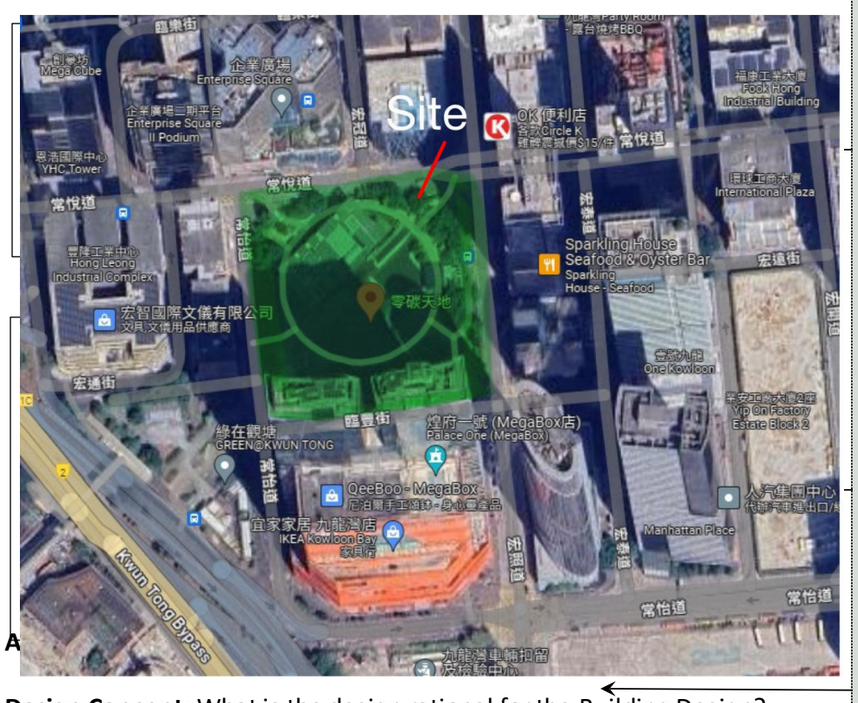
CIC BIM Competition 2024

Location Plan 1:2000



Design Concept: What is the design rational for the Building Design?

The building is designed with a distinctive shape, aiming to create a vibrant atmosphere. Through the uniqueness of the structure while embodying the concept of the 3Rs: reduce, reuse, and recycle. The primary purpose of the structure is to provide space for academic pursuits and to attract visitors, thereby serving both educational and community engagement objectives.

Building Form: How does the building form relates to the surrounding site context?

The design adheres to the principal objective of serving the public. While catering to students and scholars, a substantial area is allocated for leisure purposes amidst the urban concrete jungle. Green spaces will dominate the environment of the zone, harmonizing with the surrounding buildings and providing a natural oasis for relaxation and recreation.

Spatial Arrangement: How is the accommodation of key areas such as common areas being arranged?

The entire building comprises three V-shaped towers, which enhances ventilation through the separation of the main tower. The central area, located in the middle of the triangular structure, will serve as a venue for events or exhibitions, allowing visitors easy access. This arrangement fosters a conducive learning atmosphere and creates an engaging environment.

Connectivity: What is the vehicular and pedestrian connectivity, accessibility and evacuation considerations?

The design features three towers, each containing 3 stairs and 3 escalators independently, ensuring that evacuation routes can be easily accessed. The parking area will be located in the tower closest to the road. Since the structure consists of three independent towers, access for both visitors and students will be straightforward.

BIM Collaboration Approach: What is the approach and BIM tools for project collaboration?

Utilization of BIM is powerful and convenient. Clash detection and rendering 3D model are crucial for maintaining the consistency of the product. BIM enables a smooth files sharing across disciplines. And Revit is mainly adopted throughout the whole project. Revit is primarily used throughout the entire project, responding to structural, architectural, and MEP design needs.

Quality of Design: How BIM improve the quality of design?

By using the massing tool in revit, variations in the shape of the building can be achieved, ensuring design flexibility. Meanwhile, the scheduling function proves useful for calculating the area of rooms or similar spaces.

Sustainability: How are the considerations of sustainability aspect and passive building design being achieved?

Embracing the concept of sustainability, we have achieved it through the strategic coordination of the tower's design, incorporating windows to maximize natural ventilation. A significant distance between structures reduces heat concentration. In terms of lighting, the installation of numerous windows allows for the entry of sunlight, reducing the need for artificial lighting. Additionally, a rainwater harvesting system has been adopted to collect and utilize rainwater.

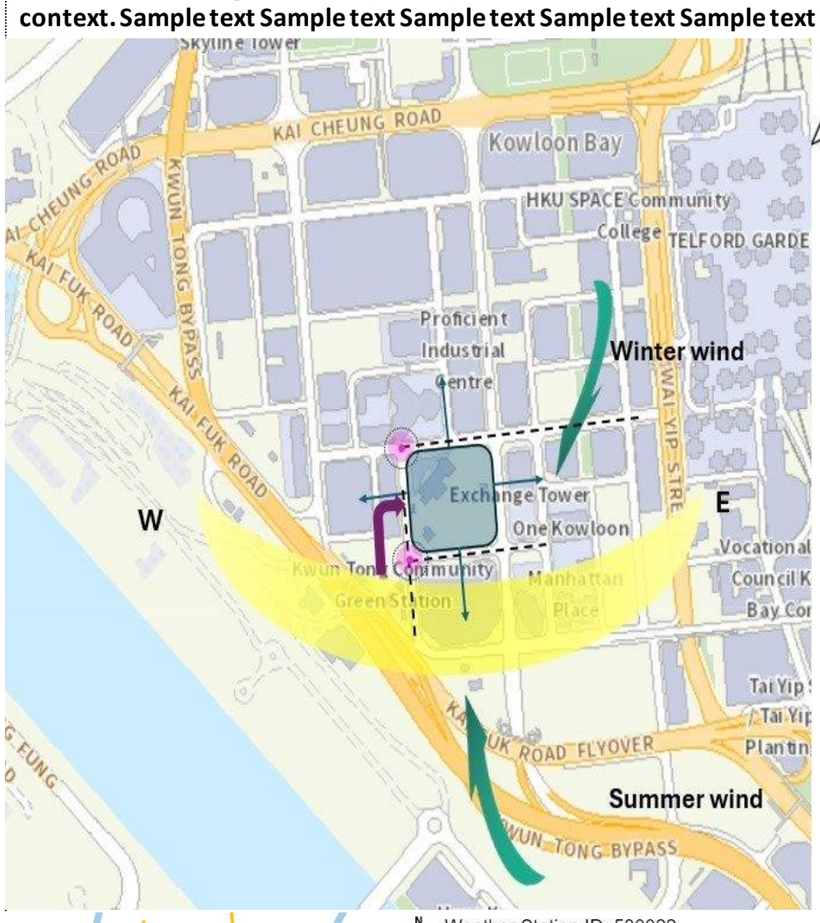
Innovation technologies : How is innovation technologies being involved in the project development?

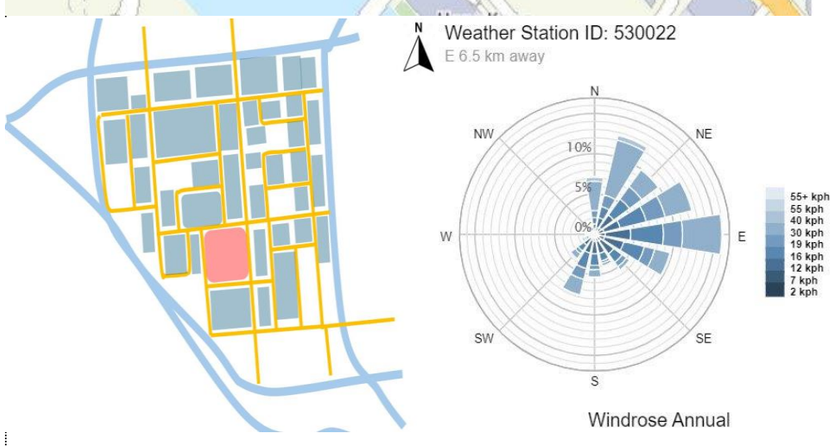
Utilization of Mic could reduce the time required for on-site fabrication, such as the precasting of concrete walls with steal bars. DfMA offers a comprehensive pathway for the construction stage. By maximizing tasks that can be completed off-site, it lowers costs and increases both the profit and efficiency of the project.

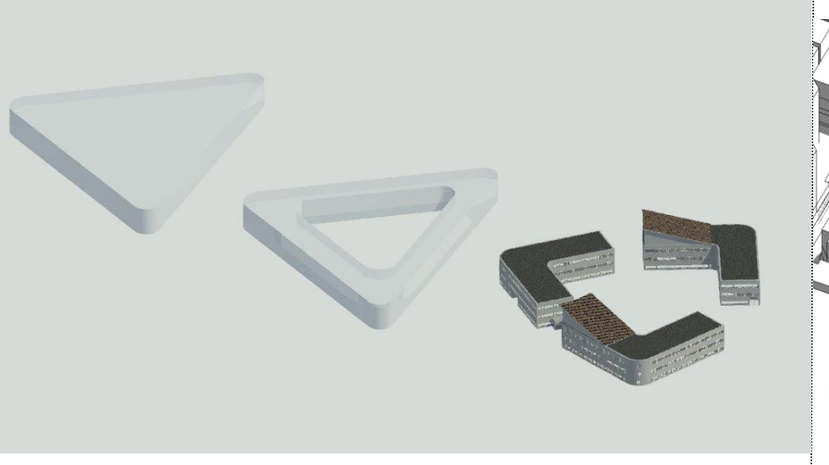
- Please put in with infographics/images to illustrate the **Design Concept** and delete these texts.

Conceptual Diagram: **please put in textual description to describe the design concept. Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text.**

Overall Bird Eye view: **please put in textual description here to describe the building itself such as location and the relationship with the site context. Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text.**

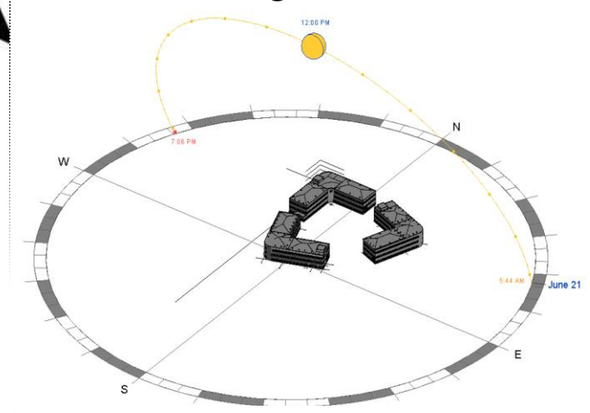




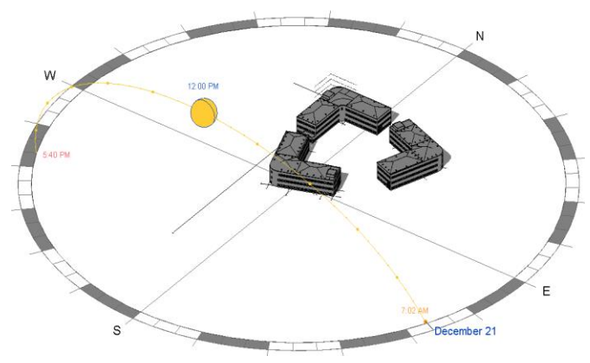


Quality: **By using the schedule from Revit, automatic calculations of the spatial requirements helps to adjust the scale of the massing, and the use**

Sun Path diagram



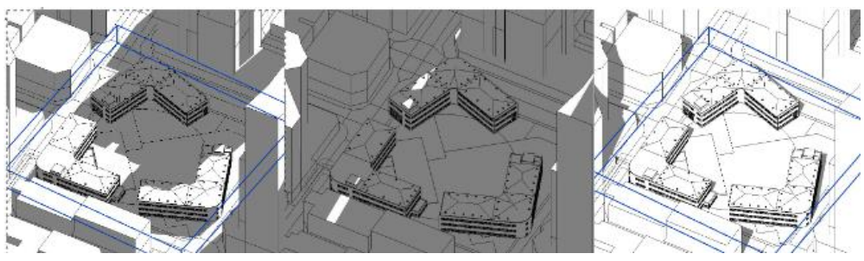
Summer Solstice



Winter Solstice

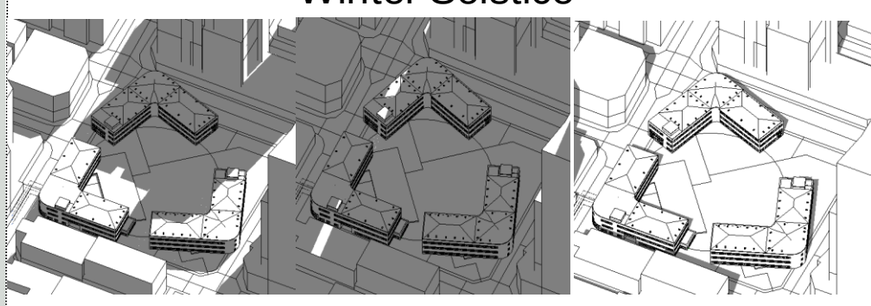
Sun shading diagram

Summer Solstice



9am 12nn 3pm

Winter Solstice



9am 12nn 3pm

Sustainability:

In terms of the sustainability approach with the environment, the massing and spatial organization of the building were based on the existing sun path.

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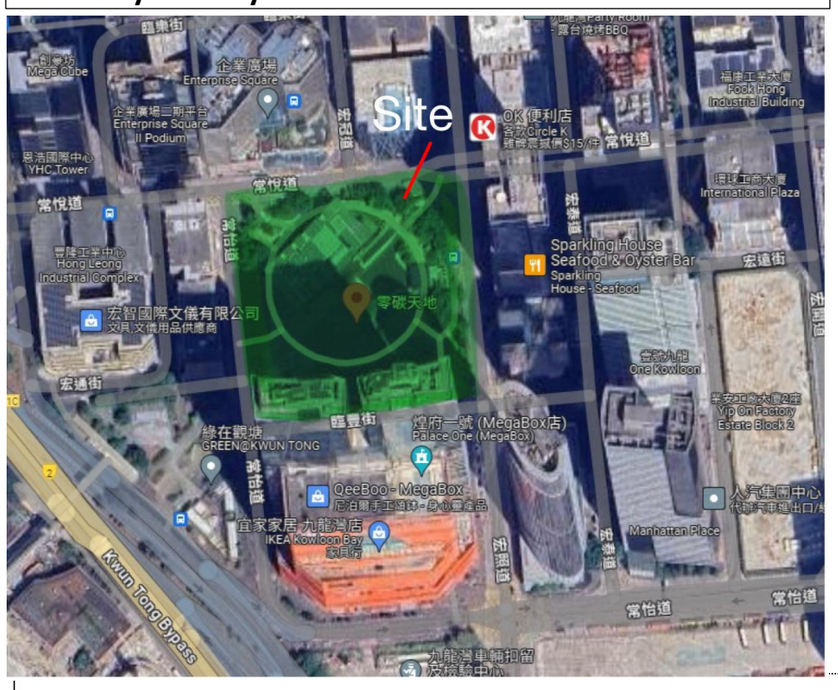
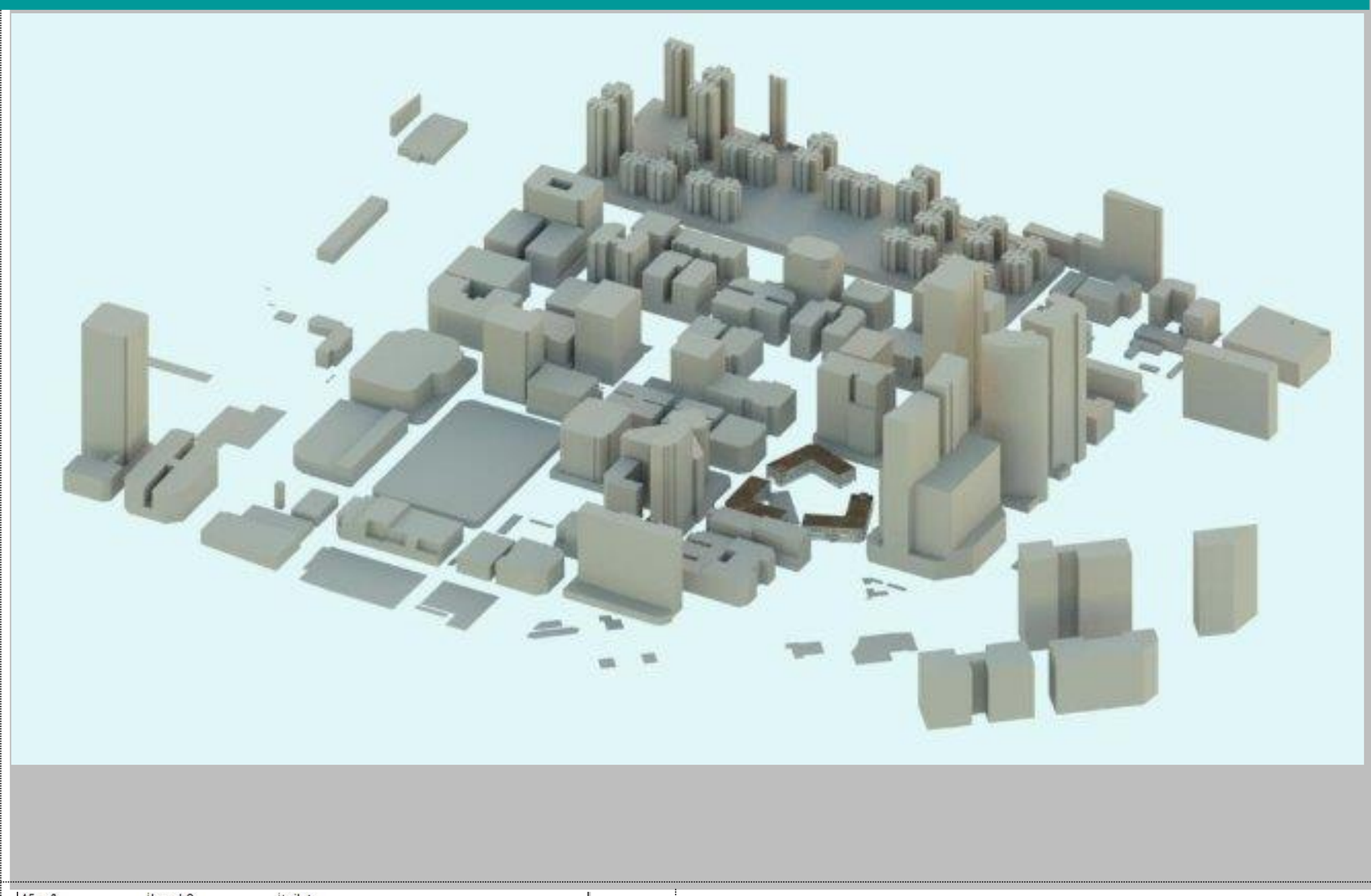
Site Layout Plan 1:1000

Note:
1. Please put in with min. 1:1000 Scale Site Layout Plan with simple shadow study analysis and delete this Note.
2. Title Font size at 18, Calibri.
3. Description Font size at 14, min. 12, Calibri.

Site analysis study





<Room Schedule 2>

A	B	C
Area	Level	Name
721 m²	Level 1	Car park
250 m²	Level 1	Exhibition Gallery
250 m²	Level 1	Conference Hall
759 m²	Level 2	learning and study area
759 m²	Level 2	learning and study area
250 m²	Level 2	Resources Centre / Library
153 m²	Level 2	Training Workshop
24 m²	Level 1	stair
24 m²	Level 1	stair
250 m²	Level 2	Resources Centre / Library
150 m²	Level 2	Training Workshop
250 m²	Level 1	Conference Hall
250 m²	Level 1	Conference Hall
250 m²	Level 1	Exhibition Gallery
250 m²	Level 1	Exhibition Gallery
250 m²	Level 1	Conference Hall
250 m²	Level 1	Conference Hall
250 m²	Level 1	Exhibition Gallery
250 m²	Level 1	Exhibition Gallery
50 m²	Level 1	entrance
9 m²	Level 1	lift
24 m²	Level 1	stair
50 m²	Level 1	entrance
50 m²	Level 1	cafe
9 m²	Level 1	lift
24 m²	Level 2	stair
9 m²	Level 2	lift
50 m²	Level 1	entrance
9 m²	Level 1	lift
244 m²	Level 2	Resources Centre
50 m²	Level 2	cafe
150 m²	Level 2	Training Workshop
50 m²	Level 2	toilet
100 m²	Level 2	Classroom
100 m²	Level 2	Classroom
100 m²	Level 2	Classroom
9 m²	Level 2	lift
24 m²	Level 2	stair
24 m²	Level 2	stair
9 m²	Level 2	lift
50 m²	Level 2	Broadcasting room
50 m²	Level 1	toilet
11 m²	Level 2	storage
100 m²	Level 2	Classroom
100 m²	Level 2	Classroom
50 m²	Level 2	toilet
100 m²	Level 2	Classroom
Not Placed	Not Placed	storage
100 m²	Level 2	Classroom
100 m²	Level 2	Classroom
150 m²	Level 2	Training Workshop
100 m²	Level 2	Classroom
150 m²	Level 2	Training Workshop
50 m²	Level 2	toilet
50 m²	Level 1	toilet
50 m²	Level 1	toilet
30 m²	Level 2	storage
9 m²	Level 3	lift
31 m²	Level 3	stair
9 m²	Level 3	lift
24 m²	Level 3	stair
9 m²	Level 3	lift
24 m²	Level 3	stair
50 m²	Level 3	Staff Meeting Room
300 m²	Level 3	Administrative Office
50 m²	Level 3	Staff Meeting Room
50 m²	Level 3	Staff Meeting Room
50 m²	Level 3	Staff Meeting Room
100 m²	Level 3	Information Technology Lab
100 m²	Level 3	Information Technology Lab
45 m²	Level 3	toilet
250 m²	Level 3	library
150 m²	Level 3	Training Workshop
91 m²	Level 3	Information Technology Lab
100 m²	Level 3	Information Technology Lab
100 m²	Level 3	Information Technology Lab
100 m²	Level 3	Classroom
50 m²	Level 3	toilet
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
250 m²	Level 3	Resources Centre
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
50 m²	Level 3	toilet
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
Not Placed	Level 3	Classroom
100 m²	Level 3	Classroom
230 m²	Level 3	Resources Centre
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
100 m²	Level 3	Classroom
165 m²	Level 3	Training Workshop
42 m²	Level 1	Transformer Room
153 m²	Level 2	Training Workshop
165 m²	Level 2	Training Workshop

Floor1

Floor2

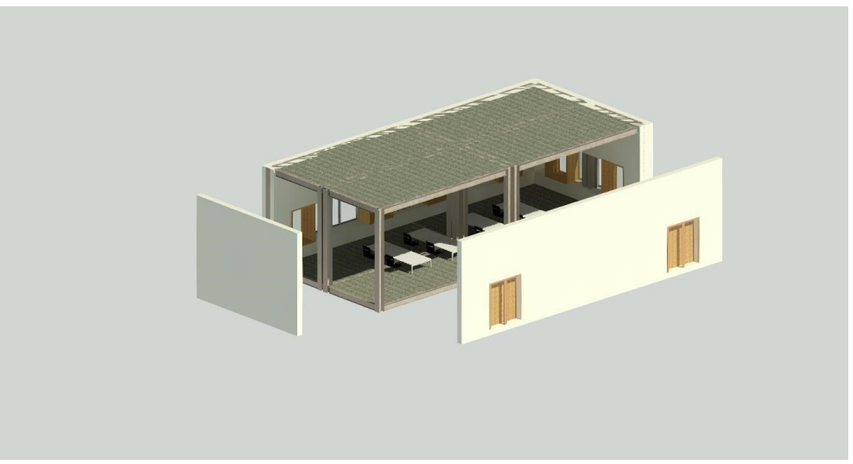
Floor3

ption to describe BIM for computational design, analysis and optimisation approach (architectural). Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample text

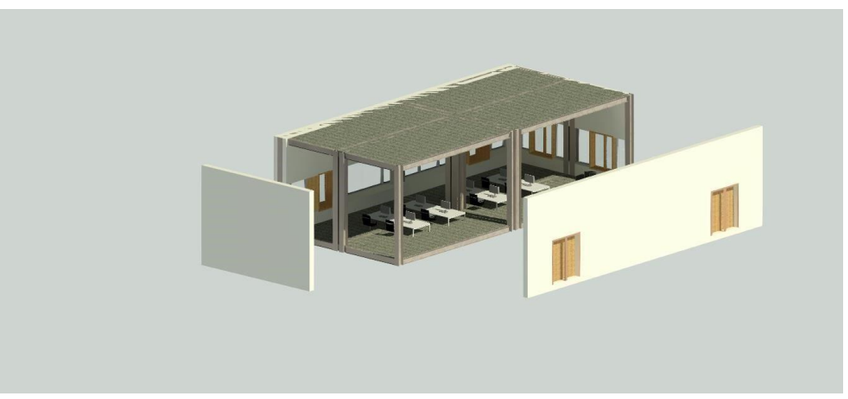
CIC BIM Competition 2024

Site Layout Plan 1:1000

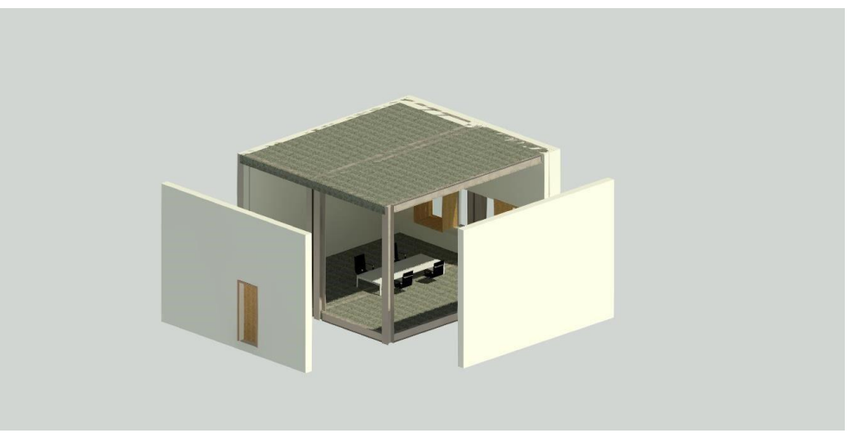
Mic



classroom

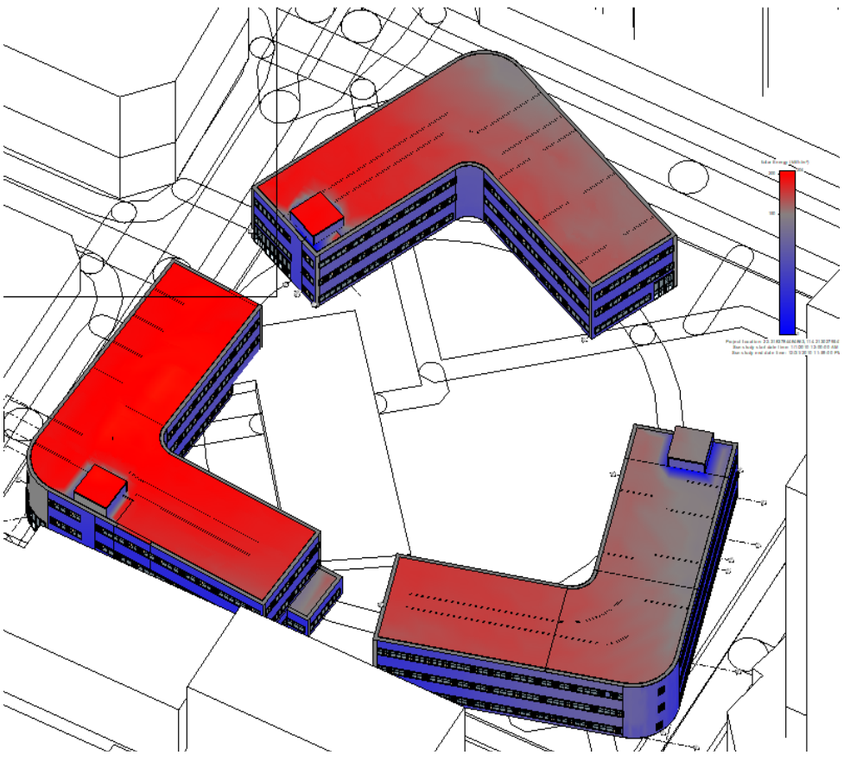


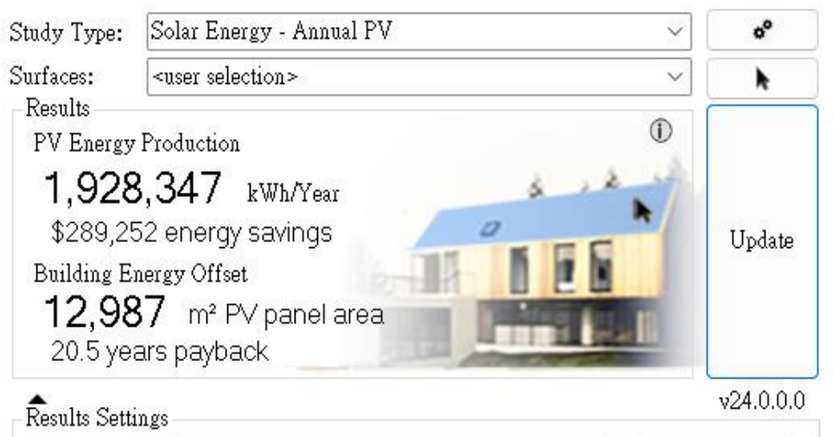
IT LAB



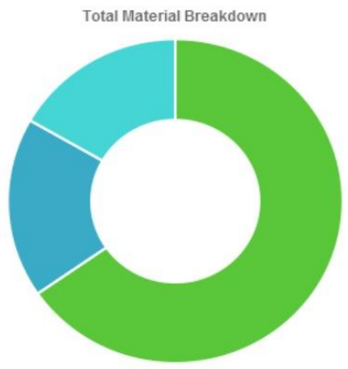
Staff meeting

Solar Radiation study





Direction and the gratitude of the wind



Concrete	1,812 tCO_2e
Prefabricated Structural Steel	498 tCO_2e
Façade	463 tCO_2e

	Material Family	Quantity
Permanent Works: Superstructure	Concrete	8334.6 m³
	Façade	2060.8 m²
	Prefabricated Structural Steel	567.56 Tonnes

	Total tCO_2e	tCO_2e/CFA	tCO_2e/$HKD
Substructure	**0**	0	0
Superstructure	**2772.54**	0.49	11.09
Temporary Works	**0**	0	0
Total	**2772.54**	0.49	11.09

Custom Analysis
For all Rooms Included in Daylighting

Total Both - 3% Passing
97% either time below threshold
0% either time above threshold

12:00 pm - 3% Passing
June 18
GHI: 227, DNI: 205, DHI: 23
97% below threshold
0% above threshold w/o shades

LEED level2 **0 LEED points**
For all Rooms Included in Daylighting

Total Equinox - 45% Passing
49% either time below threshold
6% either time above threshold

9:00 am - 58% Passing
Equinox
GHI: 476, DNI: 638, DHI: 88
39% below threshold
4% above threshold w/o shades

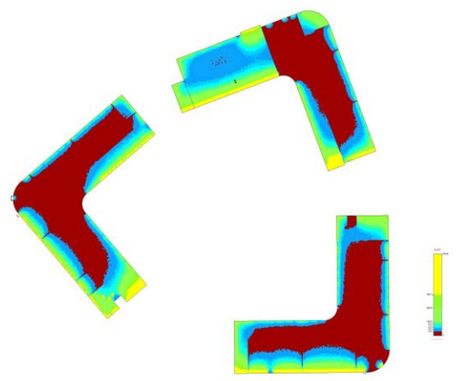
3:00 pm - 60% Passing
Equinox
GHI: 625, DNI: 723, DHI: 91
38% below threshold
2% above threshold w/o shades

LEED level3 **0 LEED points**
For all Rooms Included in Daylighting

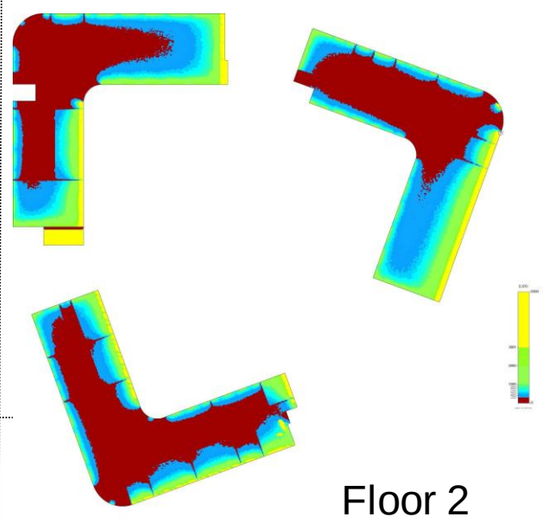
Total Equinox - 33% Passing
62% either time below threshold
6% either time above threshold

9:00 am - 51% Passing
Equinox
GHI: 476, DNI: 638, DHI: 88
46% below threshold
4% above threshold w/o shades

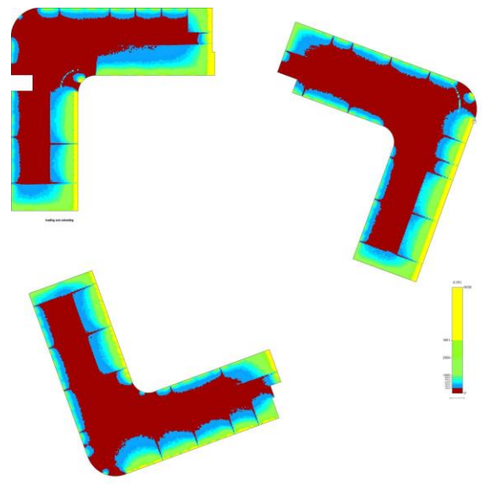
3:00 pm - 55% Passing
Equinox
GHI: 625, DNI: 723, DHI: 91
43% below threshold
2% above threshold w/o shades



Floor 1

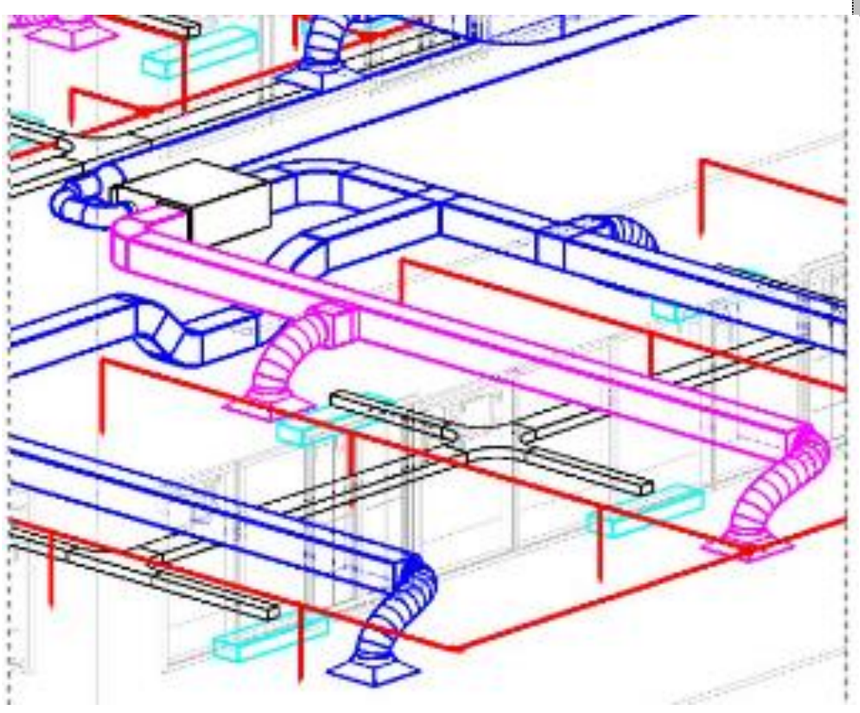


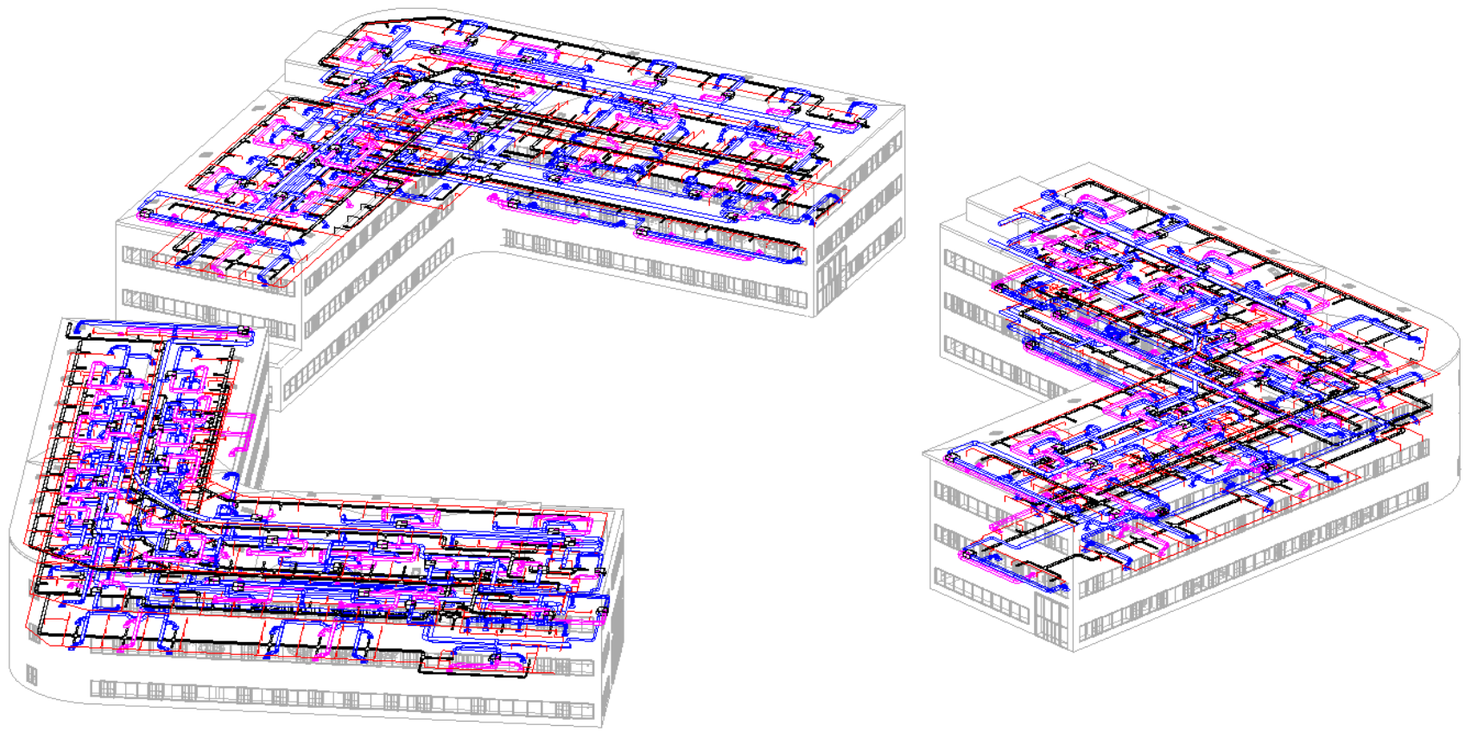
Floor 2



Floor 3

CIC BIM Competition 2024 – Submission Poster Template





Utilization of Mimep foster the schedule and maximize the productivity of the projectss.

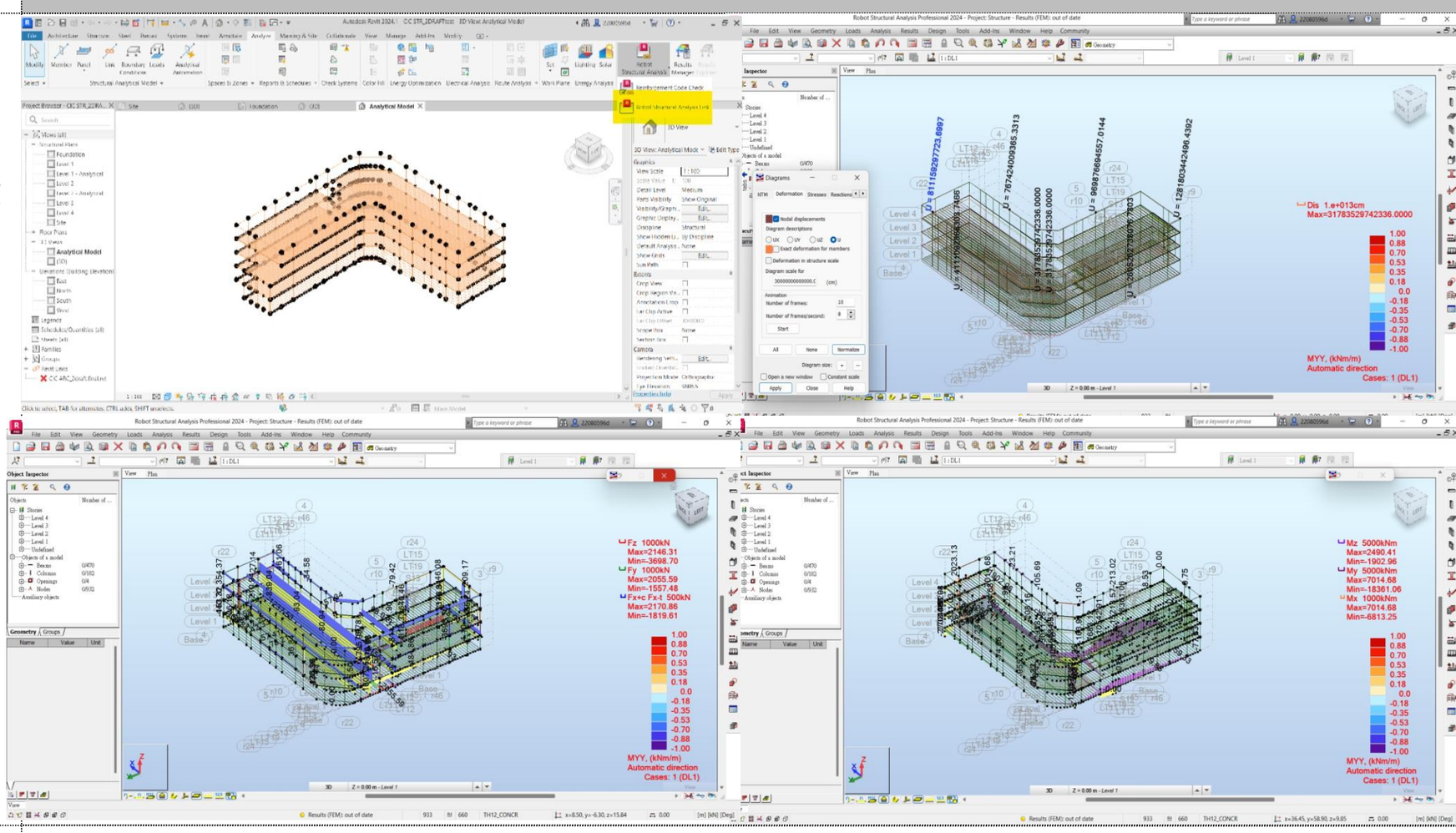
Mechanical, electrical and plumping system are created with various ways and technology. Ways of the system had been optimized by revit. Also, clash detection can be gererated as the report if clash happened.

Revit

We use Revit for the MEP section. Then, clash reports can be generated and be used for the correction of the system.

Robot Structural Analysis Professional

Robot Structural analysis could be used for interpreting the safety of whole structural model.



Work flow

CDE