

(Remark: User may download Dynamo from the below website: https://dynamobim.org/download/)



Open dynamo user interface in window \rightarrow Open dynamo file "bh_gen(v1.3.4).dyn"

R Sysame			- D X
	00		6
	27.1		
	Dv 🔝	namo	
	Th New	ADR	
	Contraction Banda	Terramo ashrina	
	To open	and the second second	
	(head) (255571).	REPERTATE	
		[7]# Gening Started	
	Aurecon Dynamo Standard um	finit Oynamo Primer	
	spt.genty1.3.4) Inte	(S) video Tutorials	
	66,gm(v1.5.4) (Dynamo Distionery	
	Example - Bridge Creation (1991)		
	Drample - Place From Dicel		
		C Giftud repository	
	BACKUT	Ő Sendiksues	
	an suprantine		
		SAMAGES	
		Samples Samples Basics, Basic01.dyn Basics, Basic02.dyn Basics, Basic02.dyn	
		 Caré Core, Attractor Point dyn Care, Code@odsa.dyn Care, UtaAtt.exet.dyn 	



Click to edit "File Path" \rightarrow Choose the corresponding excel file of the bored hole coordination table.



Edit "Family Type" in Dynamo window \rightarrow change the type to "STE-OTR-CIC-Borehole: STE-OTR-CIC- Borehole"







Close the Dynamo window \rightarrow present bored hole elements in Revit screen



4.5.2 Insert Standard penetration test result using Dynamo

Prepare a standard penetration test point table in excel format for dynamo input. Basic information shall be input by user:

- Count
- Easting
- Northing
- Position Z
- Value

Count	Easting	Northing	Position Z	Value
BH1	835338517	819787853.8	501.0366	N=9
BH1	835338517	819787853.8	-1498.9634	N=10
BH1	835338517	819787853.8	-4998.9634	N=15
BH1	835338517	819787853.8	-8998.9634	N=15
BH1	835338517	819787853.8	-10998.963	N=19
BH1	835338517	819787853.8	-12998.963	N=24
BH1	835338517	819787853.8	-14998.963	N=26
BH1	835338517	819787853.8	-16998.963	N=72
BH1	835338517	819787853.8	-18998.963	N=76
BH1	835338517	819787853.8	-20998.963	N=97
DUR	005000547	010707050.0	00000 000	11 400

Click "Manage" in ribbon \rightarrow click "Dynamo" again for standard penetration test (SPT) input



Open dynamo user interface in window \rightarrow Open dynamo file "spt_gen(v1.3.4).dyn" Click to edit "File Path" \rightarrow Choose the corresponding excel file

Edit "Family Type" in Dynamo window → change the family type to "STE-OTR-CIC-Borehole_SPT: STE-OTR-CIC-Borehole_SPT"


Click "Run" in Dynamo window



Close the Dynamo window \rightarrow present SPT elements in Revit screen Select a bored hole \rightarrow edit the rockhead level manually.

Properties	2	🖸 🛅 2009 - MONITORING PLAN 🗢 🚱 (3D) 🛛 🗙
STE-OTR-CIC	-Borehole	
Site (1)	V 📴 Edit Type	
Text		
Soil Layer	CDG	Ber
Dimensions		
Angle	0.00*	
Bearing	0.00*	
Diameter	500.000	
Length	19000.000	
Identity Data	\$	
Base Elevation	-27480.553	j 📥 📔 📕
Easting	835338516.960	
Northing	819787853.815	□ (P-3)————————————————————————————————————
Rockhead Level	0.000	
Top Elevation	-8480.553	
Image] (P-2)
Comments		
Mark	BH1(P)	
Phasing	1	
Phase Created	New Construction	
Phase Demolished	None	
Adaptive Component	4	
		Α

Important Note:

In the properties panel, "soil layer", "Diameter", "Base Elevation", "Easting", "Northing", "Rock Head Level", "Mark" are automatically generated by Dynamo input from previous steps.

Add Tag in plan view/ section view (Refer to section 7.1.2 Add Tags – Tag by Category)

Category	Family	Туре
Site	ANN-STG-CIC-Boredhole	Elevation – Layer
		Elevation – Mark
		Elevation - N Value
		Plan – Down
		Plan - Up



4.5.3 Create rockhead profile

In Ribbon, click "Insert" → click "Import CAD" → select the rockhead CAD file



Make sure to unclick "Current view only" \rightarrow place the CAD file to the desired location.

Favorites	ead3D.dwg Il Framming Plan	(3to29F).dwg			
	(Destination of	-			
Decklop File nam	e: Rocknead.su.d	wg		~	
Pies of typ	e: DWGHies (*.o	wg)		×]	
Current view only	Colors:	Preserve v	Positioning:	Manual - Center	Ŷ
	Layers/Levels:	Al v	Place at:	SITE	~
	Import units:	milimeter 🗸	1.000000	Orient to View	
Tools 👻		Correct lines that	are slightly off axis	Open	Cancel
View Scale 1:100 Scale Value 1:100 Display Model Normal Detail Level Medium Parts Visibility Show Original Visibility/Grap Edit Graphic Displ Edit Properties help Apply		0		in the second se	20 413 80 613 10 412 80
Project Browser - Project3 × Display Content of the second seco	6839 9839	- 92.819 - 92.819	-02.53 -02.64 -02.64	68970 8990 8990 8090 812 812 813 80 80 80 80 80 80 80 80 80 80 80 80 80	<u>م</u>
Project Browser - Project3 BIM Track**	1:100 🖾	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 9 CR 60 Ta <		> _

In Ribbon, click "Massing & Site" → click "Toposurface"



Click "Select Import Instance" → select the imported rockhead CAD file



Select the layer(s) that contains the elevation points of the profile \rightarrow click "OK" to generate the toposurface.

_0	^	Check All
Defpoints		Check None
_HSNO _rev_A _SITE BOUNDARY		Invert
	¥.	
<	>	

In properties panel, fill in "BH Rock" for Name.



4.5.4 Create profile for inferred boundaries of different geological strata

Select "BOREDHOLE" plan under Floor Plans in Project Browser. In Ribbon, click "Insert" \rightarrow click

Open a site plan in Revit \rightarrow click "Massing & Site" in ribbon \rightarrow click "Toposurface" under Model Site.



Place point and set the elevation on the Toposurface according to the inferred boundaries for each bored hole \rightarrow click "Tick".



In the properties panel, fill in the name of each boundary (ie. BH MD, BH ALLU, BH CDG, etc.) in "Name"

Properties	×
R	÷
Topography (1)	✓ Ba Edit Type
Materials and Finishes	*
Material	<by category=""></by>
Dimensions	\$
Projected Area	2306.662 m ²
Surface Area	2348.805 m ²
Identity Data	\$
Image	
Comments	
Name	BH CDG
Mark	
Workset	Site

4.5.5 Create Instrument check point

The followings instrument check point object will be modelled:

- Building settlement marker
- Building Tilting check point with vertical displacement
- Ground settlement check point
- Utility settlement monitoring point on ground
- Vibration check point
- Observation Well
- Pump Well
- Recharge Well
- Standpipe with piezometer

Select "MONITORING CHECK POINT" plan under Floor Plans in Project Browser. In Ribbon, click "Massing & Site" → click "Site Component"

5	\triangle		
Toposurface	Site Component	Parking Component	Building Pad
	Model S	ite	й И

Select the specific types of instrument marker in the properties panel.

Properties X	
STE-OTR-CIC-Monitoring- Vibration_Check_Point	
Search	ρ
	· · · · · · · · · · · · · · · · · · ·
SIE-DIR-CIC-Monitoring-Pumpwell	
STE-OTR-CIC-Monitoring-Pumpwell	
STE-DTR-CIC-Monitoring-Recharge_Well	
STE-OTR-CIC-Monitoring-Recharge_Well	
STE-OTR-CIC-Monitoring-Standpipe	
STE-DTR-CIC-Monitoring-Standpipe	
STE-OTR-CIC-Monitoring-Utility_Settlement	
STE-OTR-CIC-Monitoring-Utility_Settlement	
STE-DTR-CIC-Monitoring-Vibration_Check_Point	
STE-OTR-CIC-Monitoring-Vibration_Check_Point	

Place the object to the designed location.



In the properties panel, fill in "Name" for identification of element. Select Up/Down/Left/Right for the display location of the name.

Properties		×
STE-OTR-CIC-Mon	itoring-Standpipe	
Site (1)	🗸 🖯 Edit	Туре
Constraints		\$
Level	EXISTING GROUND LEVEL	
Host	Surface	
Offset	0.000	
Moves With Nearby Elements		
Identity Data		\$
Name	SP1(P)	
Image		T
Comments		
Mark		
Phasing		\$
Phase Created	New Construction	
Phase Demolished	None	an e sha
Other		\$
Up		
Down		
Left		
Right		

4.6 Site Formation

The following objects will be modelled for site formation plan:

- □ Site formation profile
- Site drainage
- Retaining wall
- Soil nail

4.6.1 Create Site formation profile

Open a "SITE FORMATION" plan under Floor Plans in Project Browser \rightarrow click "Massing & Site" in ribbon \rightarrow click "Toposurface" under Model Site.



Place point and set the elevation on the Toposurface to create \rightarrow click "Tick".



Repeat the above steps for a different stage of site profile.

In the properties panel, fill in "SF" for Name for identification of element.

Properties			×
R			,
Topography (1)	~ 8	品 Edit Typ	рe
Materials and Finishes		\$	
Material	Site - Sloped		
Dimensions	n Shiri chiani chinin - Inni	*	
Projected Area	2218.568 m ²		
Surface Area	2601.295 m ²		
Identity Data		\$	
Image			
Comments			
Name	SF		
Mark			
Workset	Site		-
Properties help		Apply	

Add Symbol in plan view (Refer to section 7.1.4 Add annotation symbol)

Category	Family	Туре
Detail Item	DTL-OTR-CIC-Slope_Label	Soil Cut Slope
		Soil Fill Slope
		Rock Cut Slope
		Rock Fill Slope

Add Spot slope in plan view

In ribbon \rightarrow click "Annotate" \rightarrow "Spot Slope" \rightarrow select "Sloped Toposurface" in properties panel \rightarrow place to the desired slope.



4.6.2 Create Site drainage

Open "SITE FORMATION" plan under Floor Plans in Project Browser. In Ribbon, click "Massing & Site" → click "Site Component"

5	\triangle		
Toposurface	Site Component	Parking Component	Building Pad
	Model S	ite	ĸ

Select "STE-STU-CIC-Step_Channel" or "STE-STU-CIC-U_Channel" in the properties panel.

Properties	×	
	STE-STU-CIC-U_Channel 225 x 450	
Search	U	م
STE-S	STU-CIC-Step_Channel	
300 x	< 450	
STE-S	STU-CIC-U_Channel	
225 x	« 450	
225 x	< 500	2

Click "Place on Work Plane" \rightarrow Drag from starting point to end to create the channel.



Channel sizes can be adjusted by clicking "Edit Type" in the properties panel. "Type Comments" define the text showing on the plan view.

amily:	STE-STU-CIC-U	Load		
an in fr			2000	
Type:	225 x 450	~	Duplicate	
		[Rename	
ype Paran	Parameter	Value	=	,
Constrain	nts		*	
b		385.000		
d		450.000		
t		80.000	none of the second s	
t1		100.000	0	
Dia		225.000		
Materials	and Finishes		*	
Material '	1	Concrete_Cast In Situ		
Identity	Data		\$	
Type Ima	ge			
Keynote			1	
Model			0	
Manufact	turer			
Type Cor	nments	225UC		
URL				

4.6.3 Create Retaining wall

Open "SITE FORMATION" under Floor Plans in Project Browser \rightarrow Click "Structure" in ribbon \rightarrow "Model" \rightarrow "Component" \rightarrow click "Model In-Place"



Select "Site" in the Family Category and Parameters dialogue and fill in the name of retaining wall. Draw the retaining wall by using "Forms" tools.

₹J			Ţ
Modify		Extrusion Blend Revolve Sweep Swept V Blend Fo	oid orms
Select 🕶	Properties	Forms	



4.6.4 Create Soil nail

Open "Site Formation 3D" under 3D Views in Project Browser. In Ribbon, click "Massing & Site" \rightarrow click "Site Component"



Select "STE-OTH-CIC-Soil_Nail" in the properties panel.

Properties		×
İ	STE-OTH-CIC-Soil_Nail	-
Search		٩
STE-O	TH-CIC-Soil_Nail	^
STE-O	TH-CIC-Soil_Nail	
STE-O	TR-CIC-Borehole	
STE-O	TR-CIC-Borehole	
	TO 010 D 1 1 0DT	

Place it to the designed location along the surface of the toposurface.



In the properties panel, fill in "Name" for identification of element.

Properties X					
STE-OTH-CIC-Soil	I_Nail		•		
Site (1)	~ 🛱 Ec	dit Typ	pe		
Constraints		\$	^		
Level	EXISTING GROUND LEVEL				
Host	Surface				
Offset	0.000				
Moves With Nearby Elements					
Dimensions		\$			
Bearing	260.00°				
Inclined	23.00°				
Identity Data		\$			
Image					
Comments					
Mark	A1				

Add Tag in plan view (Refer to section 7.1.2 Add Tags - Tag by Category)

Category	Family	Туре
Site	ANN-STG-CIC-Soil_Nail	Up
		Down



4.7 Drainage

The following objects will be modelled for drainage plan:

- Drainage pipe
- Drain
- Sanitary fitment
- Manhole / Sump Pit / Gully / Trap / Petrol Interceptor

4.7.1 Create Drainage pipe

In Ribbon, click "System" → click "Pipe" under "Plumbing & Piping"



Select the specific system type in the properties panel.

×
Q

In the properties panel, specific the System Type of the pipe.

Properties			×
Pipe Types DR-WP			Ţ
Pipes (1)	~ E	Edit Type	e
Dimensions		\$	~
Outside Diameter	63.0 mm		
Inside Diameter	50.0 mm		
Size	50 mmø		
Length	2040.8		
Mechanical		\$	
System Classification	Sanitary		
System Type	DR-Waste		
System Name	WP 56		
System Abbreviation	WP		
Pipe Segment	PVC-C - 727-2		
Diameter	50.0 mm		
Connection Type	Generic		
Roughness	0.00150 mm		
Material	PVC-C		
Cahadula/Tuna	ר דרד		~
Properties help		Apply	

Under ribbon panel, select pipe diameter and offset from level.

Modify Place Pipe Diamet	er: 50.0 mm	~	Offset:	-50.0 mm	~	Ľ	Apply	
----------------------------	-------------	---	---------	----------	---	---	-------	--

Specific the slope value for the sloped pipe.



Drag from starting point to end to create the pipe.



Add slope symbol to the sloped pipe

In ribbon \rightarrow click "Annotate" \rightarrow "Spot Slope" \rightarrow select "Pipe Direction" in properties panel \rightarrow place to the desired pipe.

Architecture	Structure	Syste	ems In	sert A	nnotate	Analyze	Massing
Aligned Line	→ <u>_</u> ar Angular	Radial	Diameter	Arc Length	Spot Elevation	Spot Coordinate	Spot Slope
			Dimensi	on 🔻			Contract Contract

In the properties panel, fill in 0mm to "Offset from Reference".

Properties	×
Spot Slopes Pipe Direction	on 👻
Spot Slopes (1)	🗸 🔂 Edit Type
Graphics	*
Slope Representation	Arrow
Offset from Reference	0.0000 mm
Text	*



4.7.2 Create Drain

In Ribbon, click "System" → click "Plumbing Fixture" under "Plumbing & Piping"



Select the specific drain type in the properties panel.

Prope	rties	×		
1	PLM-DRN-AEC-Floor-FD TFD 50mm	-		
Sean	ch	Q		
1	PLM-DRN-AEC-Floor-FD	^		
	FD 50mm			
	FD 100mm			
	TFD 50mm			
	TSD 50mm			
8	PLM-DRN-AEC-Floor-RWO			
	125 mm Strainer - RWO 100 mm			
1	PLM-DRN-AEC-Floor-VFD2			
	VFD 50mm			

Place it to the designed location.



Add Tag in plan view (Refer to section 7.1.2 Add Tags - Tag by Category)

Category	Family	Туре
Plumbing Fixture	ANN-PMG-CIC	Type Mark (RWP)
		Type Mark (WP)

4.7.3 Create Sanitary fitment

In Ribbon, click "System" → click "Plumbing Fixture" under "Plumbing & Piping"



Select the specific sanitary fitment item in properties panel \rightarrow Place it to the designed location

Properties	×
PLM-SNK-AEC-Bath 440x350x120mm	•
Search	٩
725 mmx950 mm - Private 775 mmx1025 mm - Private	^
775 mmx1065 mm - Private	
SPLM-SNK-AEC-Bath	
440x350x120mm	
PLM-SNK-AEC-Kitchen	
450x450x230mm	
PLM-URN-AEC-Wall_Hung	
20 mm Flush Valve	
PLM-WCS-AEC-Flush_Tank	
Private - 6.1 Lpf	~

4.7.4 Create Manhole / Sump Pit / Gully / Trap / Petrol Interceptor

In Ribbon, click "System" → click "Plumbing Fixture" under "Plumbing & Piping"



Select the specific item in properties panel \rightarrow Place it to the designed location

Prop	erties	×
	PLM-OTR-Grease_Trap 1650(L) x 900(W) x 1000(D)	•
Sea	rch	Q
	PLM-OTR-Grease_Trap	^
	1650(L) x 900(W) x 1000(D)	
	2050(L) × 1000(W) × 1300(D)	
-	PLM-OTR-Manhole_Foul_Water	
	TYPE E	
	TYPE T1	
3	PLM-OTR-Manhole_Storm_Water	
	TYPE T1	
9	PLM-OTR-Open_Trapped_Gully	
	OTG - 100 (RWP)	
	OTG - 100 (WP)	~

Add Tag in plan view (Refer to section 7.1.2 Add Tags – Tag by Category)

Category	Family	Туре
Plumbing Fixture	ANN-PMG-CIC	Detail
Tixture		(RWP)
		Detail
		(SWP)
		Detail (WP)

4.8 Curtain Wall

The following objects will be modelled for curtain wall plan:

- Embed
- Mullion and transom
- Glass panel and louvre

4.8.1 Create Embed

In Ribbon, click "Structure" → click "Component" under "Model"



Select the specific item in properties panel \rightarrow Place it to the designed location

Properties	×
Column Base Plate-4 Hole 200x200x12mm	
Search	٩
Column Base Plate-4 Hole	
200x200x12mm	
Connection Hor_Detachable louvre	
Connection Hor_Detachable louvre	

4.8.2 Create mullion and transom

Create Curtain wall by clicking "Architecture" \rightarrow "Wall" \rightarrow select "Curtain Wall" in the properties panel



Create curtain grid by clicking "Architecture" → "Build" → "Curtain Grid"



Add mullion by clicking "Architecture" \rightarrow "Build" \rightarrow "Mullion" \rightarrow Select the specific type of mullion in properties \rightarrow Place it to the designed curtain grid location

	Rectangular Mullion	
	Wallon_Soz24Shim	
Search		Q
Rectangu	ular Mullion	
Co	oncept 90x200mm	
Co	oncept 90x200mm Corner Right	
Co	oncept 150x200mm	
Co	oncept 200x200mm	
Co	oncept 265x200mm	
M	ullion_90 x 230mm	
M	ullion_90x245mm	
M	ullion_90X430mm	

 \otimes

4.8.3 Create glass panel / louvre

For each panel inside, select the type of curtain wall panel in properties.



5 Configuring Schedules

5.1 Superstructure

5.1.1 Column Schedule

Click "COLUMN SCHEDULE" in Schedules/Quantities (all) of Project Browser.

A	В
COLUMN MARK	SIZE (mm)
C1A	250 x 875
C1B	235 x 825
C1C	275 x 450
C2A	250 x 775
C2B	235 x 825
C2C	275 x 450
C3	250 x 675
C4	300 x 300

Auto field	generated	COLUMN MARK, SIZE
Manually	Input field	1

5.1.2 Tower Floor Level Schedule

Click "TOWER FLOOR LEVEL" in Schedules/Quantities (all) of Project Browser.

Α	B
LEVEL	S.F.L.
5/F	+26.525
6/F	+29.850
7/F	+33.175
8/F	+36.500
9/F	+39.825
10/F	+43.150
11/F	+46.475
12/F	+49.800

Auto generated field	LEVEL, S.F.L.
Manually Input field	1

5.1.3 Wall RC Schedule

Click "R.C. WALL SCHEDULE" in Schedules/Quantities (all) of Project Browser.

Α	В	C	D	E	F	
FLOOR	WALL MARK	CONCRETE GRADE	THICKNESS (mm)	VERTICAL BARS	HORIZONTAL BAR	
3F	W1	C60	250	T40-150	T10-150	
3F	W2	C60	250	T25-125	T12-125	
3F	W3	C60	200	T20-125	T10-100	
3F	W4	C60	150	T20-150	T10-150	
3F	W4	C60	200	T20-125	T10-100	
3F	W5A	C60	200	T20-125	T10-100	
	· · · · ·					
G	Н	1				
BINE	DER					
HORIZONTAL	VERTICAL	STEEL RATIO (%)				
T12-150	150	3.4				
		1.3				
		1.3				
		1.4				
		1.3				
		13				

FLOOR, WALL MARK, THICKNESS
CONCRETE GRADE, VERTICAL BARS, HORIZONTAL BARS, BINDER
(HORIZONTAL), BINDER(VERTICAL), STEEL RATIO

5.1.4 Beam RC Schedule

Click "R.C. BEAM SCHEDULE" in Schedules/Quantities (all) of Project Browser.

									<r.c.< th=""><th>BEAM SC</th><th>HEDULE</th><th>></th></r.c.<>	BEAM SC	HEDULE	>
A	В	C	D	E	F	G	Н	1	J	K	L	M
DEAL HADY	BEAM SIZE						REINFO	RCEMENT				
DEAM MARK	(BXD)	ELEV. REFER	а	al	a2	b	b1	C	d	e	f	g
CTB1	200 x 300	E9	2T20	-	-	-	2T16	-	-	-	-	-
CTB1a	200 x 300	E9	2T20	-	-	-	2T16	-	-	-	-	-
CTB51	200 x 600	E9a	2T20	2720	2T20	2T20	-	-	-	-	-	T10-225 E.F.
CTB54	200 x 900	E9a	2T20	2T20	2T20	2T20	•	-	-	-	-	T10-225 E.F.
TB2	200 x 300	E10	2T16	-	-	2T16	•	-	-	-	•	-
TB3	400 x 600	E5	4T25	-	-	4T25	•	4725	4T25	4T25	4T20	-
TB4	400 x 600	E4	4T25	-	-	4T25	•	-	4T25	-	4T20	-
TB5	400 x 600	E4	4T25	-	-	4T25	-	-	4T25	-	4T20	-

N	0	P	Q	R	S	т	
	REINFORCEMENT	DIMENSION					
LINKS 1	LINKS 2	LINKS 3	Α	В	C	D	
ج	T10-150(2 LEGS)	·>	2550	-		-	
<	T10-150(2 LEGS)	>	2550	-			
<	T10-150(2 LEGS)	·>	1000	-		-	
¢	T10-150(2 LEGS)	>	1000	-			
<	T10-200(2 LEGS)	>	-				
<	T10-200(4 LEGS)	·>	-	1300	1000		
<	T10-200(2 LEGS) TORSIONAL L	>	-	1000	1800	-	
<	T10-200(2 LEGS) TORSIONAL L	>	100	1800	1800	100	

Auto ger field	nerated	BEAM MARK, BEAM SIZE
Manually Inpu	ut field	ELEV. REFER, REINFORCEMENT (a-g), REINFORCEMENT (Links 1- 3), DIMENSION (A-D)

5.2 Foundation

5.2.1 Bored Pile Loading Schedule

Click "BORED PILE LOADING SCHEDULE" in Schedules/Quantities (all) of Project Browser.

						00	(AA)	(W)	Z=W-0.3-(X)-(Y)	(AB)=(AA)-(Z)
BORED PILE WARK	BORED PILE CAP THICKNESS (FOR REFERENCE ONLY)	BORED PILE DIAMETER	BORED PILE EFFECTIVE SHAFT DIAMETER	ROCK SOCKET DIAMETER	PILE BASE DIAMETER	BELLOUT DEPTH	CUT-OFF LEVEL	TENTATIVE ROCKHEAD LEVEL	TENTATIVE FOUNDING LEVEL	TENTATIVE PILE LENGTH
	(m)	(m)	(m)	(m)	(m)	(m)	(mPD)	(mPD)	(mPD)	(m)
BP1	2.5	30	2.80	2.80	4.5	1.5	-8.775	-45.5	-50.90	42.125
BP2	2.5	25	2.35	2.35	3.75	1.25	-8.775	-44.5	-49.15	40.375
EP3	2.5	25	2.35	2.35	3.75	1.25	-8.775	-46.5	-51.15	42.375
BP4	2.5	30	2.80	2.80	4.5	1.5	-11 275	-47.0	-52.40	43.625
BP5	2.5	3.0	2.80	2.80	4.5	1.5	-11.275	-50.0	-56.80	45.525

(Y)	(a)	(b)	(c)=(a)+(b)	(d)	(b)+(c)	(6)	(f)=(b)+(d)+(e)	(h)	(i)	0	(k)
EFFECTIVE BOCK SOCKET	SELF-WEIGHT OF BORED PILE	ELF-WEIGHT BORED PILE Dome (setal) De		SDI (betal)	TOTAL DEAD	LIVE LOAD (LL)		(Mmay (total)	TOTAL UPLIFT FORCE DUE TO	ADDITIONAL L STEPPING	CAD DUE TO EFFECT
LENGTH	(SUBMERGED) (SWP)	Lineration	Line + Gre	orelicent	+ SDL	(total)	DE TODE TEL	vimax (total)	GROUND WATER (U)	WITHOUT WIND	WITH WIND
(m)	(kN)	(KN)	(kN)	(6N)	(KN)	(kN)	(63)	(KN)	(kN)	(kN)	(kN)
3.6	3820	43000	46820	14700	57700	13700	71400	18500	-20400	90	99
3.1	2580	33700	36260	14100	47800	9100	56900	18000	-9600	0	0
3.1	2700	37500	40200	13500	51000	13000	64000	14700	-15500	0	0
3.6	3950	45600	49550	17500	63100	15200	78300	15800	-21400	0	0
5.0	4120	49000	53120	18100	67100	15900	83000	24900	-25300	49	61

	(f)	(f)+(h)	(()+(a)+())	(f)+ h)+ a)+(k)	(l)=(b)+(i)	(m)=(b)-(h)+(i)	(n)=(o)-1.5*(h)+1.5 *(i)			1 ³¹
		MAX. PI	LE LOAD			MIN. PILE LOAD				
BORED PILE MARK DL +	DL+SDL+LL	DL + SDL + LL DL + SDL + LL + Wmax	DL + SDL + LL + Stepping Load	DL + SDL + LL + Wmax + Stepping Load	Dmin + SWP-U	Dmin + SWP - Wimax - U	Dmin + SWP - 1.5Wmax - 1.5U	VERTIC	AL BARS	LINKS
	(600)		(HN)	(idN)	(HN)	(kN)	(kN)	LAYER 1	LAYER 2	
BP1	71400	89900	75300	93819	26420	7920	-11530	54 T40	50 T40	T16 / 300 (2 rings)
BP2	56900	74900	59480	77480	26680	8680	-5120	44 T50	40 T50	T16 / 200 (1 rings)
EP3	64000	78700	66700	81400	24700	10000	-5100	44 T50	40 T50	T16 / 200 (1 rings)
BP4	78300	94100	82250	98050	28150	12350	-6250	54 T40	50 T40	T16 / 300 (2 rings)
EP5	63000	107900	87169	112081	27820	2920	-22180	54 T40	50 T40	T16 / 300 (2 rings)

(a)	(p)=(o)*1.25	ic)	(r)=(q)*1.25	(r1)	(Fa)	(a1)=Min of(((r1),(p1)(3))+(e)	(u1)=Min of(((r1)*2(p1))+(e)	(u)=(o)+(q)	(v)=(u)*1.25	(b)+0.9%(u1)-1.5 '(b)+1.5*(i)>0	(b)+(a1)-(h)+(i)>0	
PILE BARING (COMPRE	CAPACITY ESSION	ROCK FRICTION	(COMPRESSION)		ROCK/SOIL	UPLIFT RE	SISTANCE	BORED PILE BEA (COMPRI	RING CAPACITY ESSION)	STABILIT	Y CHECK	
WITHOUT WIND	WITH WIND	WITHOUT WIND	WITH WIND	(TENSION)	MASS (SUBMERGED)	ALLOWABLE	ULTINATE	WITHOUT WIND	WITH WIND	Dmin + 0.9% -1.5Wmax - 1.5U	Dmin + Ra - Wmax - U	REFERENCE BORED HOLE
(kN)	(kN)	(6N)	(kN)	(6N)	(N)	Re (kN)	Fu (kN)	(6N)	(KN)	(44)	(kN)	
79530	99413	17250	21563	11090	21101	10854	24921	96780	120975	7079	14954	2
552.30	69038	12150	15188	8020	14707	7482	17287	67380	84225	7858	13582	
55230	69038	12150	15188	8020	15477	7859	16177	67380	84225	8559	15159	
79530	99413	17250	21563	11090	21899	11250	25849	96780	120975	13064	19650	5
79530	99413	17250	21563	15400	32120	14827	34920	96780	120975	5128	13627	

Auto field	generated	BORED PILE MARK, BORED PILE DIAMETER, PILE BASE DIAMETER, CUT-OFF LEVEL, TENTATIVE FOUNDING LEVEL
Manually	Input field	BORED PILE CAP THICKNESS, BORED PILE EFFECTIVE SHAFT DIAMETER, ROCK SOCKET DIAMETER, BELLOUT DEPTH, TENTATIVE ROCKHEAD LEVEL, TENTATIVE PILE LENGTH, EFFECTIVE ROCK SOCKET LENGTH, SELF-WEIGHT OF BORED PILE (SUBMERGED) (SWP), Dmin (total), SDL(total), LIVE LOAD (LL) (total), Wmax (total), TOTAL UPLIFT FORCE DUE TO GROUND WATER (U), ADDITIONAL LOAD DUE TO STEPPING EFFECT, VERTICAL BARS, LINKS, PILE BARING CAPACITY (COMPRESSION), ROCK FRICTION (COMPRESSION), ROCK FRICTION (TENSION), ROCK/SOIL MASS (SUBMERGED), REFERENCE BORED HOLE

5.2.2 Socket H-Pile Loading Schedule

Click "SOCKET H-PILE LOADING SCHEDULE" in Schedules/Quantities (all) of Project Browser.

		(A)	(AA)	(W)	(Z)=(W)-0.3-(Y)	(AB)=(AA)-(Z)	(Y)
PILE MARK	PILE CAP THICKNESS (FOR REFERENCE ONLY)	NUMBER OF PILES PER CAP	CUT-OFF LEVEL	TENTATIVE ROCKHEAD LEVEL	TENTATIVE FOUNDING LEVEL	TENTATIVE PILE LENGTH	EFFECTIVE ROCK SOCKET LENGTH
	(m)		(mPD)	(mPD)	(mPD)	(m)	(m)
SP1A	2.0	3	-8.275	-46.0	-53.3	45.025	7
SP1B	2.0	3	-8.275	-46.0	-53.3	45.025	7
SP1C	2.0	3	-8.275	-46.0	-53.3	45.025	7
SP2A	2.0	3	-8.275	-58.0	-65.3	57.025	7

(b)	(d)	(b)+(d)	(e)	(f)=(b)+(d)+(e)	(h)	(i)	(a)	0	(k)
Desig	901	TOTAL DEAD			Mana	UPLIFT FORCE DUE TO	SELF-WEIGHT(S	ADDITIONAL L STEPPING	OAD DUE TO BEFFECT
Dillin	- SUL	+ SDL		DC+ODC+CC	VVIDAX	GROUND WATER (U)	(SWP)	WITHOUT WIND	WITH WIND
(kN)	(kN)	(kN)	(kN)	(kIN)	(kN)	(kN)	(kN)	(kN)	(kN)
6590	3700	10290	3200	13490	1000	-7500	230	441	551
6590	3700	10290	3200	13490	1000	-7500	230	441	551
6590	3700	10290	3200	13490	1000	-7500	230	441	551
6890	4300	11190	3500	14690	1000	-8800	290	190	210

	1	(A)	(AA)	(W)	(Z)=(W)-0.3-(Y)	(AB)=(AA)-(Z)	(Y)
PILE MARK	PILE CAP THICKNESS (FOR REFERENCE ONLY)	NUMBER OF PILES PER CAP	CUT-OFF LEVEL	TENTATIVE ROCKHEAD LEVEL	TENTATIVE FOUNDING LEVEL	TENTATIVE PILE LENGTH	EFFECTIVE ROCK SOCKET LENGTH
	(m)		(mPD)	(mPD)	(mPD)	(m)	(m)
SP1A	2.0	3	-8.275	-46.0	-53.3	45.025	7
SP1B	2.0	3	-8.275	-46.0	-53.3	45.025	7
SP1C	2.0	3	-8.275	-46.0	-53.3	45.025	7
SP2A	2.0	3	-8.275	-58.0	-65.3	57.025	7
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.0000	141 30000 million	C 2000 V VV	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	a saturation of the	

(b)	(d)	(b)+(d)	(e)	(f)=(b)+(d)+(e)	(h)	(i)	(a)	Ø	(k)
Dmin SDL LOAD (DL) = + SDL	SDL LOAD (DL) = Dmir				Wmay	UPLIFT FORCE DUE TO	SELF-WEIGHT(S	ADDITIONAL LOAD DUE TO STEPPING EFFECT	
	+ SDL	LIVE COND (CC)	DETODETEE	THUMA	GROUND WATER (U)	(SWP)	WITHOUT WIND	WITH WIND	
(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)
6590	3700	10290	3200	13490	1000	-7500	230	441	551
6590	3700	10290	3200	13490	1000	-7500	230	441	551
6590	3700	10290	3200	13490	1000	-7500	230	441	551
6890	4300	11190	3500	14690	1000	-8800	290	190	210

Auto generated	PILE MARK, CUT-OFF LEVEL, TENTATIVE ROCKHEAD LEVEL,
field	TENTATIVE FOUNDING LEVEL
Manually Input field	PILE CAP THICKNESS, NUMBER OF PILES PER CAP, TENTATIVE PILE LENGTH, EFFECTIVE ROCK SOCKET LENGTH, Dmin, SDL, LIVE LOAD (LL), Wmax, UPLIFT FORCE DUE TO GROUND WATER (U), SELF- WEIGHT (SUBMERGED) (SWP), ADDITIONAL LOAD DUE TO STEPPING EFFECT, COMPRESSION CAPACITY (PER PILE), TENSION CAPACITY (TENSION), ROCK/SOIL MASS (SUBMERGED) (PER PILE), REFERENCE BORED HOLE

5.2.3 Column Loading Schedule above Pile Cap

Click "COLUMN LOADING SCHEDULE ABOVE PILE CAP" in Schedules/Quantities (all) of Project Browser.

JL) = Dmin + S	GAD LOAD (DI	DF		20		λ.	st					(DAD (Dmin)	MIN DEAD L			A1001	NORMAL REPORT
Vx (kNm)	My (kNm)	Mr. (kNim)	P(kN)	Mz (kNiti)	Vy (kNm)	Vx (kNm)	My (kNm)	Mx (kNm)	P (kN)	Mz (khim)	Vy (kNm)	Vx (kNm)	My (kNim)	Mx (kNm)	P (kN)	ANGLE	LUCUSIN MARX
0	0	0	2400	0	0	0	0	0	800	0	0	0	0	0	1600	0	PC1
0	0	0	3500	0	0	0	0	0	1400	0	0	0	0	0	2100	0	PC2
0	0	0	4100	0	0	0	0	0	1700	0	0	0	0	0	2400	0	PC3
0	0	0	4300	0	0	0	0	0	2000	0	0	0	0	0	2300	0	PC4
0	0	0	3700	0	0	0	0	0	1400	0	0	0	0	0	2300	0	PC5

X				LIVELO	AD (LL)					DL.	11		
Vy (kNm)	Mz (kNim)	P (kN)	Mx (kNm)	My (kNm)	Vx (kNm)	Vy (kNm)	Mz (kNim)	P (kN)	Mx (kNim)	My (kNm)	Vx (kNm)	Vy (kNm)	Mz (kNm)
0	0	700	0	0	0	0	0	3100	0	0	0	0	0
0	0	900	0	0	0	0	0	4400	0	0	0	0	0
0	0	1000	0	0	0	0	0	5100	0	0	0	0	0
0	0	1000	0	0	0	0	0	5300	0	0	0	0	0
0	0	900	0	0	0	0	0	4600	0	0	0	0	0

													COLUM	IN LOADING	SCHEDULE A	BOVE PILE C	AP (2 OF 2)		
0000000000	A101 F				00					1	V90						WU		
COLUMN APPER	ANOLE	P (kN)	Vk (kN)	Vy (60%)	Mx (id/im)	My (kNm)	Mz (kNm)	P(kN)	Vx (kN)	Vy (kN)	Mx (kNm)	My (kNm)	Ma (kNim)	P (kN)	Vx (kN)	Vy (kN)	Mix (kNim)	My (kNm)	Ma (KNim)
PC1	0	-200	10	30	0	0	0	-1000	10	300	0	0	0	-400	10	80	0	0	0
PC2	0	100	10	30	0	0	0	1000	-10	290	0	0	0	200	10	80	0	0	0
PC3	0	-200	10	30	0	0	0	-1600	-10	390	0	0	0	-500	10	90	0	0	0
PC4	0	200	10	30	0	0	0	1600	10	370	0	0	0	400	10	- 90	0	0	0
PC5	0	-200	10	30	0	0	0	-1800	10	380	0	0	0	-500	10	90	0	0	0

			1	W					W	XAX		
Pik	(N)	Vx (kN)	Vy (kN)	Mx (kNm)	My (kNm)	Mz (kNm)	P (kN)	Vix (kN)	Vy (kN)	Mx (kNim)	My (kNm)	Mz (kNm)
-70	00	-10	230	0	0	0	1000	10	300	0	0	0
80	0	-10	230	0	0	0	1000	10	290	0	0	0
-12	00	-10	300	0	0	0	1600	10	390	0	0	0
130	00	-10	290	0	0	0	1600	10	370	0	0	0
-14	00	-10	300	0	0	0	1800	10	380	0	0	0

Auto field	generated	COLUMN MARK, DEAD LOAD (DL), DL + LL,
Manually	/ Input field	ANGLE, MIN DEAD LOAD (Dmin), SDL, LIVE LOAD (LL), W0, W90, WU, WV, WMAX

5.2.4 Wall Loading Schedule above Pile Cap

Click "WALL LOADING SCHEDULE ABOVE PILE CAP" in Schedules/Quantities (all) of Project Browser.

													WAL	LOADINGS	CHEDULE AB	OVE PILE CAR	(1 OF 2)		
INCOMENTAL ADDRESS	44/51 F.	1	1 (Loophan of)	MIN DEAD I	(Dmin)		and the second second	Sec.		5	ö.			C	ť	EAD LOAD (D	() = Dmin + S	ά.	
YOALL MARON	ANGLE	P (MN)	Mx (kNm)	My (kNm)	Vix (kNm)	Vy (kNm)	Mz (kNimi)	P (kN)	Mix (kNim)	My (kNm)	Vx (kNm)	Vy (kNitt)	M2 (KNM)	P (kN)	Mix (kNm)	My (kNm)	Vx (kNm)	Vy (kNim)	MZ (KNIM)
BW1	0	2300	0	-900	0	0	0	700	0	-500	0	0	0	3000	0	-1400	0	0	0
BW2	0	3200	0	-600	0	0	0	1100	0	-300	0	0	0	4300	0	-900	0	0	0
BW3	0	3200	0	-600	0	0	0	900	0	-300	0	0	0	4100	0	-900	0	0	0
BW4	0	2600	0	-300	0	0	0	400	0	-100	0	0	0	3000	0	-400	0	0	0
BW5	0	11300	0	-2500	0	0	0	2200	0	2600	0	0	0	13500	0	100	0	0	0

		UVELO	AD (LL)					DL.	+LL		
P (kN)	Mx (kNimji	My (kNim)	Vx (kNim)	Vy (kNim)	Mc (kNm)	P(KN)	Mx (kNim)	My (kNm)	Vx (kNm)	Vy (kNim)	Mz (kNm)
400	0	-200	0	0	0	3400	0	-1600	0	0	0
700	0	-100	0	0	0	5000	0	+1000	0	0	0
600	0	-100	0	0	0	4700	0	-1000	0	0	0
400	0	-100	0	0	0	3400	0	-500	0	0	0
4000	0	-3300	0	0	0	17500	0	-3200	0	0	0

													WAL	LOADINGS	CHEDULE AB	OVEPLECA	P (2 OF 2)		
WALL MARY	ANCHE				00		terror in the			V	190		a second f			V	VD1		
TIPLL SPON	ANGLE	P(RN)	Vx (kN)	Vy (M)	Mx (kNm)	My (kNm)	Mz (kNm)	P (8.N)	Vx (kN)	Vy (kN)	Mx (kNm)	My (kNm)	Mt (kNm)	P (kN)	Vic(RN)	Vy (kN)	Mx (kNm)	My (kNm)	Mz (kNm)
TW6A	90	-2600	-280	-10	0	-1100	0	8300	4330	-10	0	25500	0	-3300	200	-10	0	1800	0
TW6B	0	900	3170	10	0	27700	0	-47600	-160	-10	0	600	0	-5300	5340	-10	0	46800	0
TW6C	90	2400	120	-10	0	300	0	9100	5150	10	0	26700	0	5300	910	10	0	4100	0
Grand total: 3		700	3010	-10	0	26900	0	-30200	9870	-10	0	52800	0	-3300	6450	-10	0	52700	0

-		W	102					W	XAX		
P (8N)	Vx (kN)	Vy (kN)	Mx (kNm)	My (NNm)	Mz (kNm)	P (NN)	Vx (kN)	Vy (kN)	Mx (kNm)	My (kNm)	Mz (kNm)
9400	4330	-10	0	2220	0	9400	4880	10	0	25500	0
-40200	-3190	-10	0	-26100	0	47600	5340	10	0	46800	0
5300	4160	10	0	21900	0	9100	5150	10	0	26700	0
-25500	5300	-10	0	-1980	0	66100	15370	30	0	99000	0

	-2000 5300 -10	0 -1980 0 66100 15370 30 0 99000 0
Auto	generated	WALL MARK, DEAD LOAD (DL), DL + LL,
field		
Manually	Input field	ANGLE, MIN DEAD LOAD (Dmin), SDL, LIVE LOAD (LL), W0, W90, WU,
		WV, WMAX
		·

5.2.5 Tie Beam R.C. Details Schedule

Click "TIE BEAM R.C. DETAILS SCHEDULE" in Schedules/Quantities (all) of Project Browser.

					TIE B	EAM R.C. DETAILS	SCHEDULE		
TIE BEAM	BEAM SIZE	LENGTH	TOPLEVEL	TopLevel			STEEL BAR		
MARK	(D x B)	(m)	(Lv1)	(Lv2)	T1	T2	B1	B2	SB
TB1	1000 x 800	10.935	-6350	-6350	10T40	6T40	10T40	6T40	5T12 E.F.
TB2	1000 x 800	7.400	-6350	-6350	10T40	6T40	10T40	6T40	5T12 E.F.
TB3	1000 x 800	7.329	-6350	-6350	10T40	6 T40	10T40	6T40	5T12 E.F.
TB4	1000 x 800	10.936	-6350	-6350	10T40	6T40	10T40	6T40	5T12 E.F.

Link	SECTION REFERENCE	ELEVATION REFERENCE
T12-150 T.S.	SECTION S1	ELEVATION E1
T12-150 T.S.	SECTION S1	ELEVATION E1
T12-150 T.S.	SECTION S1	ELEVATION E1
T12-150 T.S.	SECTION S1	ELEVATION E1

Auto field	generated	TIE BEAM MARK, BEAM SIZE, LENGTH, TIE BEAM TOP LEVEL, TOP LEVEL (Lv1), TOP LEVEL (Lv2),
Manually	Input field	PILE CAP (P1), PILE CAP (P2), STEEL BAR, LINK, SECTION REFERENCE, ELEVATION REFERENCE

5.2.6 Ground Investigation Table of Rock Head

Click "GROUND INVESTIGATION TALBE OF ROCK HEAD" in Schedules/Quantities (all) of Project Browser.

<ground head="" investigation="" of="" rock="" talbe=""></ground>				
Α	В			
DRILL HOLE MARK	ROCKHEAD LEVEL (mPD)			
BH1(P)	-42.58			
BH2(P)	-59.31			
BH3	-38.48			
BH4	-34.69			
BH5(P)	-44.93			

Auto field	generated	DRILL HOLE MARK
Manually	Input field	ROCKHEAD LEVEL

5.3 Excavation and Lateral Support

5.3.1 Schedule of Horizontal Tie

Click "SCHEDULE OF HORIZONTAL TIE" in Schedules/Quantities (all) of Project Browser.

	SCHEDULE OF HO	RIZONTAL TIE	
ITEM	MEMBER MARK	GRADE	MEMBER SIZE
TIE	T1	S355	UC203x203x46

Auto field	generated	ITEM, GRADE, MEMBER SIZE
Manually	nput field	MEMBER MARK

5.3.2 Schedule of Main Strut

Click "SCHEDULE OF MAIN STRUT" in Schedules/Quantities (all) of Project Browser.

SCHEDULE OF MAIN STRUT						
PILE	LAYER	WALING MEMBER SIZE	PRELOAD (kN/m)	PRELOAD PER STRUT (kN)	HORIZONTAL LOAD (kN/m)	DESIGN LOAD FOR STRUT (kN)
A	1	305X305X97 kg/m UC	20	95	86	569
Α	2	305X305X97 kg/m UC	50	237	130	860
A	3	356X368X177 kg/m UC	100	473	251	1661
A	4	356X368X177 kg/m UC	300	1418	452	2990

Auto generated field	WALIN	NG MEME	BER SIZE,				
Manually Input field	PILE	TYPE,	LAYER,	PRELOAD,	PRELOAD	PER	STRUT,
	HORIZONTAL LOAD, DESIGN LOAD FOR STRUT						

5.3.3 Schedule of Secondary Strut and Corner Strut

Click "SCHEDULE OF SECONDARY STRUT AND CORNER STRUT" in Schedules/Quantities (all) of Project Browser.

SCHEDUL	E OF SEC	ONDARY STRUT AND CO	RNER STRUT
PILE TYPE	LAYER	WALING MEMBER SIZE	STRUT LEVEL (mPD)
A	1	356X368X202 kg/m UC	+3.1
A	2	356X368X202 kg/m UC	+1.6
A	3	356X368X202 kg/m UC	+0.1

Auto generated field	STRUT LEVEL, WALING MEMBER SIZE
Manually Input field	PILE TYPE, LAYER

5.3.4 Schedule of Vertical Tie

Click "SCHEDULE OF VERTICAL TIE" in Schedules/Quantities (all) of Project Browser.

	SCHEDULE OF V	ERTICAL TIE	
ITEM	MEMBER MARK	GRADE	MEMBER SIZE
VERTICAL TIE	D4	S355	UBP356x368x174

Auto generated field	ITEM, GRADE, MEMBER SIZE
Manually Input field	MEMBER MARK

5.3.5 Schedule of Wailing

Click "SCHEDULE OF WAILING" in Schedules/Quantities (all) of Project Browser.

		SCHEDUL	E OF WAILING		
PILE	LAYER	WALING MEMBER SIZE	COMPRESSION (kN)	SHEAR (kN)	MOMENT (kNm) =1.4*Fh* (3.15*2/9)
TYPE			=1.4*Fh* (1.414*3.15)	=1.4*Fh* (0.6*3.15)	
A	1	533X210X92 kg/m UB	531	228	100
A	2	533X210X92 kg/m UB	803	344	151
A	3	610X305X179 kg/m UB	1550	665	291

Auto field	generated	WALING MEMBER SIZE
Manually	Input field	PILE TYPE, LAYER, COMPRESSION, SHEAR, MOMENT

5.3.6 Section Properties of Horizontal Tie

Click "SECTION PROPERTIES OF HORIZONTAL TIE" in Schedules/Quantities (all) of Project Browser.

	SECTION PROPERTIES OF HORIZONTAL TIE									
ITEM	GRADE	SECTION AREA (cm²)	MOMENT OF INERTIA (cm4)	WEIGHT (kg/m)	SECTION MODULUS (cm ³)	DEPTH D (mm)	WIDTH B (mm)	WEB THICKNESS t (mm)	FLANGE THICKNESS T (mm)	
203X203X46 kg/m UC	S355	58.7	4570	46	450	203.2	203.6	7.2	11.0	

Auto generate	d ITEM,	GRADE,	SECTION	AREA,	MOMENT	OF	INERTIA,	WEIGHT,
field	SECT	ION MODU	JLUS, DEPT	H D, WI	DTH B, WE	ВТ⊦	ICKNESS t	, FLANGE
	THIC	NESS T						
Manually Input field	I /							

5.3.7 Section Properties of Short Strut/ Spacer

Click "SECTION PROPERTIES OF SHORT STRUT / SPACER" in Schedules/Quantities (all) of Project Browser.

			SECTION PROP	ERTIES OF SH	ORT STRUT / SPA	CER			
ITEM	GRADE	SECTION AREA (cm²)	MOMENT OF INERTIA (cm4)	WEIGHT (kg/m)	SECTION MODULUS (cm²)	DEPTH D (mm)	WIDTH B (mm)	WEB THICKNESS t (mm)	FLANGE THICKNESS T (mm)
152x89x24 kg/m CH	S355	30.4	1168	23.87	153	152.4	88.9	7.1	11.6

Auto generated field	ITEM, GRADE, SECTION AREA, MOMENT OF INERTIA, WEIGHT, SECTION MODULUS, DEPTH D, WIDTH B, WEB THICKNESS t, FLANGE THICKNESS T
Manually Input field	1

5.3.8 Section Properties of Struts

Click "SECTION PROPERTIES OF STRUTS" in Schedules/Quantities (all) of Project Browser.

	а.,			SECTIO	ON PROPERTIE	S OF STRUTS				
	ITEM	GRADE	SECTION AREA (cm²)	MOMENT OF INERTIA (cm4)	WEIGHT (kg/m)	SECTION MODULUS (cm²)	DEPTH D (mm)	WIDTH B (mm)	WEB THICKNESS t (mm)	FLANGE THICKNESS T (mm)
	305X305X97 kg/m UC	S355	123	22200	97	1450	307.9	305.3	9.9	15.4
	356X368X177 kg/m UC	S355	226	57100	177	3100	368.2	372.6	14.4	23.8
	356X368X202 kg/m UC	S355	257	66300	202	3540	374.6	374.7	16.5	27.0
uto Id	generated	TEM, SECTI THICK	GRADE, ON MODU NESS T	SECTIOI JLUS, DEF	N AREA PTH D, V	, MOMEI /IDTH B, V	NT OF WEB TH	INERTI CKNES	A, WEIGI S t, FLAN	HT, GE

5.3.9 Section Properties of Vertical Tie

/

Manually Input field

Click "SECTION PROPERTIES OF VERTICAL TIE" in Schedules/Quantities (all) of Project Browser.

			SECTION	PROPERTIES O	F VERTICAL TIE				
ITEM	GRADE	SECTION AREA	MOMENT OF INERTIA	WEIGHT (kg/m)	SECTION MODULUS (cm ³)	DEPTH D (mm)	WIDTH B (mm)	WEB THICKNESS t (mm)	FLANGE THICKNESS T (mm)
356X368X174 kg/m UBP	S355	221	51000	173.9	2820	361.4	378.5	20.3	20.4

Auto field	generated	ITEM, GRADE, SECTION AREA, MOMENT OF INERTIA, WEIGHT,
		THICKNESS T
Manually	Input field	/

5.3.10 Section Properties of Wailing

Click "SECTION PROPERTIES OF WAILING" in Schedules/Quantities (all) of Project Browser.

	SECTION PROPERTIES OF WAILING									
ПЕМ	GRADE	SECTION AREA (cm²)	MOMENT OF INERTIA (cm4)	WEIGHT (kg/m)	SECTION MODULUS (cm ³)	DEPTH D (mm)	WIDTH B (mm)	WEB THICKNESS t (mm)	FLANGE THICKNESS T (mm)	
533X210X92 kg/m UB	S355	117	55200	92	2070	533.1	209.3	10.1	15.6	
610X305X179 kg/m UB	S355	228	153000	179	4930	620.2	307.1	14.1	23.6	
610X305X238 kg/m UB	S355	303	209000	238	6590	635.8	311.4	18.4	31.4	
914X305X289 kg/m UB	S355	368	504000	289	10900	926.6	307.7	19.5	32.0	

Auto field	generated	ITEM, GRADE, SECTION AREA, MOMENT OF INERTIA, WEIGHT, SECTION MODULUS, DEPTH D, WIDTH B, WEB THICKNESS t, FLANGE THICKNESS T
Manually	Input field	1

5.3.11 Sheet Pile Schedule

Click "SHEET PILE SCHEDULE" in Schedules/Quantities (all) of Project Browser.

HEET PILE TYPE	MEMBER SIZE	TOE LEVEL (mPD)	MAX RETAINING HEIGHT (m)	FINAL EXCAVATION LEVEL (mPD)	MIN EMBEDMENT LENGTH (m)	GRADE
A	FSP-VIL (BOX TYPE)	-23.0	12.675	-10.325	14.225	S275
AA	FSP-VIL	-18.9	11.275	-7.375	11.525	S275
В	FSP-VIL	-18.9	12.175	-8.075	10.825	S275
C	FSP-IV	-18.9	12.175	-8.075	10.825	S275

Auto generati field	ted MEMBER S	SIZE, TOE LEVEL
Manually Input fie	Id SHEET PIL LENGTH, FI	LE TYPE, MAX RETAINING HEIGHT, MIN EMBEDMENT FINAL EXCAVATION LEVEL, GRADE

5.3.12 Sheet Pile Section Properties

Click "SHEET PILE SECTION PROPERTIES" in Schedules/Quantities (all) of Project Browser.

				SHE	ET PILE SECTION	PROPERTIES					
	Į.	DIMENSIONS (mm	6	SECTION ADEA	MOMENT OF	WEIGHT (DED	SECTION	SECTION AREA	MOMENT OF	WEIGHT (DED 1	SECTION
MEMBER SIZE	w	h	t	(PER PILE) (cm ²)	INERTIA (PER PILE) (cm4)	PILE) (kg/m)	MODULUS (PER PILE) (am ²)	(PER 1m PILE) (cm ²)	INERTIA (PER 1m PILE) (cm4)	PILE) (kg/m)	MODULUS (PER 1m PILE) (cm ²)
FSP IV	400	170	15.5	153	11400	120	680	306	86000	240	3820
FSP VIL	500	225	27.6	153	11400	120	680	306	86000	240	3820
FSP VIL (BOX)	500	207.1	27.6	153	11400	120	680	306	86000	240	3820

Auto generated field	DIMENSIONS, SECTION AREA (PER PILE), MOMENT OF INERTIA (PER PILE), WEIGHT (PER PILE), SECTION MODULUS (PER PILE), SECTION AREA (PER 1m PILE), MOMENT OF INERTIA (PER 1m PILE), WEIGHT (PER 1m PILE), SECTION MODULUS (PER 1m PILE)
Manually Input field	MEMBER SIZE

5.3.13 Instrument Schedule

Click "INSTRUMENT SCHEDULE" in Schedules/Quantities (all) of Project Browser.

INSTRUMENT SCHEDULE					
SYMBOL	TYPE	NUMBER			
🕀 BS1	BUILDING SETTLEMENT MARKER (BS1-BS12)	12			
∠ ▲ T1	BUILDING TILTING CHECK POINT WITH VERTICAL DISPLACEMENT (T1-T11)	11			
) S1	GROUND SETTLEMENT CHECK POINT (S1-S10)	10			
() OW1	OBSERVATION WELL (OW1-OW14)	14			
(P) P1	PUMP WELL (P1 TO P7)	7			
₩ RW1	RECHARGE WELL (RW1-RW7)	7			
(S) SP1(P)	STANDPIPE (WITH PIEZOMETER) (SP1(P) TO SP5(P))	5			
⊕ U1	UTILITY SETTLEMENT MONITORING POINT ON GROUND (U1-U12)	12			
∆ V1	VIBRATION CHECK POINT (V1-V11)	11			

Auto field	generated	TYPE
Manually	Input field	SYMBOL, NUMBER

Drainage 5.4

5.4.1 Strom Water Manhole Schedule

	STORM WA	TER MANH	IOLE SCHEI	DULE		
MANHOLE NO.	PIPE DIAMETER (mm)	C.L.	I.L.	D.T.I.L.	DEPTH (mm)	TYPE
STMH	225	+3.43	+2.43	+2.28	755	T1

Auto field	generated	DEPTH
Manually	Input field	MANHOLE NO., PIPE DIAMETER, C.L., I.L., D.T.I.L., TYPE

Foul Water Manhole Schedule 5.4.2

	FOULW	ATER MAN	NHOLE SCH	EDULE		
MANHOLE NO.	PIPE DIAMETER (mm)	C.L.	I.L.	D.T.I.L.	DEPTH (mm)	TYPE
FTMH	150	+3.42	+2.42	+2.27	1980	T1
SMH-01	150	-5.85	-6.6	-6.3	1750	E
WMH-01	150	-5.85	-6.6	-6.3	1750	E
WMH-02	150	-6.6	-6.85	-5.55	1750	E

Grand total: 4

Auto field	generated	DEPTH
Manually	Input field	MANHOLE NO., PIPE DIAMETER, C.L., I.L., D.T.I.L., TYPE

Petrol Interceptor Schedule 5.4.3

PET	ROL INTER	CEPTOR SC	CHEDULE	
PETROL INTERCEPTOR NO.	C.L.	I.L.	B.L.	DEPTH (mm)
PI-01	+5.9	+6.9	+8.4	2500

Auto field	generated	DEPTH
Manually	Input field	PETROL INTERCEPTOR NO., C.L., I.L., B.L.

5.4.4 Sump Pit Schedule

		SUMP PIT S	SCHEDULE				
d .						PUMP DUT	Y (EACH)
SUMP PIT NO.	SUMP PIT SIZE (LxWxD)	C.L.	I.L.	B.L.	PUMP NO.	FLOW (I/s)	HED (m)
SWPP-02	2000(L) × 1500(W) × 600(D)	-5.85	-6.5	-7.5	SSP02-01,02	6.0	20
SWPP-03	2000(L) x 1500(W) x 600(D)	-5.85	-6.5	-7.5	SSP03-01,02	3.0	20
SWPP-04	2000(L) x 1450(W) x 600(D)	-5.85	-6.5	-7.5	SSP04-01,02	3.0	20

Grand total: 3

Auto field	generated	SUMP PIT SIZE
Manually	Input field	SUMP PIT NO., C.L., I.L., B.L., PUMP NO., PUMP DUTY

6 Standardising View Setting

This template has defined the desired settings. The users can use view templates to manage these settings by applying the view template, user efficiency on projects enhanced by assigning default view template for each view type. The standardised view properties include, but not limited to, view scale, detail level, model display setting.

Open either view plan \rightarrow On the "View" tab \rightarrow find the "Graphics" panel \rightarrow select "View Templates" \rightarrow select "Apply Template Properties to Current View"



In "View Templates" dialogue box \rightarrow on the right, select the view template applied to the corresponding view \rightarrow click "OK" to close the window.

Changes to view templates are automatically reflected in the views to which they have been assigned.

Discipline filter:		Numbe	er of views with this templa	te assigned: 0
<al></al>	~	Parameter	Value	Include
7	_	View Scale	1:500	
iew type filter:	-	Scale Value 1:	500	
<all></all>	\sim	Detail Level	Medium	
lames'		V/G Overrides Model	Edit	
CTC Block Plan		V/G Overrides Annotation	Edit	
CIC_Column RC Detail		V/G Overrides Analytical	Edit	
CIC_Column/Wall Layout Plan		V/G Overrides Import	Edit	
CIC_ELS Layout Plan		V/G Overrides Filters	Edit	
CIC_Loading Intensity Plan		V/G Overrides Worksets	Edit	
CIC_Pile Cap RC Plan (Rebar)		Discipline	Structural	
CIC_Pile Cap RC Section CIC_Piling Layout Plan CIC_Piling Section View CIC_Slab RC Detail CIC_Structural 3D	*			
CIC_Slab RC Detail CIC_Structural 3D	∨ Views			

6.1 Superstructure

The following view templates can be applied into view:

View Type	View template			
Plans	CIC_Block Plan	CIC_Structural Framing Plan		
	CIC_Column RC Detail	CIC_Wall RC Detail		
	CIC_Slab RC Detail	CIC_Water Tank Layout Plan		
	CIC_Structural Loading Key Plan CIC_Stairs Layout			
	Plan CIC_Water Tank Layout Plan			
Sections /	CIC_Beam RC Detail	CIC_Stairs RC Detail		
Elevations	CIC_Water Tank Section View			
3D Views	CIC_Structural 3D			

6.2 Demolition including hoarding

The following view templates can be applied into view:

View Type	View template		
	name		
Plans	CIC_Block Plan		
	CIC_Demolition Plan		
	CIC_Hoarding Layout Plan		
Sections / Elevations	CIC_Hoarding Section View		
3D Views	CIC_Structural 3D		

6.3 Foundation

The following view templates can be applied into view:

View Type	View template			
Plans	CIC_Block Plan	CIC_ Pile Cap RC Plan		
	(Shear) CIC_Column/Wall Layout Plan CIC_Piling Layout Plan			
	CIC_Loading Intensity Plan	CIC_Pile Cap Layout Plan		
	CIC_Pile Cap RC Plan (Rebar)	CIC_Monitoring Plan (FDN)		
Sections / Elevations	CIC_Pile Cap RC Section			
	CIC_Piling Section View			
3D Views	CIC_Structural 3D			

6.4 Excavation and lateral support

View Type	View template			
	name			
Plans	CIC_Block Plan			
	CIC_ELS Layout Plan			
	CIC_Monitoring Plan (ELS)			
Sections / Elevations	CIC_ELS Elevation			
	View CIC_ELS Section			
	View			
	CIC_ELS Section View (SEQ)			
3D Views	CIC_ELS 3D			

The following view templates can be applied into view:

6.5 Site Formation

The following view templates can be applied into view:

View Type	View template		
	name		
Plans	CIC_Block Plan		
	CIC_Site Formation Layout Plan		
Sections / Elevations	CIC_Site Formation Section View		
3D Views	CIC_Site Formation 3D		

6.6 Drainage

The following view templates can be applied into view:

View Type	View template			
	name			
Plans	CIC_Drainage Layout Plan			
Sections / Elevations	CIC_Drainage Schematic Diagram			
3D Views	1			

6.7 Curtain Wall

The following view templates can be applied into view:

View Type	View template				
	name				
Plans	CIC_Curtain Wall Cast-in Layout Plan				
	CIC_Curtain Wall Location Plan				
	CIC_Embed Plan View				
Sections / Elevations	CIC_Curtain Wall Cast-in Section View				

CIC_Curtain	Wall	Elevation
CIC_Curtain Wa	all Sectio	on View
CIC_Embed Se	ection Vi	ew

7 Preparing Drawing Production

7.1 Duplicating Views

For drawing production, the users may duplicate the view for further editing instead of the working view.

Select a structural plan \rightarrow right click \rightarrow click "Duplicate View" \rightarrow "Duplicate" \rightarrow re-naming the sheet to "DEMOLITION PLAN – EXISTING FRAMING PLAN" or re-naming by your own.

□ [□] Views (all) □ Structura	I Plans (1.0 General)	<wip list="" view=""></wip>				
1/F		A		В		
- - -	Open		ne	Scale Value 1:	Deta	
	Open Sheet					
E Struc	Close		-	100	Fine	
				100	Fine	
	Find Referring Views		-	100	Fine	
	Make Workset Editable		aurecongr	100	Fine	
⊡Floor	Apply Template Properties					
	Consta View Townlate From View			100	Coarse	
🖃 Ceilir	Create view Template From View					
C	Duplicate View	>	Dupli	Duplicate		
	Convert to independent view		Duplicate with Detailing			
C	Apply Dependent Views	Duplicate as a Dep			nt	
	Save to Project as Image			100	FILE	
	Delete					
Eleva	Delete			100	Coores	
	Copy to Clipboard		-	100	Coarse	
	Rename					
	Select All Instances	>		100	Medium	
	(-	100	Fine	
Draft	Properties			200	Coarse	
	Save to New File			1000	Fine	
	Save to racw Them			100	Coarse	
2	Search					
	Expand All					
T T	Collapse All					

7.1.1 Add Tags (Tag All not tagged)

Click "Annotation" in ribbon \rightarrow click "Tag All" for column and beam marks.


Click both "Structural Column Tags" and "Structural Framing Tags" in below Window \rightarrow click "OK".

lag All Not Tag	ged		>
Select at least or non-annotated o	ne Category and Tag o bjects:	r Symbol Family to ann	notate
All objects in a	current view		
Only selected	objects in current view	W	
Include eleme	nts from linked files		
c	ategory	Loaded	Tags
Detail Item Tag	gs -	ANN-DLG-CIC-Col	umn_Tag : Singl
Site Tags		ANN-STG-CIC-Bore	dhole : Elevatio
Structural Area	Reinforcement Sy	ANN-ARY-CIC : Off	set
Structural Area	Reinforcement Tag	ANN-ARG-CIC : Ma	jor
Structural Colu	ımn Tags	ANN-SCG-CIC : Ma	rk
Structural Four	ndation Tags	ANN-FDG-CIC-Rec	tangular : Mark
Structural Fran	ning Tags	ANN-FRG-CIC-Rect	angular : Sta 🗸
Structural Path	Reinforcement Sy	ANN-PHG-CIC-Syn	nbol : Bottom
Structural Path	Reinforcement Tag	ANN-PHG-CIC-Tag	: Standard
Structural Reb	ar Tags	ANN-RBG-CIC : Sha	pe Only
View Titles		ANN-VTT-CIC : Wit	h_Detail_No
Wall Tags		ANN-WLG-CIC : M	ark
□Leader	Leader Length:	12.7 mm	
	Tag Orientation:	Horizontal ~	
~	Canad	Apply	Halo

Choose "ANN-FTG-CIC-Rectangular" or "ANN-SCG-CIC" for the standard markings of beam and column respectively.

Properties ×			Properties	×
	ANN-FRG-CIC-Rectang Standard	gular 🖕	AN Ma	NN-SCG-CIC
Structural Fr	aming Tags (1) 🗸 健	Edit Type	Structural Colur	nn Tags (1) 🗸 📴 Edit Type
Graphics		\$	Graphics	\$
Leader Line			Leader Line	
Orientation	Horizontal		Orientation	Horizontal
Leader Typ	e Attached End		Leader Type	Attached End



7.1.2 Add Tags (Tag by Category)

Click "Annotation" in ribbon \rightarrow click "Tag by Category" for column and beam marks.



Click "Tags.." in Option bar.

Modify Tag P→ Horizontal ✓ Tags Leader Attached End ✓ → 12.7 mm	Modify Tag	🔄 Horizontal 🗸	Tags Leader	Attached End	✓ + 12.7 mm	
---	--------------	----------------	-------------	--------------	-------------	--

Assign the required tag family and type to each category and click "OK".

elect an available Tag or Symbol Family for ote: Multi-Category Tag Families are not sh	each Family Category listed own below.			
iter list: <multiple> ~</multiple>			Load Family	
Category	Loaded Tags	Loaded Sym	bols	~
Runs				
Supports				
Structural Area Reinforcement	ANN-ARG-CIC : Major	ANN-ARY-CIC : Offset		
Structural Beam Systems				
Structural Columns	ANN-SCG-CIC : Mark			j.
Structural Fabric Reinforcement				
	ANN-FDG-CIC-Rectangular : Mark FDN	T		
- Structural Framing	ANN-FRG-CIC-Rectangular : Standard 🐱			ľ.
Structural Internal Loads	ANN-FRG-CIC-Rectangular : Standard			
Internal Area Loads				
Internal Line Loads				
1.1. 10 1.1. 1		1		1

Click the desired object to tag.

7.1.3 Add Dimensions

Create the grid dimension from "Aligned" under Dimension in Ribbon.



Choose "CIC_2.5_Con_Diagonal" under Linear Dimension Style family for the standard style of dimension.



7.1.4 Add Annotation Symbols

Click "Annotation" in ribbon \rightarrow click "Symbol" to place annotation symbols.



Select the specific type of symbol from "Properties".

Properties	×
ANN-GNN-CIC-Level_Difference	•
Search	Q
ANN-GNN-CIC-Level_Difference	^
ANN-GNN-CIC-Level_Difference	
ANN-GNN-CIC-Monitoring-Building_Settlement	
ANN-GNN-CIC-Monitoring-Building_Settlement	
ANN-GNN-CIC-Monitoring-Building_Tilting_Settlement	
ANN-GNN-CIC-Monitoring-Building_Tilting_Settlement	

Place it to desired location.



7.2 Create Drafting View

Despite creating 3D objects, 2D information can also be drafted in the drafting view when appropriate. For example, general notes and typical details.

Click "Drafting View" under Create in View → Re-naming the drafting view to "GENERAL NOTES FOR DEMOLITION" or by your own for easy reference.



7.2.1 Text Note

Insert text from the annotation.



In the properties panel, choose the specific type of text.

Properties		×
Text CIC_	2.5mm ArialN	•
Text Notes (1)	~ 🖯 Edit Ty	oe
Graphics	118 2000	\$
Arc Leaders		1
Left Attachment	Тор	
Right Attachmen	t Bottom	1
Horizontal Align	Left	1
Vertical Align	Тор	
Keep Readable		
Identity Data		\$
Workset	View "Drafting V.	đ.
Edited by	1	



- 12
- BS167-22, CONSTRUCTION SITE (SAFETY) REGULATIONS, THE GUIDELINES AND REGUIREMENTS SET OUT IN PNAPT1 AND CODE OF PRACTICE FOR DEMOLITION OF BULDINGS 2004. ALL STRUCTURES TO BE DEMOLISHED BY ORDINARY HAND-HELD TOOLS. POWERED MECHANICAL PUANTS MAY BE EMPLOYED AND RESTED AT SOLID GROUND TO HELP REMOVAL OF DEBRIS AT GF. DEMOLITION SHALL BEGIN ON THE ROOF AND PROCEED DOWN FLOOR BY FLOOR TO THE GROUND FLOOR. THE CONCRETE OF BACH STRUCTURAL ELEMENT SHALL BE RROKEN DOWN GRADUALLY. THE REINFORCEMENT SHALL BE LEFT IN PLACE UNTIL THE CONCRETE IS BROKEN AWAY AND WHEN ITS SUPPORT IS NO LONGER NEEDED. THE DEMOLITION OF EACH STRUCTURAL ELEMENT SHALL BE PREFORMED ACCORDING TO THE DETAILS AS SHOWN ON DEINGLITION PLANS. 14 1.5
- 1.6
- BEFORE DEMOLITION WORKS, THE PROPPING UNDERNEATH CANTILEVER BEAMS IF ANY SHALL BE INSTALLED.

7.2.2 Typical Details

Create detail line / region.

Annotate Analyze	Massing	1 & Site	Collaborate	View M	anage	Add-Ins
A A 7	JI	T	PI	83	[A]	X
Spot Spot Spot evation Coordinate Slope	Detail Line	Region	Component	Revision Cloud	Detail Group	. Insulation
			Deta	ail		
Another Automot	Manadana	0.5.4	Collaborate			
Annotate Analyze	Massing	or site	Collaborate	Y .		
	N					
pot Spot Spot ration Coordinate Slope	Detail Line	Region	Component			
	_	Fille	ed Region	100		
X 🗈 001 - SITE PLAN		THE Ma	sking Region			

Create lines and choose different Line Style.



Drafting the region by drawing tools.





Examples of Detail for Demolition Works:



7.3 Create Legend

Click "View" in ribbon \rightarrow click "Legends" to create a new legend view.

	4	P _O			
ų;	Drafting View	Duplicate View	Legends	Schedules	Scope Box
(Create				

Use Annotation tool such as text, filled region and symbols to create the components in legends.

gned Linea	r Angular Radial Diameter Arc	Spot Spot	Spot Detail Region	Text Check	Find/ Replace	Symbol	1 Seam
	Dimension 💌		and a second sec	Text	S S		Symbol
							,
EGEND:							
	SITE BOUNDARY						
\times	COLUMN / WALL ABOVE		BEARING (B.W.) / HANGER WALL (H.W.)				
]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]	COLUMN / WALL BELOW	\boxtimes	VOID				
	WALL ABOVE & BELOW	+26.50	PROPOSED STRUCTURE FLOOR LEVEL				
	COLUMN ABOVE & BELOW	TB1 (300X450)	PROPOSED BEAM MARK AND BEAM SIZE				
ample ject Brow	of legends that alread ser - CIC_SAMPLE_STR_2017 auri rations (1.0 General)	dy created i	n the Structural	template			
emple oject Brow	of legends that alread ser - CIC_SAMPLE_STR_2017 aur rations (1.0 General) tions (1.0 General) tions (2.0 Drawing Issue) fting Views (NOTES)	dy created i	n the Structural	template			
emple ject Brow Elev Elev Sec Construction Elevent	of legends that alread ser - CIC_SAMPLE_STR_2017 auri rations (1.0 General) tions (1.0 General) tions (2.0 Drawing Issue) fting Views (NOTES) ends LAYOUT	dy created i	n the Structural	template			
emple ject Brow Sec Sec Dra ELS ELS FRA FRA	of legends that alread ser - CIC_SAMPLE_STR_2017 auri rations (1.0 General) tions (2.0 Drawing Issue) fting Views (NOTES) ends LAYOUT SECTION MING PLAN LEGEND MING PLAN NOTES	dy created i	n the Structural	template			
Ample oject Brow Elev Sec Dra ELS ELS FRA FRA LO/ LO/	of legends that alreading of legends that alreading of legends that alreading of legends that alreading of legends (1.0 General)	dy created i	n the Structural	template			
emple oject Brow Elev Sec Dra ELS ELS FRA LOV PILI PILI	of legends that alread ser - CIC_SAMPLE_STR_2017 aurility rations (1.0 General) tions (1.0 General) tions (2.0 Drawing Issue) fiting Views (NOTES) ends LAYOUT SECTION MING PLAN LEGEND MING PLAN NOTES ADING KEY PLAN E CAPLAYOUT PLAN NG LAYOUT PLAN NG SECTION	dy created i	n the Structural	template			
emple oject Brow Elev Sec Dra ELS ELS FRA FRA FRA LO/ LO/ PILI PILI SHE	of legends that alreading of legends that alreading of legends that alreading of legends that alreading of legends (1.0 General)	dy created i	n the Structural	template			

7.4 Create Drainage Schematic Diagram

7.4.1 Create Elevation View

Create an exterior elevation view in plan \rightarrow adjust the width and length of the crop region



7.4.2 Add Tags to non-pipework drainage object

Add Tag in elevation view (Refer to section 7.1.2 Add Tags – Tag by Category)

Category	Tag family	Drainage object
Plumbin	ANN-PMG-CIC-Schem-Floor_Drain	Floor_Drain
g Fixture	ANN-PMG-CIC-Schem-	Vertical_Floor_Drain
	Vertical_Floor_Drain ANN-PMG-CIC-	Water_Closet
	Schem-Water_Closet	

Drag the tags to the location manually.



7.4.3 Add detail item to routing of pipes

Click "Annotation" in ribbon \rightarrow click "Component" in "Detail" to place detail item.



In "Properties", select "CIC_Pipe Line" \rightarrow select the specific type of line

Family	Туре	Graphic
		S
CIC_Pipe Line	DR-Waste	
	DR-Waste with	-
	arrow DR-Waste	ø100
	with radius	
CIC_Pump Symbol	WP	M
CIC_Room Boundary	F. LAV	} F. LAV∤
CIC_Sunken	D1800	SUNKEN



7.4.4 Apply view template

Apply view template "CIC_Drainage Schematic Diagram" to the view. (Refer to section 6 Standardising View Setting)

8 Creating Sheet

8.1 Sheet List

Using a template sheet, the users can create a tabular view of sheets in a project. From "View" tab in ribbon \rightarrow click "Schedule" \rightarrow click "Sheet List".

In the field tab of the sheet list, add the field name sheet number, sheet name, sheet issue date and sheet revision to the list of scheduled fields.

To begin adding sheets to the sheet list, go to the row panel in ribbon \rightarrow click "Insert" \rightarrow click "Data Rows". The users can continue populating the schedule in this way.

A	В	С	D
Sheet Number	Sheet Name	Sheet Issue Date	Sheet Revision
A101		04/16/19	
E001	EXCAVATION & LATRAL SUPPORT LAYOUT PLAN	04/18/19	
E002	EXCAVATION & LATERAL SUPPORT SECTIONS (1 OF 2)	04/18/19	
E004	EXCAVATION & LATERAL SUPPORT CONSTRUCTION SEQUENCE (1 OF 2)	04/18/19	
E007	EXCAVATION & LATERAL SUPPORT GENERAL NOTES	04/18/19	
P003	PILING SECTION A & SECTION B	04/18/19	
P002	PILING LAYOUT PLAN	04/18/19	
P005	PILE LOAD SCHEDULE	04/18/19	
E003	EXCAVATION & LATERAL SUPPORT SECTIONS (2 OF 2)	04/18/19	
P004	PILING SECTION C	04/18/19	
P007	COLUMN / WALL LOADING SCHEDULE	04/18/19	
P008	LOADING INTENSITY PLANS	04/18/19	
P001	GENERAL NOTES FOR FOUNDATION	04/18/19	
S002	TYPICAL FLOOR FRAMING PLAN	04/23/19	
E005	EXCAVATION & LATERAL SUPPORT CONSTRUCTION SEQUENCE (2 OF 2)	04/26/19	
			R.

8.1.1 Superstructure

For superstructure submission, this template shows the following examples for your reference.

Sheet Number	Sheet Name
S001	GENERAL NOTES FOR SUPERSTRUCTURE
S002	TYPICAL FLOOR FRAMING PLAN
S003	BEAM R.C. SCHEDULE
S004	BEAM R.C. DETAIL (SCHEDULE VERSION)
S005	BEAM R.C. DETAIL
S006	COLUMN R.C. DETAIL
S007	WALL R.C. DETAIL (1 OF 2)
S007A	WALL R.C. DETAIL (Schedule)
S008	WALL R.C. DETAIL (2 OF 2)

S009	SLAB R.C. DETAIL
S010	STAIRCASE R.C. DETAIL
S011	WATER TANK R.C. DETAIL

8.1.2 Demolition including hoarding

For Demolition submission, this template shows the following examples for your reference.

Sheet Number	Sheet Name
D001	GENERAL NOTES FOR DEMOLITION
D002	DEMOLITION PLAN – EXISTING G/F, 1/F FRAMING PLAN
D003	DEMOLITION DETAILS (BY HAND HELD TOOLS)
D004	DETAIL FOR DEMOLITION WORKS (1/2)
D005	DETAIL FOR DEMOLITION WORKS (2/2)
H001	HOARDING LAYOUT PLAN
H002	HOARDING TYPICAL DETAIL

8.1.3 Foundation

For Foundation submission, this template shows the following examples for your reference.

Sheet Number	Sheet Name
P001	GENERAL NOTES FOR FOUNDATION
P002	PILING LAYOUT PLAN
P003	PILING SECTION A & SECTION B
P004	PILING SECTION C
P005	COLUMN / WALL LOADING PLAN
P006	COLUMN / WALL LOADING SCHEDULE
P007	LOADING INTENSITY PLAN
P008	PILE LOAD SCHEDULE
P009	MONITORING PLAN
P010	PILE CAP REINFORCEMENT LAYOUT PLAN
P010A	PILE CAP REINFORCEMENT LAYOUT PLAN (2 OF 2)
P011	COLUMN AND WALL STARTER DETAILS
P012	TIE BEAM DETAILS & SCHEDULE
P013	PILE CAP LAYOUT PLAN
P014	GENERAL NOTES FOR PILE CAP

8.1.4 Excavation and Lateral Support

For Excavation and lateral support submission, this template shows the following examples for your reference.

Sheet Number	Sheet Name
E001	EXCAVATION & LATERAL SUPPORT GENERAL NOTES
E002	EXCAVATION & LATERAL SUPPORT LAYOUT PLAN
E003	EXCAVATION & LATERAL SUPPORT SECTIONS (1 OF 2)
E004	EXCAVATION & LATERAL SUPPORT SECTIONS (2 OF 2)
E005	EXCAVATION & LATERAL SUPPORT CONSTRUCTION SEQUENCE (1 OF 2)
E006	EXCAVATION & LATERAL SUPPORT CONSTRUCTION SEQUENCE (2 OF 2)
E007	EXCAVATION & LATERAL SUPPORT ELEVATION
E008	EXCAVATION & LATERAL SUPPORT WORKS MONITORING PLAN
E009	EXCAVATION & LATERAL SUPPORT WORKS PUMPING TEST SETTING OUT PLAN

8.1.5 Ground Investigation

For Ground Investigation submission, this template shows the following examples for your reference.

Sheet Number	Sheet Name
/	1

8.1.6 Site Formation

For Site Formation submission, this template shows the following examples for your reference.

Sheet Number	Sheet Name
T001	GENERAL NOTES FOR SITE FORMATION
T002	SITE FORMATION LAYOUT PLAN
T003	SITE FORMATION SECTIONS

8.1.7 Drainage

For Site Formation submission, this template shows the following examples for your reference.

Sheet Number	Sheet Name
M001	GENERAL NOTES FOR DRAINAGE
M002	SCHEMATIC DIAGRAM OF DRAINAGE SYSTEM
M003	DRAINAGE LAYOUT PLAN FOR TYPICAL FLOOR

M004	DRAINAGE INSTALLATION DETAILS
M005	DRAINAGE SCHEDULES

8.1.8 Curtain Wall

For Site Formation submission, this template shows the following examples for your reference.

Sheet Number	Sheet Name
C001	GENERAL NOTES FOR CURTAIN WALL
C002	CURTAIN WALL LOCATION PLAN
C003	CURTAIN WALL CAST-IN LAYOUT PLAN
C004	DETAIL OF EMBED AND MEMBER SECTION PROPERTIES
C005	CURTAIN WALL PARTIAL ELEVATIONS AND SECTIONS

8.2 Title Block

The title block includes standardised view and location of BD's approval stamp chop and RSE's name chop.

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		/		
		/r		
		8		
		5		_
				_
8		-		_
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PROJECT	AMPLE PRO	JECT		
DRAUMA	0.707.5			
TYPI	CAL FLOOR I	FRAMING P	LAN	
SCALE				
DRAMIN	AS SHOUN (GND.	@i A 1	REV. NO.	
S002				
SOURCE	014			
	90mm (V	V) x 40mm (H) sp	ace	
	for COM	PANY LOGO		
1				
	90mm (M for AP/R	V) x 60mm (H) sp SF/RGF s	ace	
	signature	e' and stamp chop	,	
BD's Of	FICAL USE			
	90mm (M for BD's a	V) x 150mm (H) s approval stamp /	pece	
	certificati approved	on of copies of diplens		
	(PNAP A	шинти АРРА)		

8.3 Examples of sheets

Examples of sheets can be found in Sheet (all) from the project browser.

🗄 🗐 Sheets (all) A101 - Unnamed E001 - EXCAVATION & LATERAL SUPPORT LAYOUT PLAN ■ E002 - EXCAVATION & LATERAL SUPPORT SECTIONS (1 OF 2) E003 - EXCAVATION & LATERAL SUPPORT SECTIONS (2 OF 2) ■ E004 - EXCAVATION & LATERAL SUPPORT CONSTRUCTION SE E005 - EXCAVATION & LATERAL SUPPORT CONSTRUCTION SE E006 - EXCAVATION & LATERAL SUPPORT ELEVATION E007 - EXCAVATION & LATERAL SUPPORT GENERAL NOTES ■ P001 - GENERAL NOTES FOR FOUNDATION P002 - PILING LAYOUT PLAN ➡ P004 - PILING SECTION C P005 - PILE LOAD SCHEDULE E P006 - COLUMN / WALL LAYOUT PLAN E P007 - COLUMN / WALL LOADING SCHEDULE ➡ P008 - LOADING INTENSITY PLANS P010 - PILE CAP REINFORCEMENT LAYOUT PLAN P011 - COLUMN AND WALL STARTER DETAILS DO12 - TIE BEAM DETAILS & SCHEUDLE

8.3.1 Superstructure

8.3.1.1 General Notes

From the project browser, click "S001 - GENERAL NOTES FOR SUPERSTRUCTURAL" in Sheet (all). The sheet consists of general notes and block plan, as basic components.

		the states
<section-header><section-header><section-header><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></section-header></section-header></section-header>	And the second sec	

View Type	View Name
Structural Plan	BLOCK PLAN
Drafting view	NOTES FOR SUPERSTRUCTURE

8.3.1.2 Typical Floor Framing Plan

From project browser, click "S002 - TYPICAL FLOOR FRAMING PLAN" in Sheet (all). The sheet consists of notes, legend, plans and schedules, as basic components.



Drag the following views to the sheet.

View Type	View Name
Structural Plan	TYP FLOOR FRAMING PLAN TYP FLOOR LOADING KEY PLAN
Drafting view	LOADING KEY PLAN FRAMING PLAN NOTES
Schedule	COLUMN SCHEDULE TOWER FLOOR LEVEL
Legend	FRAMING PLAN LEGEND

8.3.1.3 Beam R.C. Detail

From the project browser, click "S003 – BEAM R.C. SCHEDULE" in Sheet (all).



Drag beam R.C. detail from drafting view into the sheet. 3

View Type	View Name
Schedule	R.C. BEAM SCHEDULE
Drafting View	BEAM RC DETAIL

8.3.1.4 Beam R.C. Detail

From project browser, click "S004 – BEAM R.C. DETAIL" in



View Type	View
	Name
Section	CTB1 SECTION 1, CTB1 SECTION A, CTB56 SECTION 1, CTB56 SECTION B, CTB56 SECTION C

8.3.1.5 Column R.C. Detail

From project browser, click "S005 – COLUMN R.C. DETAIL" in Sheet (all).



View Type	View Name
Structural Plan	COLUMN REBAR PLAN (C1-C10)
Drafting View	COLUMN REBAR TABLE
	COLUMN CRITICAL ZONE
	COLUMN BEAM JOINT DETAIL

8.3.1.6 Wall R.C. Detail

From the project browser, click "S006 – WALL R.C. DETAIL (1 OF 2)" in Sheet (all).



Drag the following views to the sheet.

View Type	View Name
Structural Plan	5F WALL REBAR PLAN (WALL DETAIL 1-5)
Legend	WALL RC DETAIL LEGEND
Schedule	R.C. WALL SCHEDULE

8.3.1.7 Wall R.C. Detail (Schedule)

From project browser, click "S007 – WALL R.C. DETAIL (Schedule)" in Sheet (all).



View Type	View Name
Structural Plan	WALL DETAIL (SCHEDULE) 1 WALL DETAIL (SCHEDULE) 2
Drafting View	WALL REBAR TABLE

8.3.1.8 Slab R.C. Detail

From project browser, click "S009 - SLAB R.C. DETAIL" in Sheet (all).



View Type	View Name
Structural Plan	TYP FLOOR SLAB R.C. DETAILS

8.3.1.9 Staircase R.C. Detail

From the project browser, click "S010 - STAIRCASE R.C. DETAIL" in Sheet (all).



Drag the following views to the sheet.

View Type	View Name
Structural Plan	ST1, ST2
Section	STAIRS RC DETAIL (ST-01)
	STAIRS RC DETAIL (ST-02)

8.3.1.10 Water Tank R.C. Detail

From the project browser, click "S011 – WATER TANK R.C. DETAIL" in Sheet (all).



View Type	View Name
Structural Plan	2/F Water Tank
Section	WATER TANK SECTION 1
	WATER TANK SECTION 2

8.3.2 Demolition including hoarding

8.3.2.1 General Notes

From the project browser, click "D001 - GENERAL NOTES FOR DEMOLITION" in Sheet (all). The sheet consists of general notes and title block, as basic components.



Drag the following views to the sheet.

View Type	View Name
Structural Plan	BLOCK PLAN
Drafting View	GENERAL NOTES FOR DEMOLITION

8.3.2.2 Demolition Plan – Existing G/F, 1/F Framing Plan

From the project browser, click "D002 – DEMOLITION PLAN – EXISTING G/F, 1/F FRAMING PLAN" in Sheet (all).



View Type	View
	Name
Structural	DEMOLITION PLAN - EXISTING G/F FRAMING PLAN
Fidit	DEMOLITION PLAN - EXISTING 1/F FRAMING PLAN
Legend	CIC_DEMOLITION PLAN

8.3.2.3 Demolition Details (By Hand Held Tools)

From the project browser, click "D003 – DEMOLITION DETAILS (BY HAND HELD TOOLS)" in Sheet (all).



View Type	View
	Name
Drafting View	TYPICAL SEQUENCE OF TOP DOWN METHOD

8.3.2.4 Details for Demolition works

From the project browser, click "D004 – DETAIL FOR DEMOLITION WORKS" in Sheet (all).



View Type	View
	Name
Drafting View	DETAIL FOR DEMOLITION WORKS (1)
	DETAIL FOR DEMOLITION WORKS (2)

8.3.2.5 Hoarding Layout Plan

From the project browser, click "H001 – HOARDING LAYOUT PLAN" in Sheet (all).



View Type	View Name
Drafting View	HOARDING PLAN
Structural Plan	HOARDING PLAN BLOCK PLAN
Section	HOARDING (TYPE C) SECTION A1

8.3.2.6 Hoarding Typical Detail



View Type	View Name
Drafting View	HOARDING TYPICAL DETAIL
Section	DETAIL 1-7
	ELEVATION OF COVERED WALKWAY & GANTRY
	SECTION A (GANTRY)
	TYPICAL SECTINON OF HOARDING TYPE A

8.3.3 Foundation

8.3.3.1 **General Notes**

BD COPY And of examples of the line of the





Drag the following views to the sheet.

View Type	View
	Name
Drafting View	NOTES FOR FOUNDATION

8.3.3.2 Piling Layout Plan

From project browser, click "P002 - PILING LAYOUT PLAN" in Sheet (all).



View Type	View Name
Legend	PILING LAYOUT PLAN
Structural Plan	PILING LAYOUT PLAN BLOCK PLAN

8.3.3.3 Piling Section

From project browser, click "P003 – Piling Section A & Section B" or "P004 – Piling Section C" in Sheet (all).



View Type	View Name
Legend	PILING SECTION
Section	PILING SECTION A-C

8.3.3.4 Column/Wall Loading Plan

From project browser, click "P005 - COLUMN / WALL LOADING PLAN" in Sheet (all).



View Type	View
	Name
Structural Plan	COLUMN & WALL LAYOUT PLAN
Drafting View	COLUMN WALL LOADING NOTES

8.3.3.5 Column/Wall Loading Schedule

From project browser, click "P006 – COLUMN / WALL LOADING SCHEDULE" in Sheet (all).



Drag the following views to the sheet.

View Type	View
	Name
Schedule	COLUMN LOADING SCHEDULE ABOVE PILE CAP (1 OF
	2) COLUMN LOADING SCHEDULE ABOVE PILE CAP (2
	OF 2) WALL LOADING SCHEDULE ABOVE PILE CAP (1
	OF 2)
	WALL LOADING SCHEDULE ABOVE PILE CAP (2 OF 2)

8.3.3.6 Loading Intensity Plan

From project browser, click "P007 – LOADING INTENSITY PLAN" in Sheet (all).



View Type	View
	Name
Structural	LOADING INTENSITY PLAN AT B2
Plan	LOADING INTENSITY PLAN FOR FILL AT
	B2
	LOADING INTENSITY PLAN FOR UPTHRUST AT B2
Legend	LOADING INTENSITY

8.3.3.7 Pile Load Schedule

From project browser, click "P008 - PILE LOAD SCHEDULE" in Sheet (all).



View Type	View
	Name
Schedule	BORED PILE LOADING SCHEDULE (1 OF 2)
	BORED PILE LOADING SCHEDULE (2 OF 2)
	SOCKET H-PILE LOADING SCHEDULE (1 OF
	2)
	SOCKET H-PILE LOADING SCHEDULE (2 OF 2)

8.3.3.8 Foundation Monitoring Plan

From project browser, click "P009 – FOUNDATION MONITORING PLAN" in Sheet (all).



View Type	View
	Name
Structural Plan	MONITORING PLAN (FDN)
Legend	MONITORING PLAN
Drafting View	NOTES FOR MONITORING PLAN
Schedule	INSTRUMENT SCHEDULE
	GROUND INVESTIGATION TALBE OF ROCK HEAD

8.3.3.9 Pile Cap Reinforcement Layout Plan



From project browser, click "P010 – Pile Cap Reinforcement Layout Plan" in Sheet (all).

View Type	View
Structural Plan	PILE CAP REBAR PLAN -
	PLAN - F1 PILE CAP
	REBAR PLAN- F5
	PILE CAP SHEAR PLAN - F5
Legend	SHEAR LINK DIAGRAM (PILE CAP)
Section	SECTION A-D

8.3.3.10 Column and Wall Starter Details

From project browser, click "P011 – Column and Wall Starter Details" in Sheet (all).



Drag the following views to the sheet.

View Type	View
	Name
Structural Plan	PILE CAP COLUMN REBAR PLAN - PC1-TC10
Legend	STARTER BAR LEGEND
Schedule	WALL STARTER BAR SCHEDULE
Drafting View	STARTER BAR DETAIL
	STARTER BAR TABLE

8.3.3.11 Tie Beam Details and Schedule



From project browser, click "P012 - Tie Beam Details & Schedule" in Sheet (all).

Drag the following views to the sheet.

View Type	View Name
Schedule	TIE BEAM R.C. DETAILS SCHEDULE
Drafting View	TIE BEAM RC DETAIL

8.3.3.12 Pile Cap Layout Plan

From project browser, click "P013 – PILE CAP LAYOUT PLAN" in Sheet (all).



View Type	View Name
Legend	PILE CAPLAYOUT PLAN
Structural Plan	PILE CAP LAYOUT PLAN BLOCK PLAN

8.3.3.13 General Notes for Pile Cap

From project browser, click "P014 – GENERAL NOTES FOR PILE CAP" in Sheet (all).



View Type	View Name
Drafting View	NOTES FOR PILE CAP
8.3.4 Excavation and Lateral Support

8.3.4.1 Excavation and Lateral Support General Notes

From project browser, click "EXCAVATION & LATERAL SUPPORT GENERAL NOTES" in Sheet (all).



View Type	View					
Drafting View	NOTES FOR ELS					
Schedule	SCHEDULE OF HORIZONTAL TIE					
	SCHEDULE OF MAIN STRUT					
	SCHEDULE OF SECONDARY STRUT AND CORNER STRUT					
	SCHEDULE OF VERTICAL TIE					
	SCHEDULE OF WAILING					
	SECTION PROPERTIES OF HORIZONTAL TIE					
	SECTION PROPERTIES OF SHORT STRUT /					
	SPACER SECTION PROPERTIES OF STRUTS					
	SECTION PROPERTIES OF VERTICAL TIE					
	SECTION PROPERTIES OF WAILING					
	SOIL PARAMETER					

8.3.4.2 Excavation and Lateral Support Layout Plan

From the project browser, click "EXCAVATION & LATERAL SUPPORT LAYOUT PLAN" in Sheet (all).



View Type	View Name
Legend	ELS LAYOUT
Structural Plan	BLOCK PLAN ELS LAYOUT PLAN
Schedule	SHEET PILE SCHEDULE SHEET PILE SECTION PROPERTIES

8.3.4.3 Excavation and Lateral Support Sections



From project browser, click "EXCAVATION & LATERAL SUPPORT SECTIONS (1 OF 2)" in Sheet (all).

View Type	View
	Name
Legend	ELS SECTION
Section	ELS SECTION A to ELS SECTION C

8.3.4.4 Excavation and Lateral Support Construction Sequence

From the project browser, click "EXCAVATION & LATERAL SUPPORT CONSTRUCTION SEQUENCE (1 OF 2)" in Sheet (all).



For different phase of construction sequence, it can be set from filter in this template.

Select a section under the drawing \rightarrow in Ribbon, select "View" \rightarrow select "Visibility / Graphics"

- E004 EXCAVATION & LATERAL SUPPORT CONSTRUCTION SEQUENCE (1 OF 2)
 - - Legend: ELS SECTION
 - Section: ELS SEQUENCE SECTION (STAGE 0)
 - Section: ELS SEQUENCE SECTION (STAGE 1)
 - Section: ELS SEQUENCE SECTION (STAGE 2)
 - Section: ELS SEQUENCE SECTION (STAGE 3)
 - Section: ELS SEQUENCE SECTION (STAGE 4)



In a window, select "Filter" \rightarrow For phase 0, unclick all filter under Visibility \rightarrow click "OK"

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ELS - Phase 4								1
ELS - Phase 5								
ELS - Phase 6								1.
ELS - Phase 7								11
ELS - Phase 8								1
Topo - Phase 1								1
Topo - Phase 2								1
Topo - Phase 3								1
Topo - Phase 4								1
Topo - Phase 5								
Topo - Phase 6								1
Topo - Phase 7	0 -							
Topo - Phase 8								1
Topo - Phase Final				-				1

For phase 1, click "ELS – Phase 1" and "Topo - Phase 1" under visibility \rightarrow click "OK"

del Categories Annotatio	n Categories Analyti	cal Model Categories	Imported Categories	Filters Worksets	Revit Links		
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ELS - Phase 2							1
ELS - Phase 3							1
ELS - Phase 4							1
ELS - Phase 5							1
ELS - Phase 6							1
ELS - Phase 7							11
ELS - Phase 8							11
Topo - Phase 1							
Topo - Phase 2							
Topo - Phase 3							
Topo - Phase 4							
Topo - Phase 5							
Topo - Phase 6							
Topo - Phase 7							

For final phase, select all "ELS – Phase 1 to 8" and both "Topo – Phase 8" and "Topo – Final" \rightarrow click "OK"

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Name	Visibility	Lines	Patterns	Transparen	Lines	Patterns	Halftone	
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ELS - Phase 4								1
ELS - Phase 5								1
ELS - Phase 6								11
ELS - Phase 7								1
ELS - Phase 8								1
Topo - Phase 1			-					1
Topo - Phase 2			•					1
Topo - Phase 3								11
Topo - Phase 4			•					1
Topo - Phase 5								1
Topo - Phase 6			•					1
Topo - Phase 7			•					1
Topo - Phase 8								1
Topo - Phase Final			-	-		-		1

Drag the following views to the sheet.

View Type	View
	Name
Drafting View	ELS SEQUENCE 2
Schedule	SCHEDULE OF HORIZONTAL TIE
Legend	ELS SECTION
Section	ELS SEQUENCE SECTION (STAGE 0) to ELS SEQUENCE SECTION (STAGE 8)

8.3.4.5 Excavation and Lateral Support Elevation

From the project browser, click "EXCAVATION & LATERAL SUPPORT ELEVATION" in Sheet (all).



Drag the following views to the sheet.

View Type	View Name
Elevation	ELS ELEVATION A-B
	ELS ELEVATION B-C
	ELS ELEVATION C-
	D
	ELS ELEVATION D-A

8.3.4.6 Excavation and Lateral Support Monitoring Plan

From the project browser, click "EXCAVATION & LATERAL SUPPORT WORKS MONITORING PLAN" in Sheet (all).



View Type	View Name
Drafting View	NOTES FOR ELS MONITORING
Legend	ELS MONITORING
Structural Plan	ELS MONITORING PLAN
Schedule	INSTRUMENT SCHEDULE

8.3.4.7 Excavation and Lateral Support Pumping test setting out Plan

From the project browser, click "EXCAVATION & LATERAL SUPPORT WORKS PUMPING TEST SETTING OUT PLAN" in Sheet (all).



Drag the following views to the sheet.

View Type	View Name
Drafting View	NOTES FOR ELS PUMPING TEST
Legend	ELS MONITORING
Structural Plan	ELS PUMPING TEST SETTING OUT PLAN
Legend	INSTRUMENT SCHEDULE

8.3.5 Site Formation

8.3.5.1 General Notes

From project browser

8.3.6 Drainage

8.3.6.1 General Notes for Drainage

From the project browser, click "GENERAL NOTES FOR DRAINAGE" in Sheet (all).

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View Type	View Name
Drafting View	GENERAL NOTES

8.3.6.2 Schematic Diagram of Drainage System

From the project browser, click "SCHEMATIC DIAGRAM OF DRAINAGE SYSTEM" in Sheet (all).



View Type	View Name
Elevation	Drainage Schematic

8.3.6.3 Drainage Layout Plan for Typical Floor

From the project browser, click "DRAINAGE LAYOUT PLAN FOR TYPICAL FLOOR" in Sheet (all).



View Type	View Name
Floor Plans	6/F FLOOR PLAN
3D View	3D View (Right), 3D View (Left)

8.3.6.4 Drainage Installation Details

From the project browser, click "DRAINAGE INSTALLATION DETAILS" in Sheet (all).



8.3.6.5 Drainage Schedules

From the project browser, click "DRAINAGE SCHEDULES" in Sheet (all).



View Type	View Name				
Schedule	FOUL WATER MANHOLE SCHEDULE				
	PETROL INTERCEPTOR SCHEDULE				
	STORM WATER MANHOLE SCHEDULE				
	SUMP PIT SCHEDULE				

8.3.7 Curtain Wall

8.3.7.1 Curtain Wall Layout Plan

FIOH the project prowser,	CIICK CURTAIN WALL LAYOUT PLAN II	i Sneet (all)

View Type	View Name
Floor Plan	5/F LAYOUT PART PLAN (FLAT B)

8.3.7.2 Curtain Wall Case-in Layout Plan

From the project browser, click "CURTAIN WALL CAST-IN LAYOUT PLAN" in Sheet (all).



View Type	View		
	Name		
Floor Plan	5/F CAST-IN LAYOUT PLAN (FLAT B)		
Section	CAST-IN SECTION 1, CAST-IN SECTION 2		

8.3.7.3 Detail of Embed and Member Section Properties

From project browser, click "DETAIL OF EMBED AND MEMBER SECTION PROPERTIES" in Sheet (all).

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View Type	View Name
Floor Plan	5/F EMBED E2 LAYOUT PLAN
Section	EMBED (E2) SECTION

8.3.7.4 Curtain Wall Partial Elevations and Sections

From project browser, click "CURTAIN WALL PARTIAL ELEVATIONS AND SECTIONS" in Sheet (all).



View Type	View Name
Elevation	CURTAIN WALL ELEVATION
Section	CURTAIN WALL SECTION A

9 Exporting Models as Deliverables

9.1 Exporting 3D models as NWC

Publishing to 3D, the user can create a single 3D representation of the model that can be orbited, control visibility of element categories, and be queried for the properties of any of elements.

Click "Add-ins" \rightarrow click "Naviswork" and setting \rightarrow click "OK" to publish a 3D model for sharing.

9.2 Exporting 2D models as PDF

Publishing to 2D can create either a single view or a whole collection of interconnected views and sheets packaged as one file.

Click "File" \rightarrow click "Print" \rightarrow edit "Properties / File Location / Print Range / Settings" \rightarrow click "OK" to publish PDF.

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Feedback Form

CIC BIM User Guide for Preparation of Statutory Plan Submissions Revit December 2020

To improve future editions of this publication, we would be grateful to have your comments.

1. As a whole, I feel that the publication is:	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
Informative					
Comprehensive					
Useful					
Practical					
2. Does the publication enable you to	Yes		No	No Corr	iment
understand more about the subject?					
3. Have you made reference to the	Quite Often		Sometimes	Never	
publication in your work?					
4. To what extent the publication benefits	Strongly	Agree	Neutral	Disagree	Strongly
you?	Agree				Disagree
Supply chain Information/data integrity					
Work efficiency					
Project Collaborations					
5. Overall, how would you rate our publication?	Excellent	Very Goo	d Satisfactor	y Fair	Poor
6. Other comments and suggestions, please specify (use separate sheets if necessary).					
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Name: Mr. / Mrs./ Ms./ Dr./ Prof./ Ar. / Ir / Sr ^					
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(Please put a " \checkmark " in the appropriate box.)

- * The personal data in this form will be used only for this survey. Your data will be kept confidential and dealt with only by the Construction Industry Council.
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Please return the feedback form to:CIC Secretariat – BIME-mail:bim@cic.hk;Address:38/F, COS Center, 56 Tsun Yip Street, Kwun Tong, Hong KongFax No.: (852) 2100 9090

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