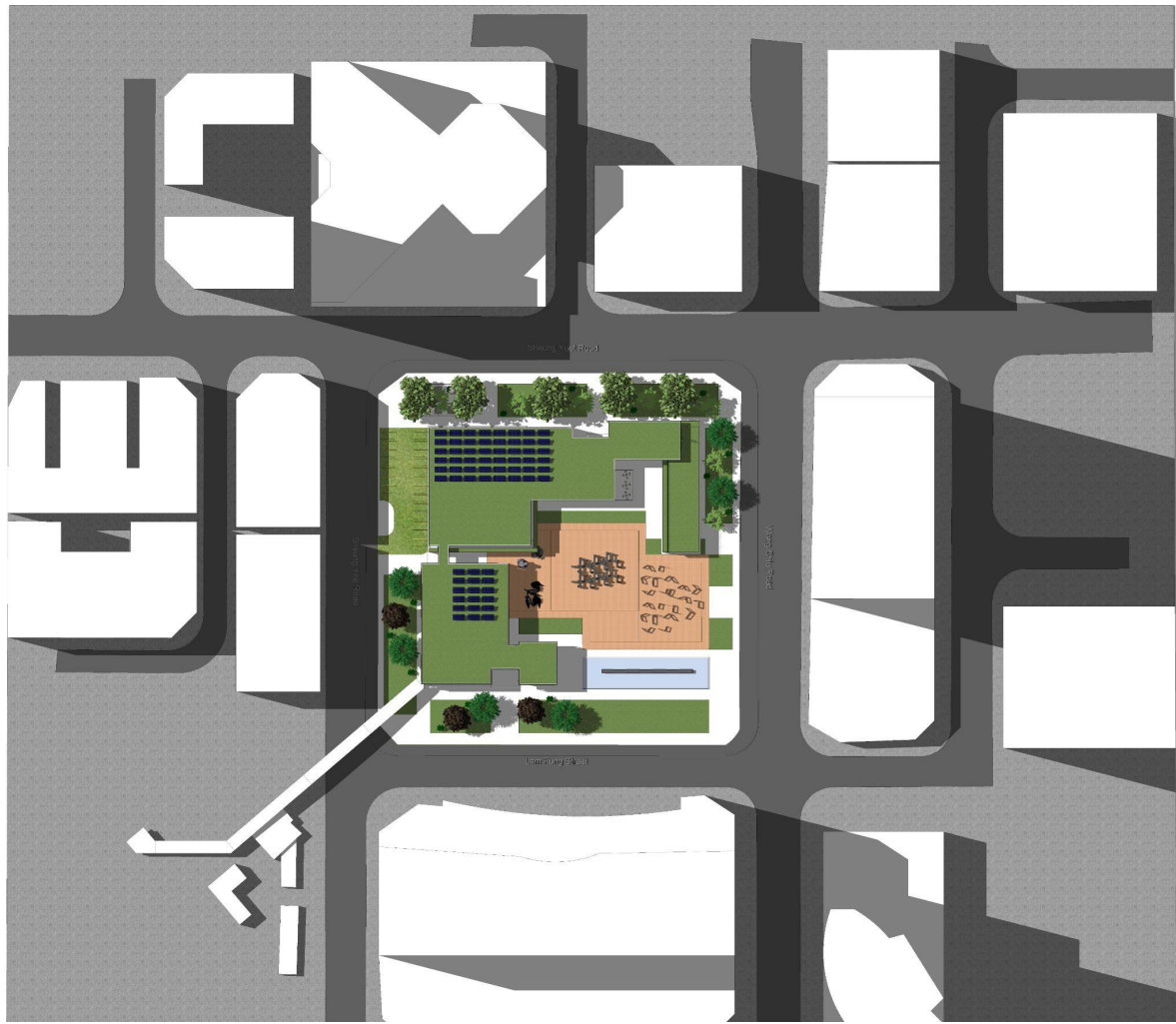


CIC BIM Competition 2021 – JIKY

Location Plan 1:2000



CIC-ZCP is situated at 8 Sheung Yuet Road, Kowloon Bay, Hong Kong

About the Redevelopment of the CIC-Zero Carbon Park (CIC-ZCP)

Design Concept:

The proposed site – CIC-ZCP which is surrounding by high-rise building, and it seems that the quality of environment can be improved , we suggest to separate two part – cities and green, but the fact is that the two parts are interlinked. Hence, we hope to create a Forest In The City as a comfortable internal spaces, when visitors visit the park have the experience in stay in the forest and ignore the hubbub in that moment.

Building Form:

The outdoor exhibition space is the center point of the building blocks, most of the blocks are rectangular to fit the generous size and enclosed as a ‘C shape’, then the empty space for entrance which is face to Sheung Yee Road.

Spatial Arrangement:

G/F: The outdoor exhibition area is in the middle. The arrangement of indoor exhibition area and multi purpose room leave different paths for passengers at different directions. The workshops are set at the boundary for attracting people to come in. The green space are given for resting.

1/F: Office faces to the middle of the design. Canteen and meeting rooms set at the boundary. Some green landscape are provided next to the canteen and indoor exhibition area.

2/F: Office faces to the middle of the design. Green landscape are provided next to the meeting room for leisure.

Roof: The green roof can not be accessed, unless for the repairment of the solar panels.

Connectivity:

3 elevators and 4 staircases can be accessed from every part and through every floor to connected the whole building blocks.

BIM Uses in Design, Collaboration, Engineering, Analysis and Optimisation:

BIM provided an intelligent 3D-model based process that gives architecture, engineering and construction professionals the insight and tools, at the same time, it enables document management, coordination and simulation (sun simulation) during the entire lifecycle of our project (plan, design, build, operation and maintenance).

BIM Collaboration approach:

Our team was coordinated the model by using linked model and collaborated in using BIM 360. The information can be shared or transferred to different party during different programs.

Quality of Design:

In the conceptual stage, we used different software to develop our design such as Sketchup and Rhino, etc. After we confirmed our design, then we used BIM to ensure the quality of the design by the size of spaces for us to save time in present the idea with model in high quality.

Sustainability:

The building blocks incorporate sustainability features through careful environmental analysis of sun, wind, and micro-climate conditions on site and the integration of low-impact passive energy strategies.

MiC/ DfMA:

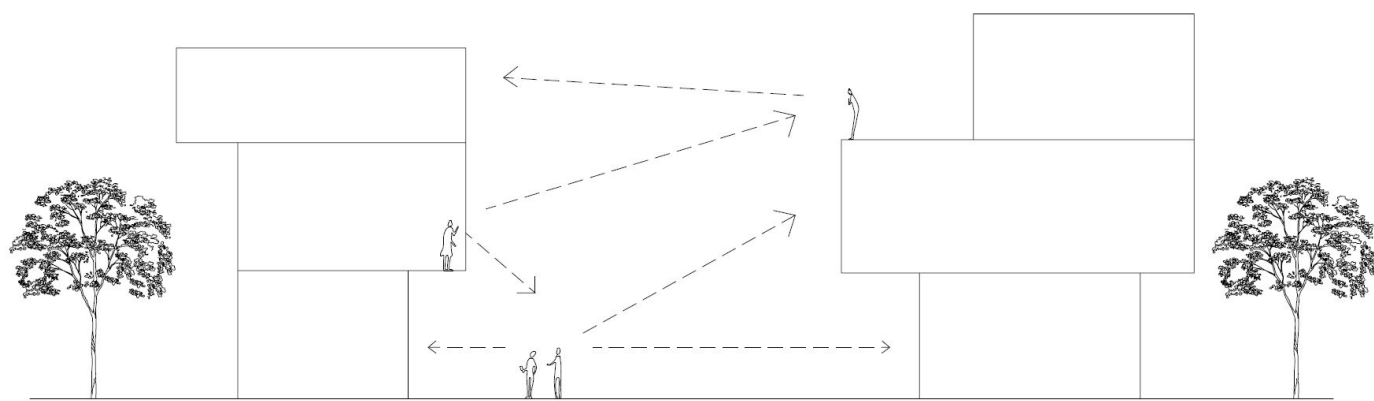
Each of the building block can be one MiC module. MiC is an innovation construction method which is free-standing integrated modules are manufactured and assembled in a factory, it is help to ease some of the local construction challenges, like weather conditions, scarce labour resources and site constraints, even working environment and site safety to achieve the sustainability and environment friendliness.

Constructability:

Automatic sensor and camera can be installed on site during the construction stage, in order to monitor the quality of work. Also, we could use AR and 4D construction simulation to preview the installation process to detect the danger in the site.

Summary:

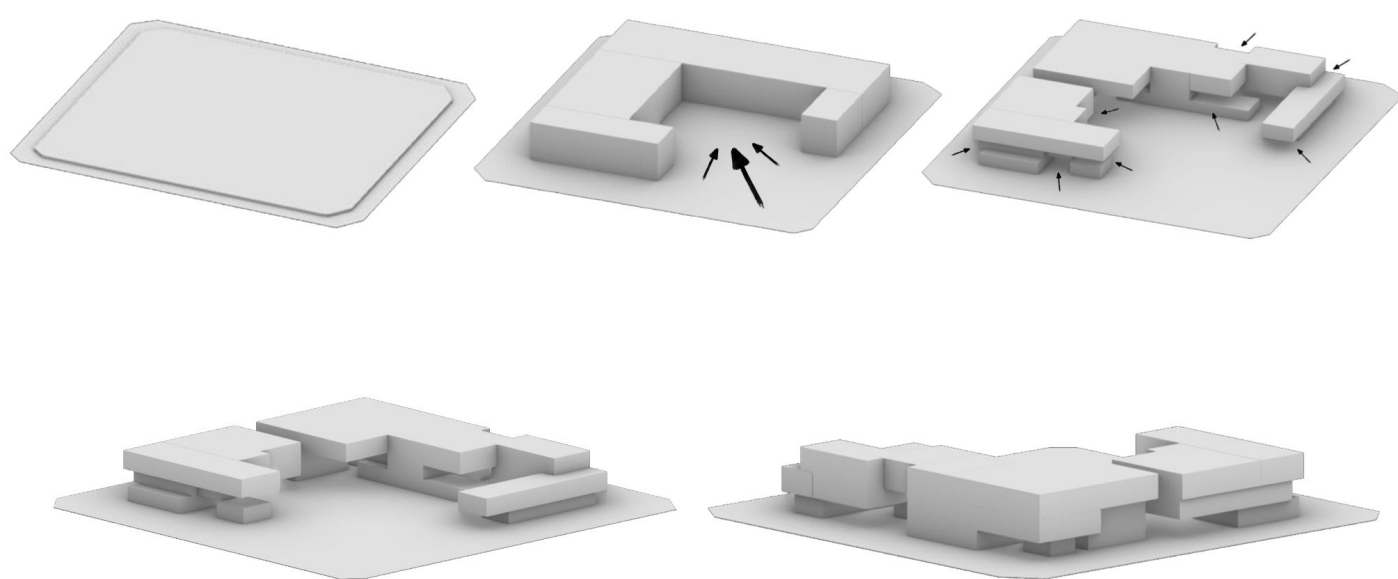
Most of the building information can be easily shown in different software after using BIM technology, like to present the design process, analysis the site environment and detect the clash issues before the construction stage, therefore BIM can provide multiple ways for collaboration.



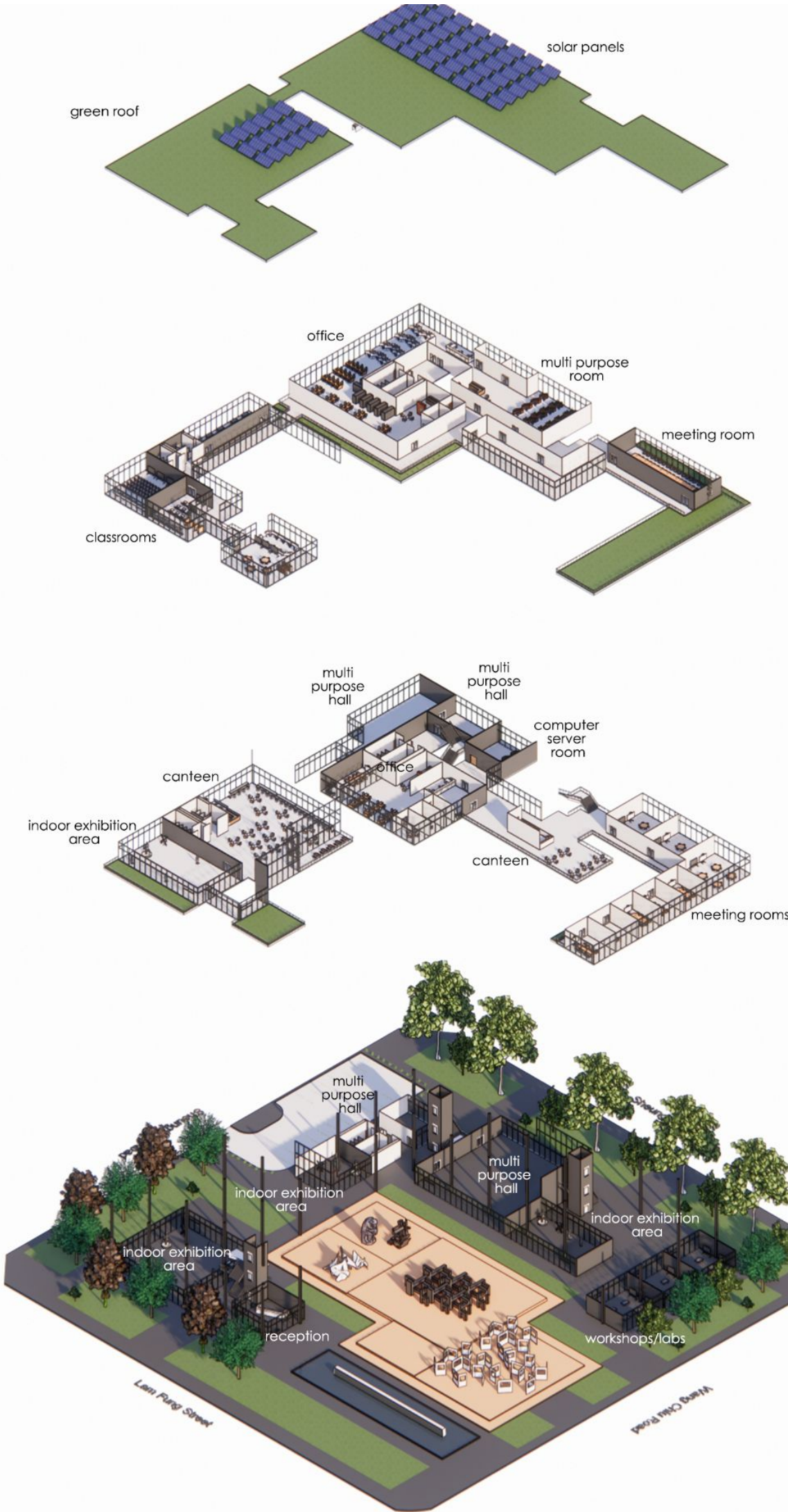
Conceptual Diagram: The concept of the design building is to create a Forest In The City as a comfortable community spaces and support AECOO industry.



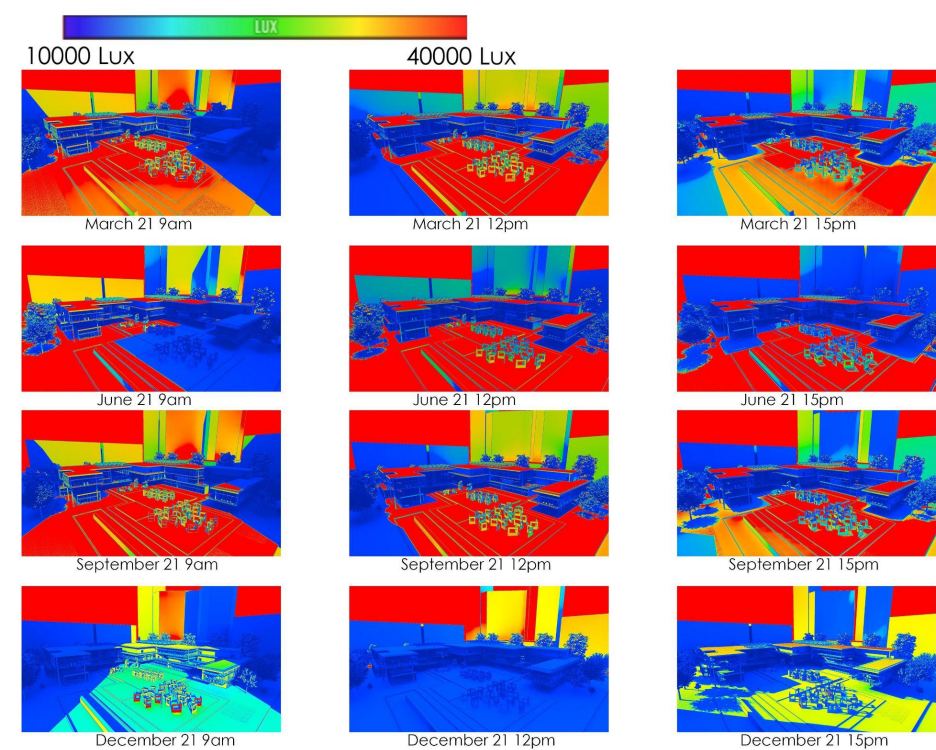
Overall Bird Eye view: The designed building is at the middle of four busy roads. The designed site is full of green landscape which does a big contrast to the surrounding. The water pond and the greenery part are for the visitors carry out leisure activities. the upper floor can enjoy a better view which focus on the outdoor exhibition area. The in and out between the indoor and outdoor can increase the experience of the visitors to the natural environment.



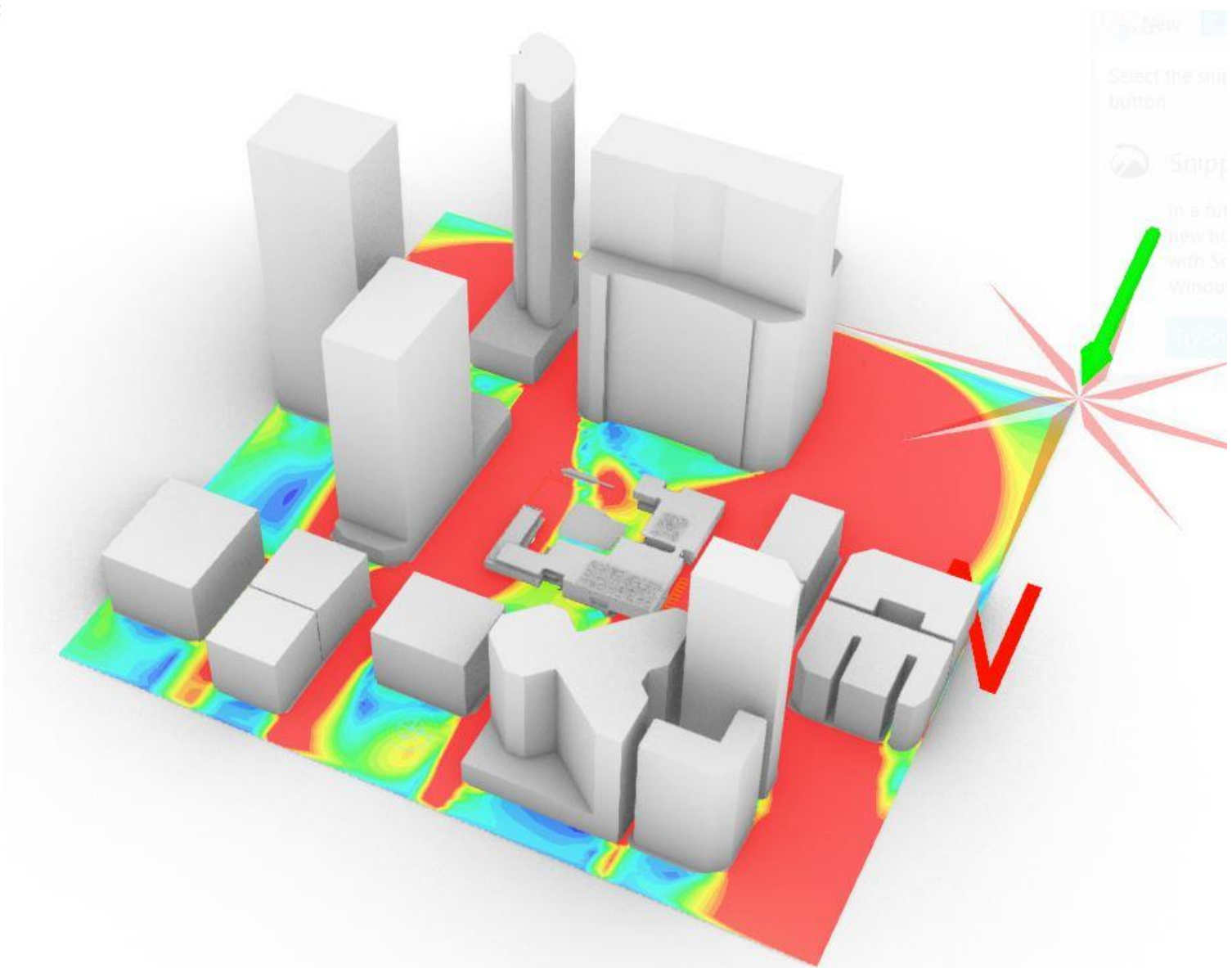
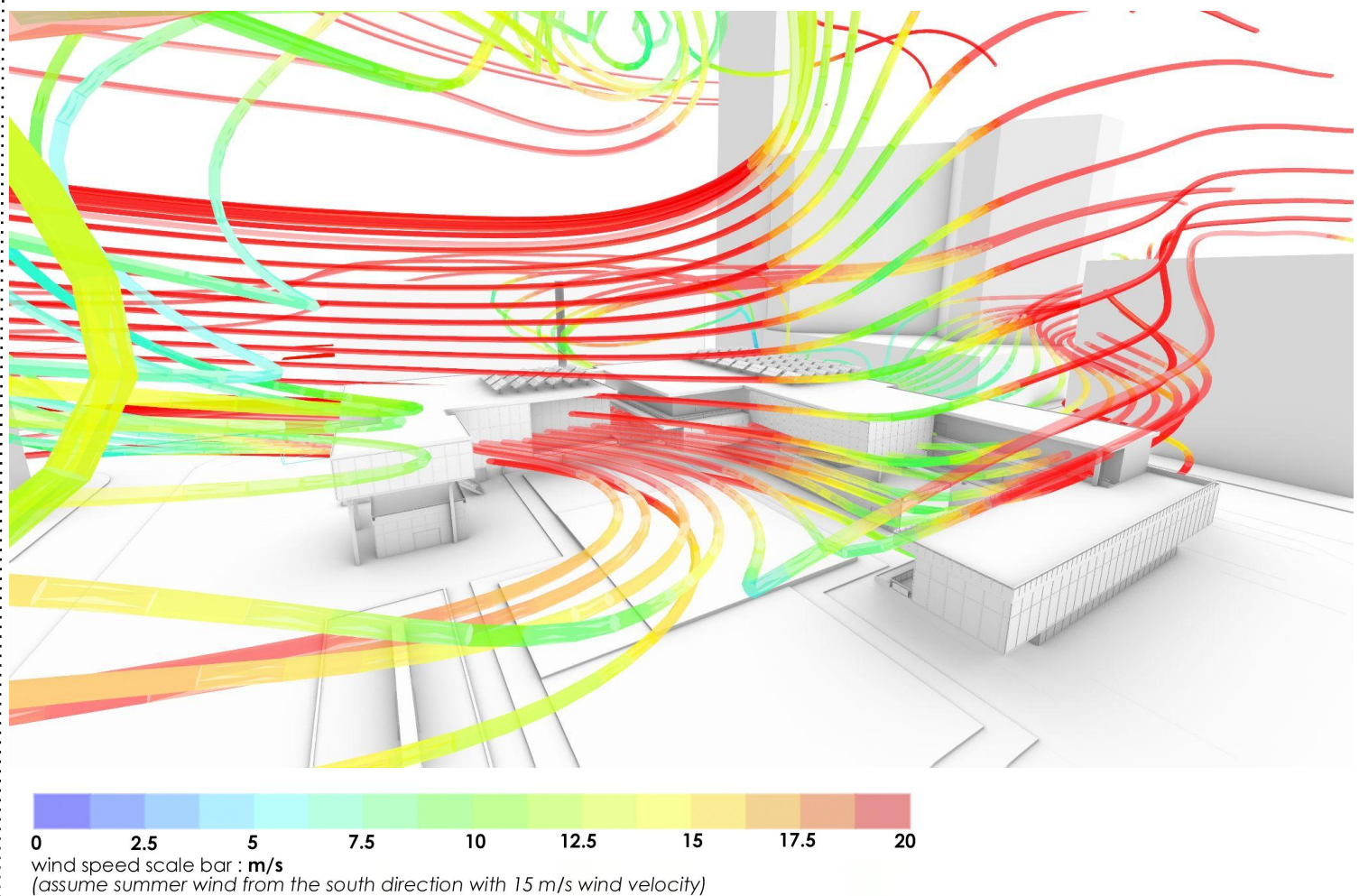
Building Form and Space: These figure shows the overall building form. The outdoor exhibition space is the center point. Other programs surround the center. Subtraction of the block provides more platform and landscape area.



Program arrangement : most of the program are set at 1/F which can provide the cantilever for the G/F and platform for the 2/F. Many paths are left for access points for 4 directions.



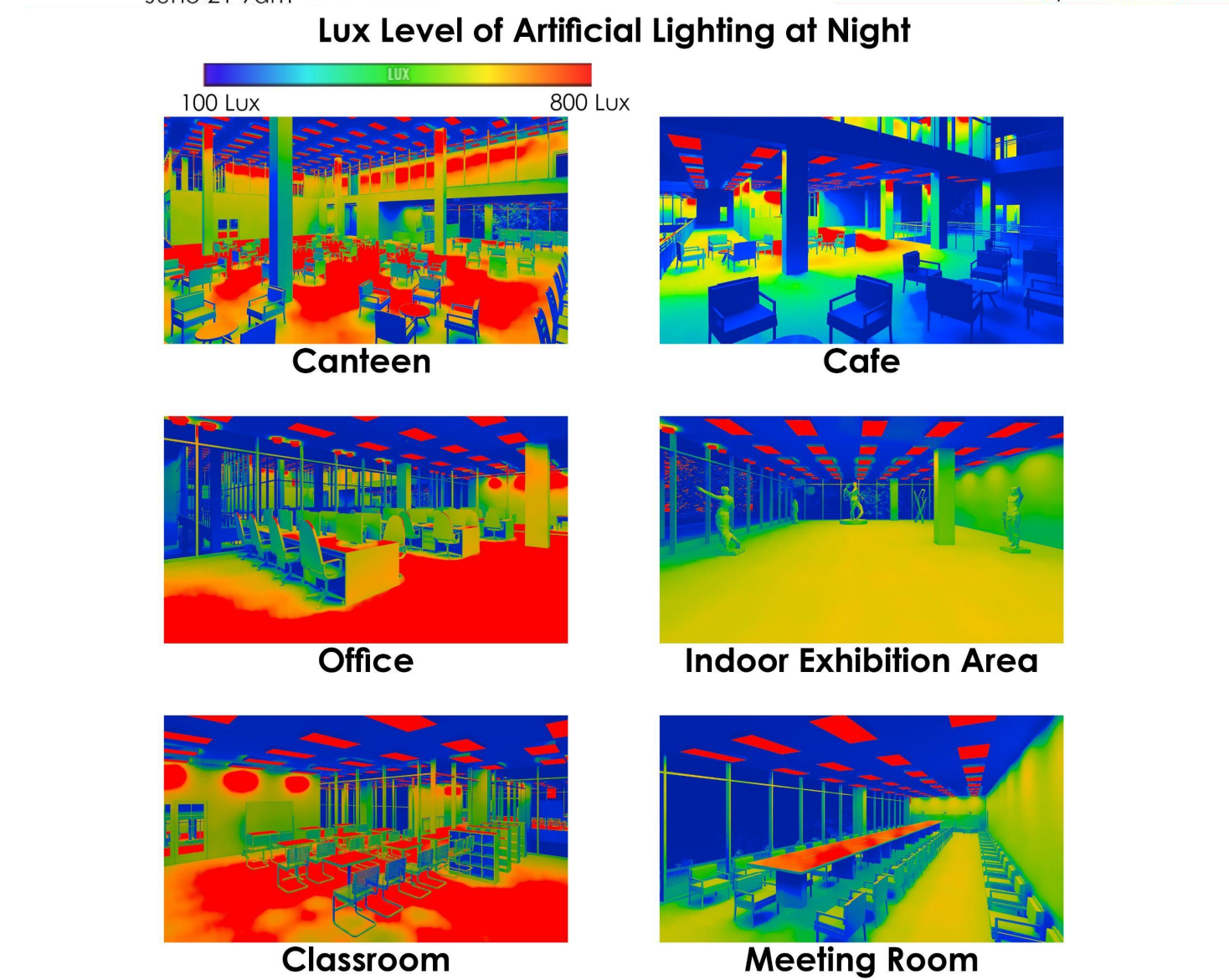
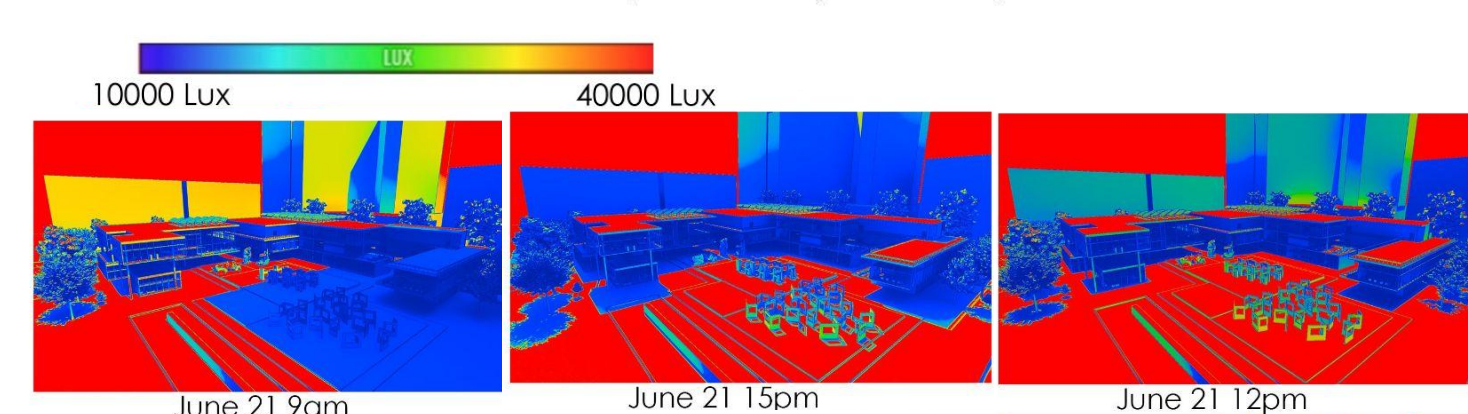
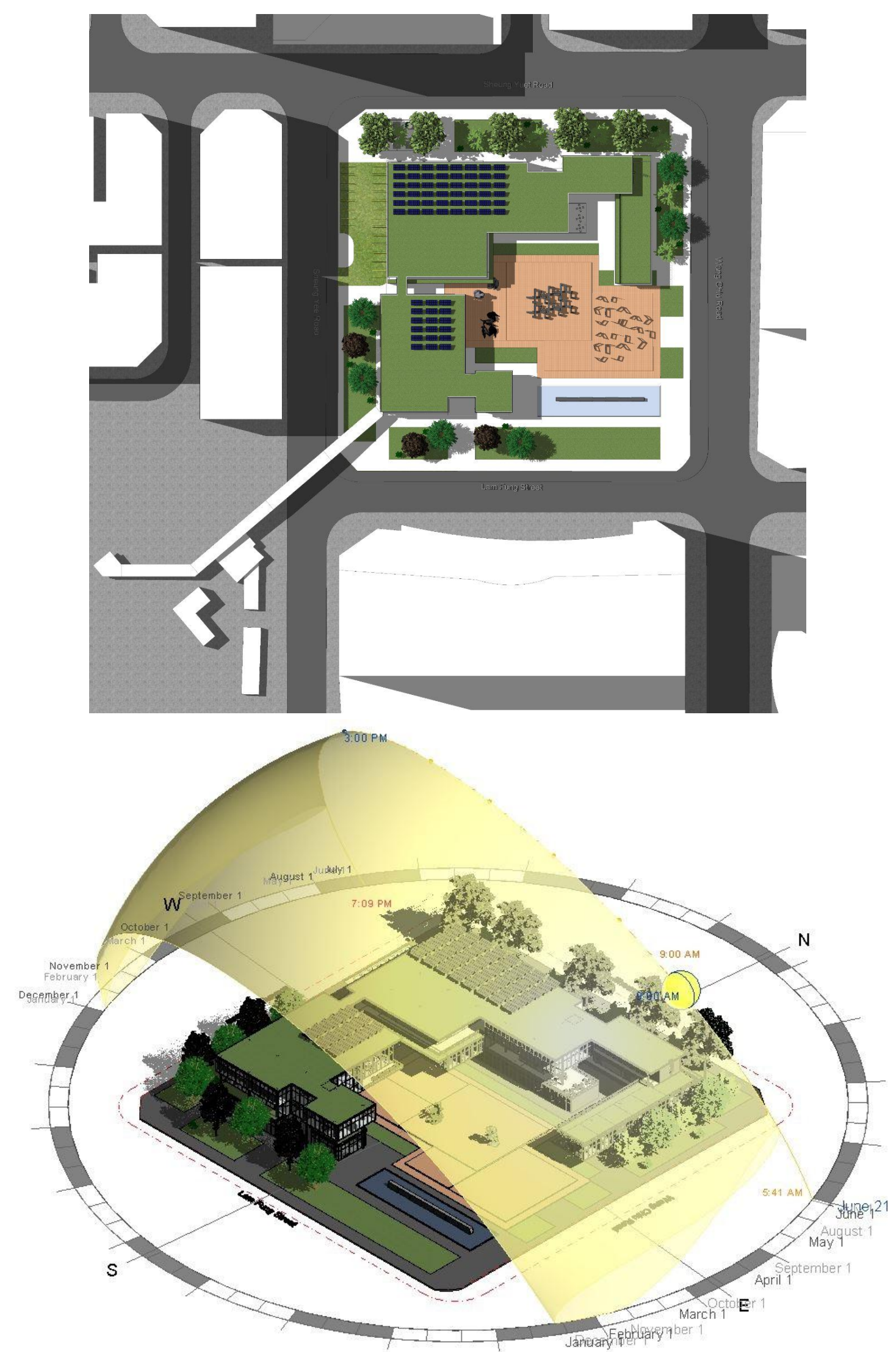
Quality: Indoor air quality, daylighting efficiency and green roof analysis by CFD simulation.



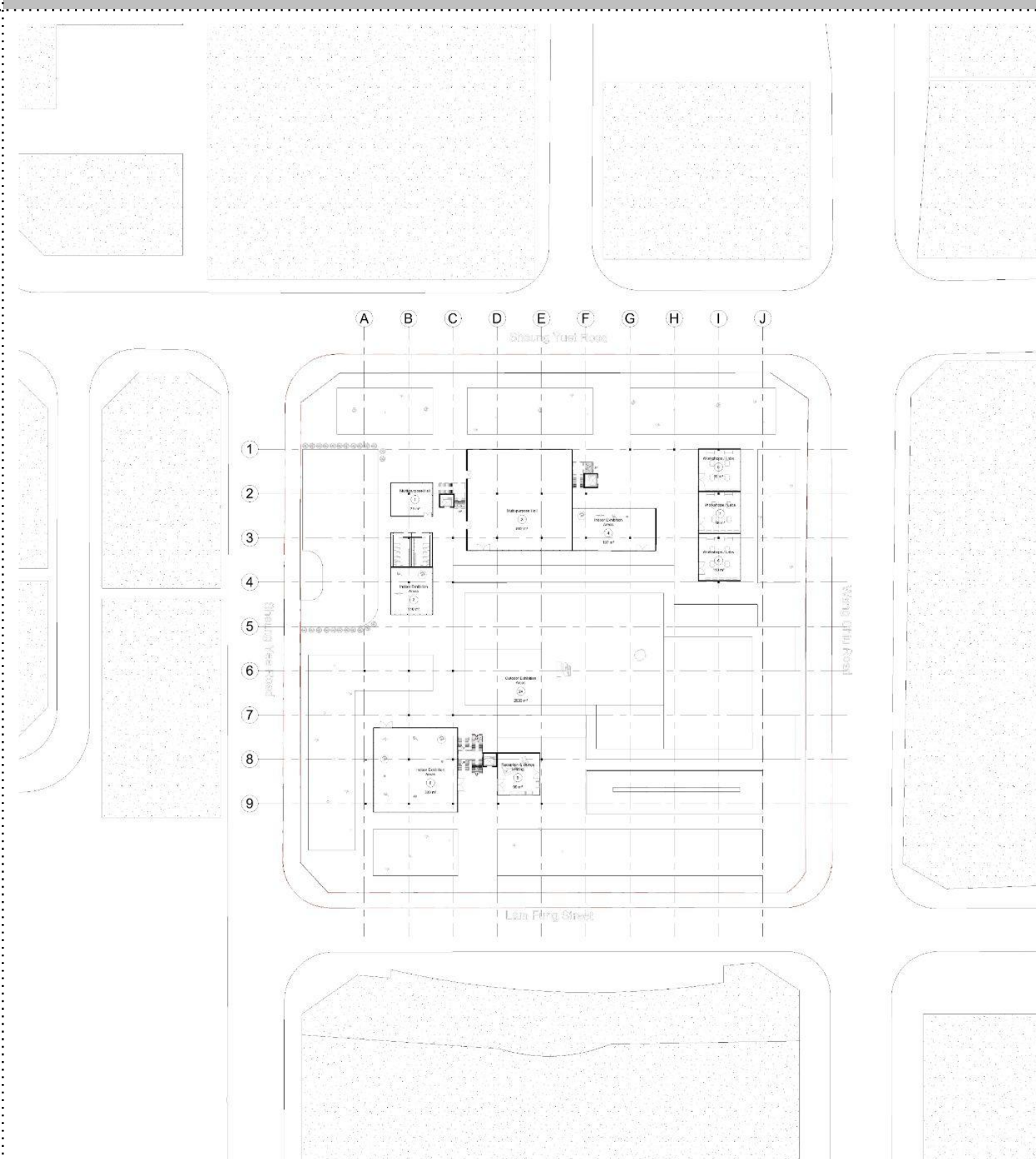
Sustainability: Solar study and ventilation analysis by using CFD simulation to decide the position of solar panel at roof and have large opening for natural ventilation.

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Site Layout Plan 1:1000



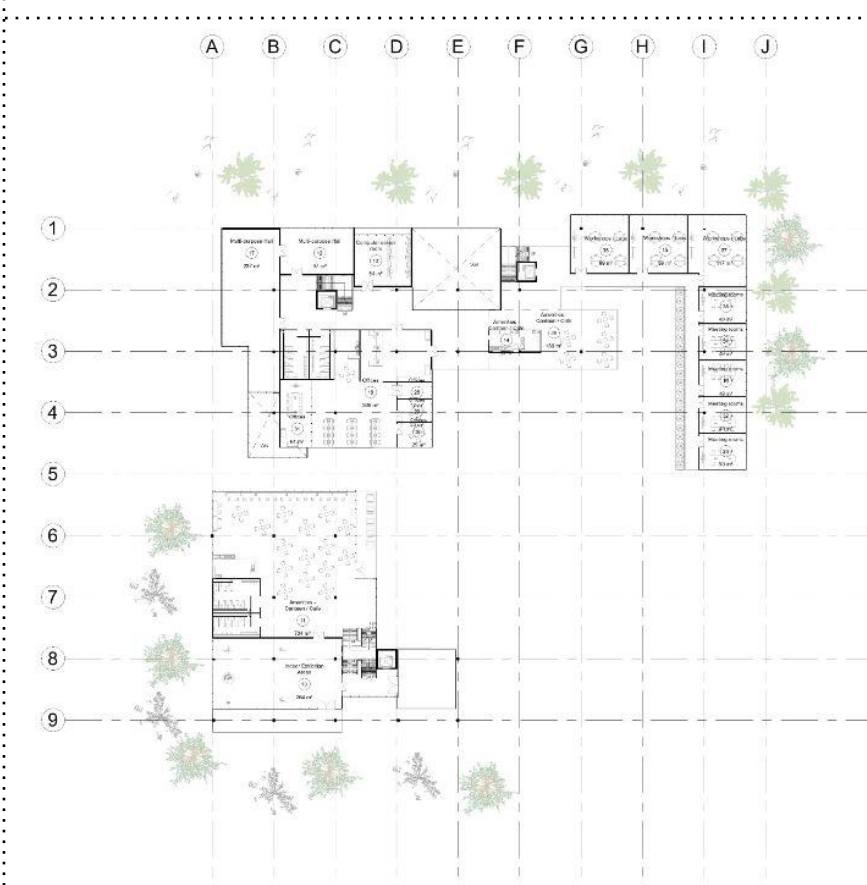
Perspective View: The whole building shows with the landscape design, such as outdoor exhibition area and green roof.



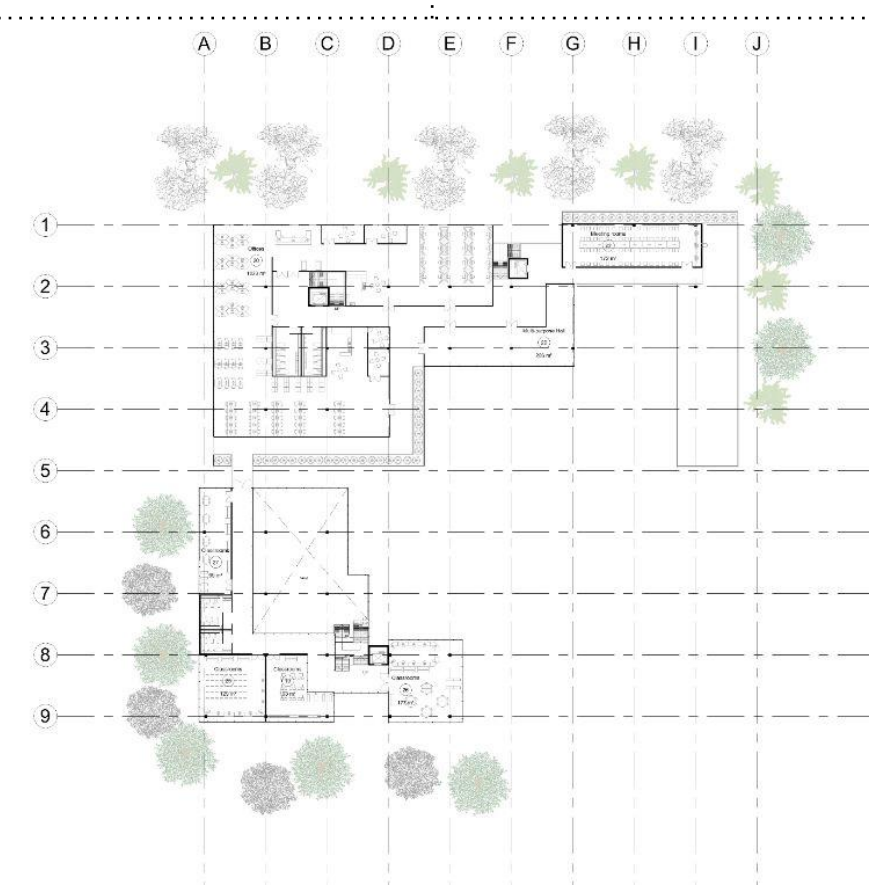
Ground Floor Plan 1:500



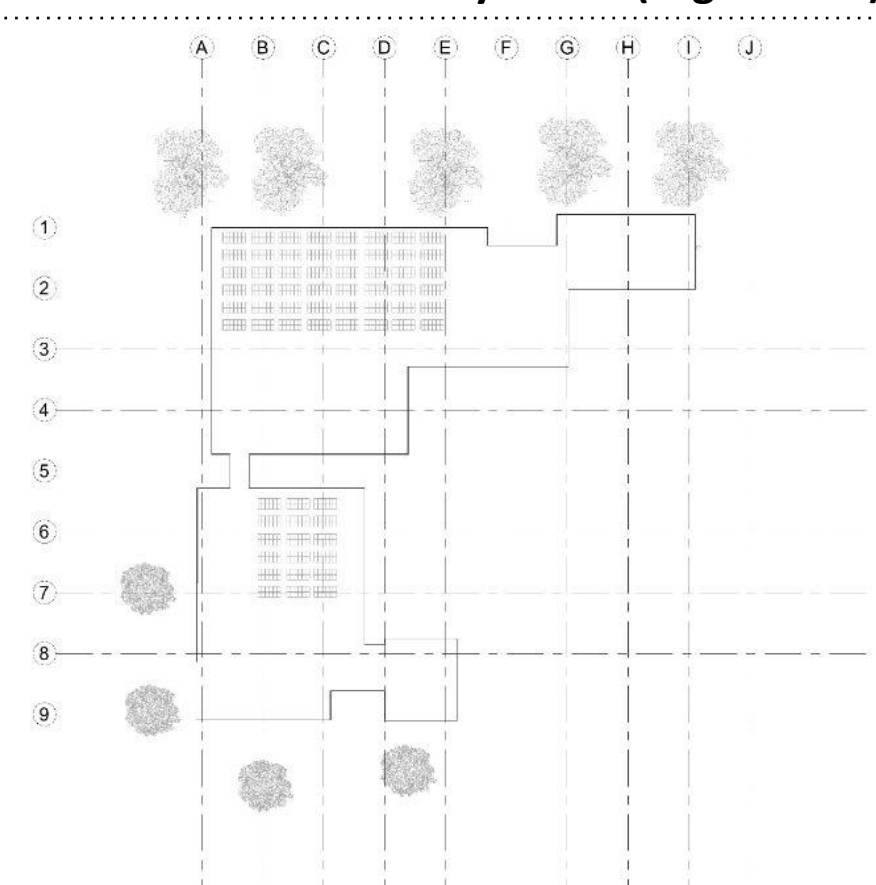
Overall Bird Eye view (Night View)



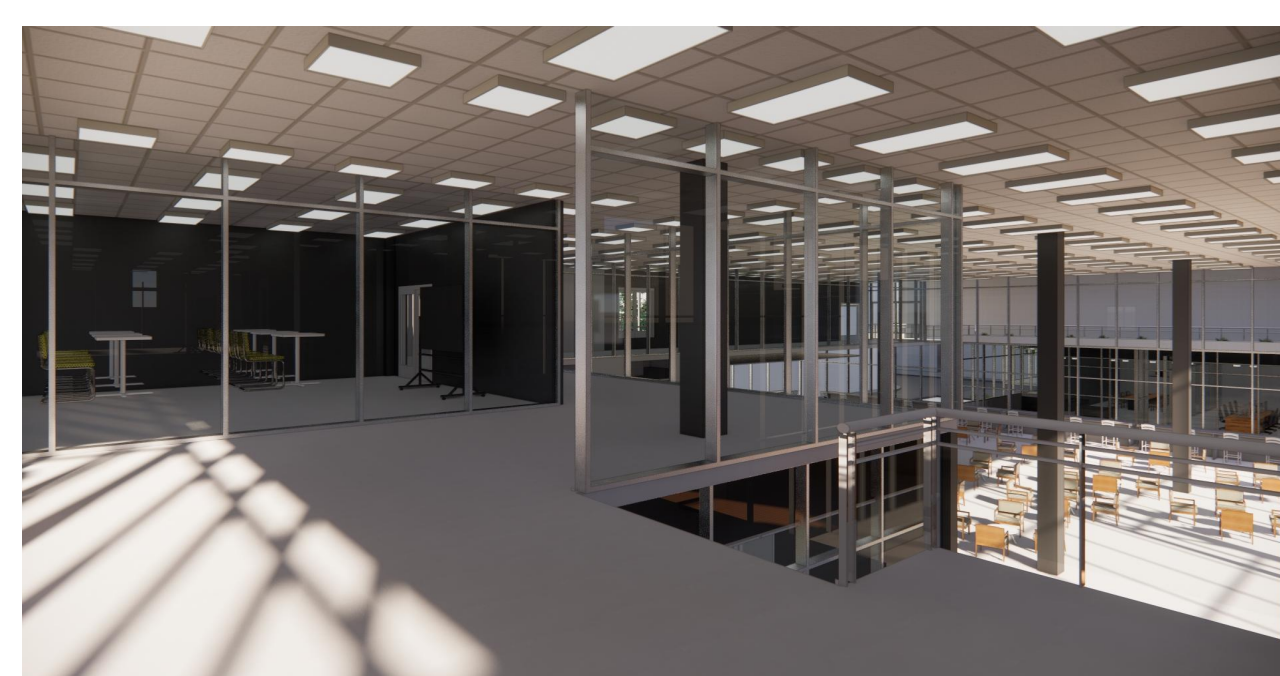
First Floor Plan 1:500



Second Floor Plan 1:500



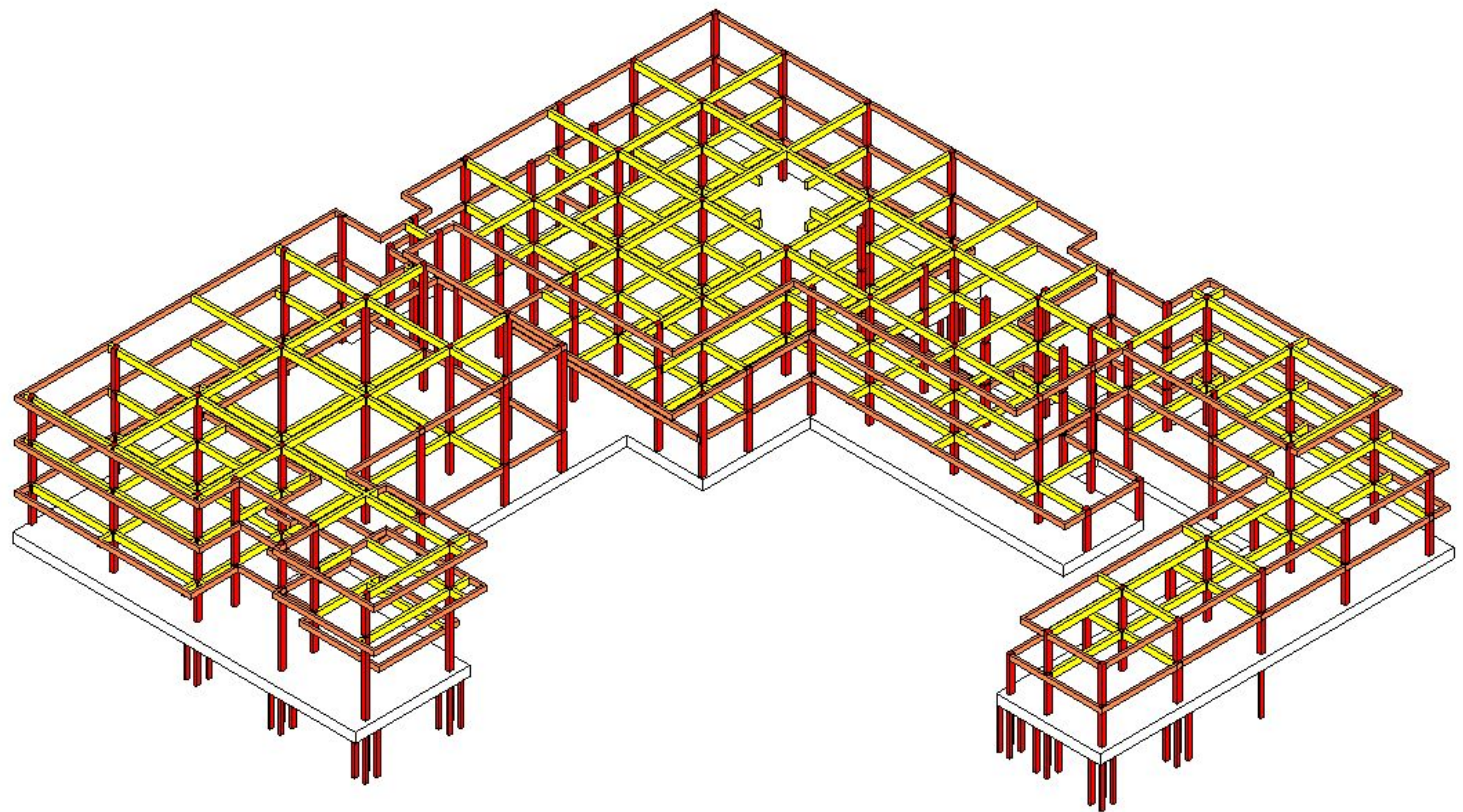
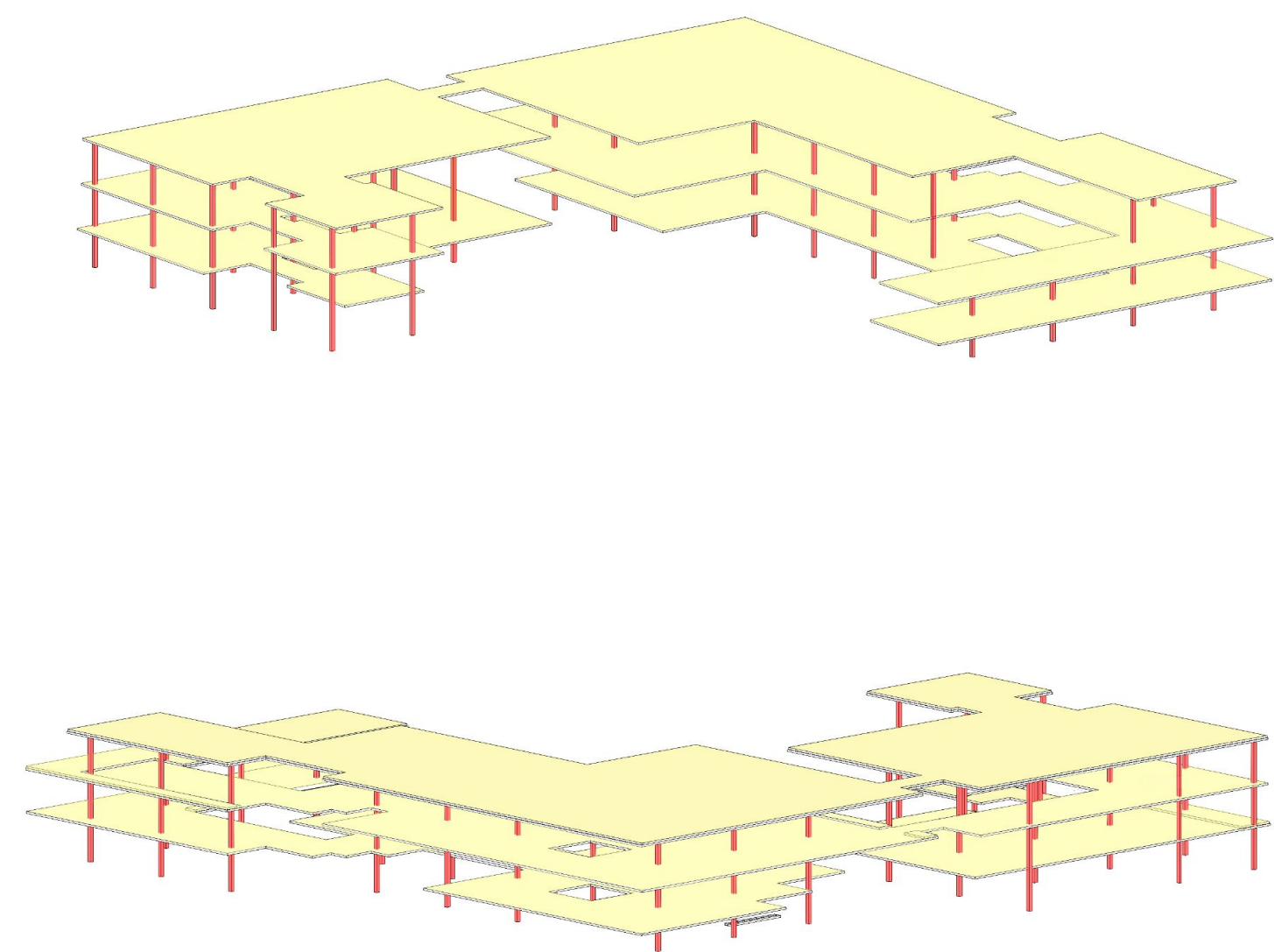
Roof Floor Plan 1:500



Internal Perspective 1:500



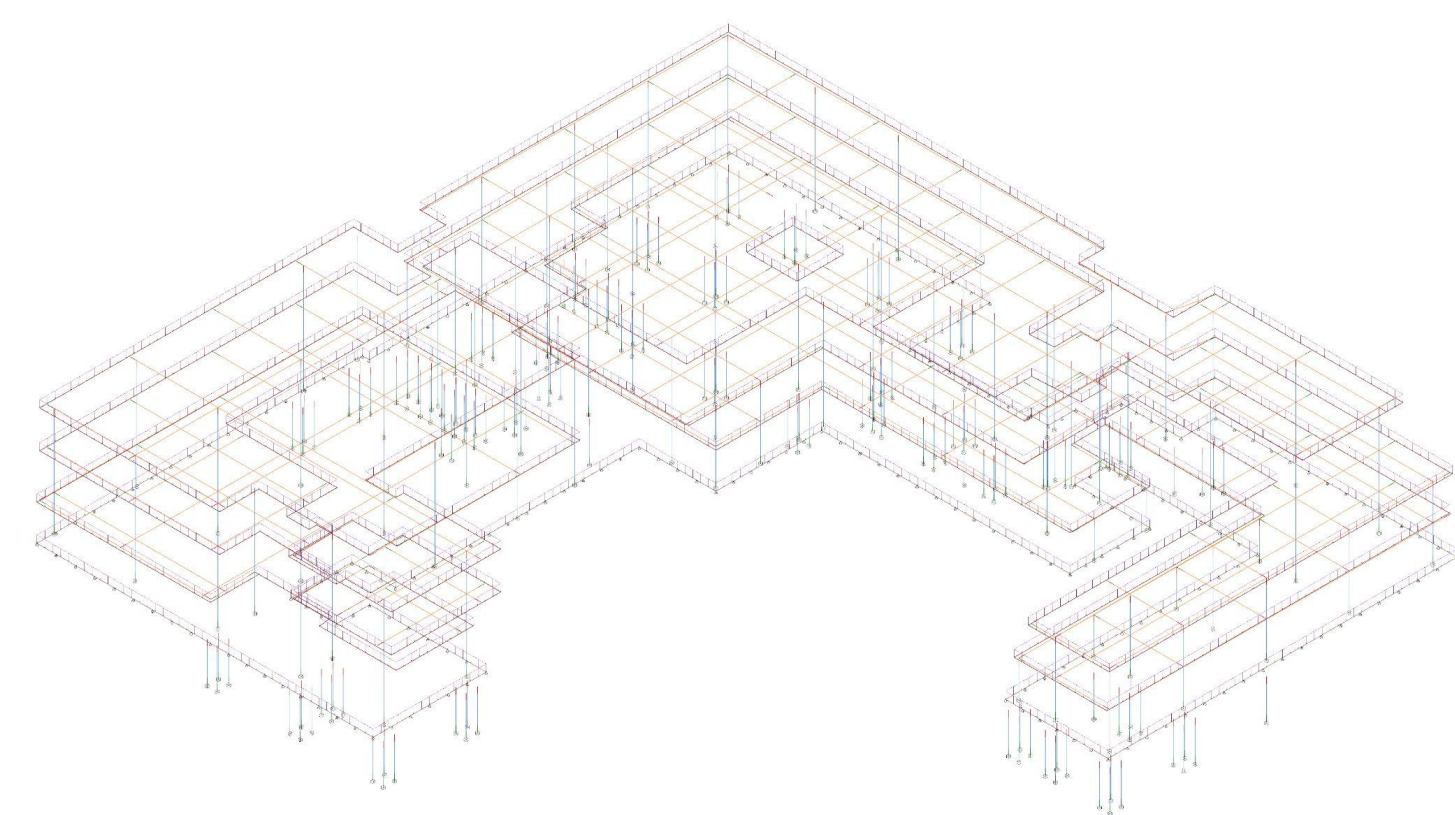
Internal Perspective 1:500



MiC/DfMA: The vital part is the space for the indoor exhibition area in the whole design. 10.5m span of columns in square form is enough for the space.

Perspective View: The structural design of our model is completed in Revit 2021. It is designed in accordance with Code of Practice for Dead and Imposed Loads 2011 and Code of Practice for Structural Use of Concrete 2013

Perspective View: The structural design of our model is completed in Revit 2021. It is designed in accordance with Code of Practice for Dead and Imposed Loads 2011 and Code of Practice for Structural Use of Concrete 2013



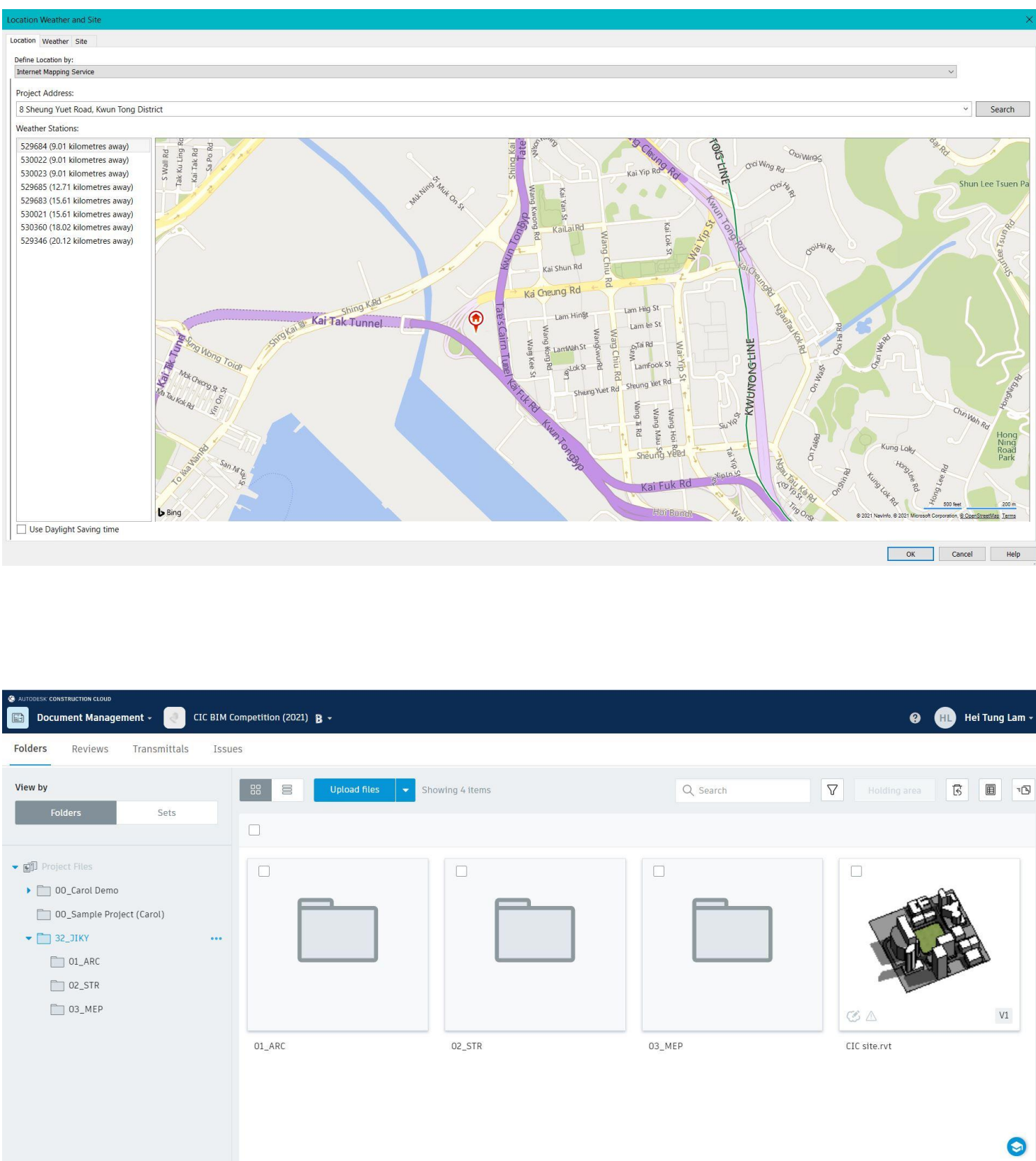
Internal Perspective



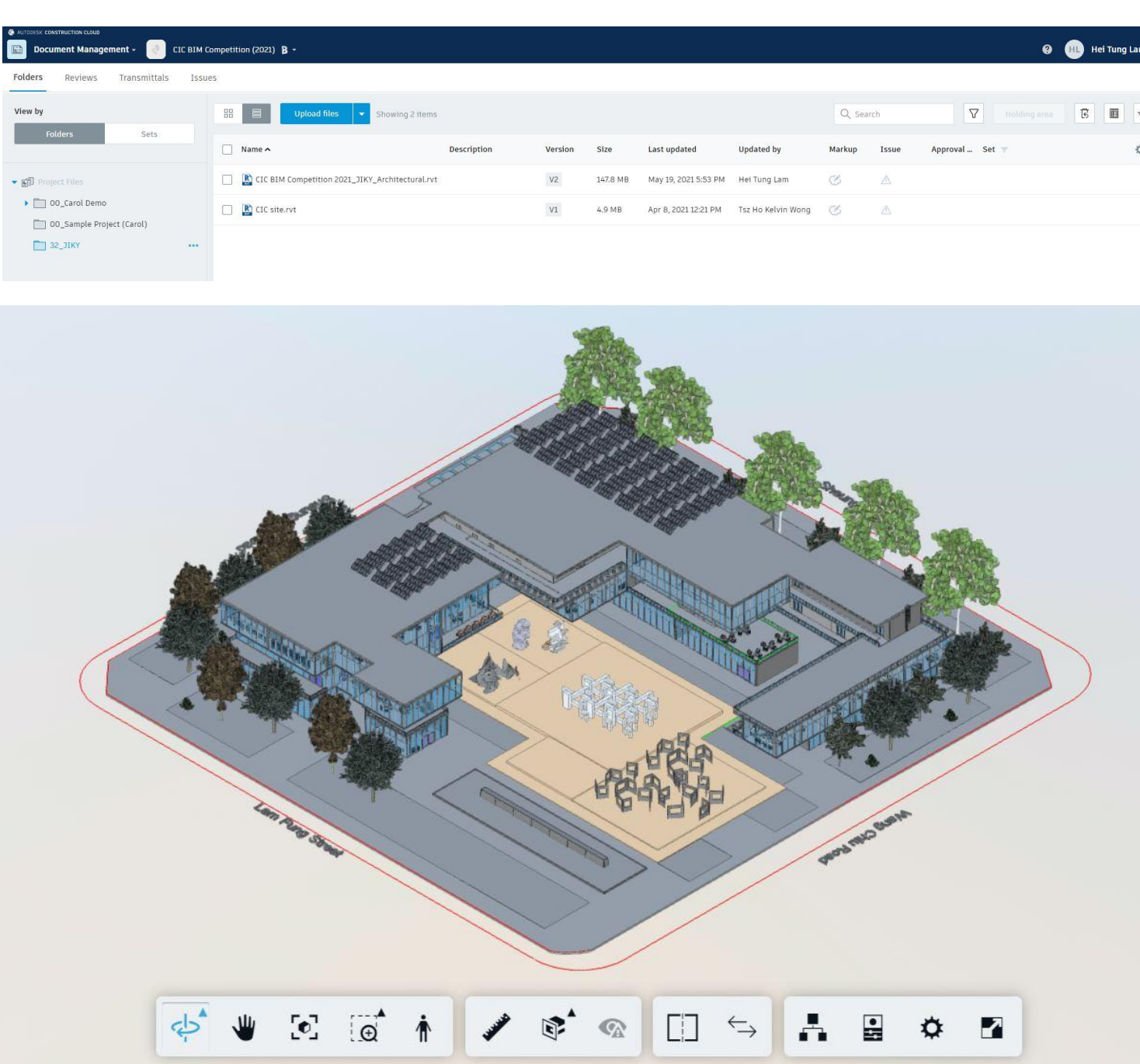
Sectional Perspective 1???

Computational Design : please put in textual description to describe BIM for computational design, engineering, analysis and optimisation approach (structural). Sample text Sample text Sample text Sample text Sample text Sample text Sample text Sample

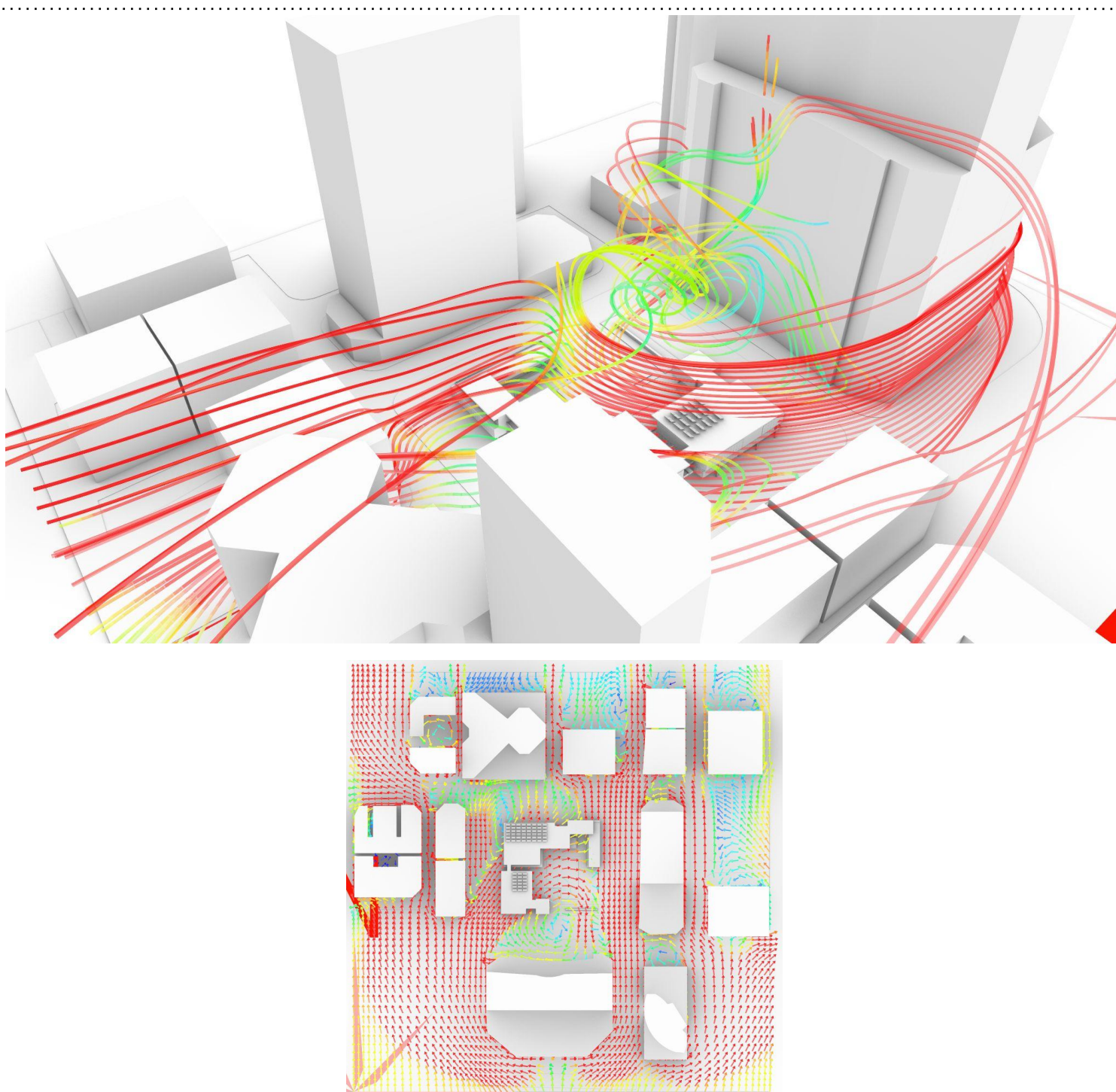
CIC BIM Competition 2021 – JIKY



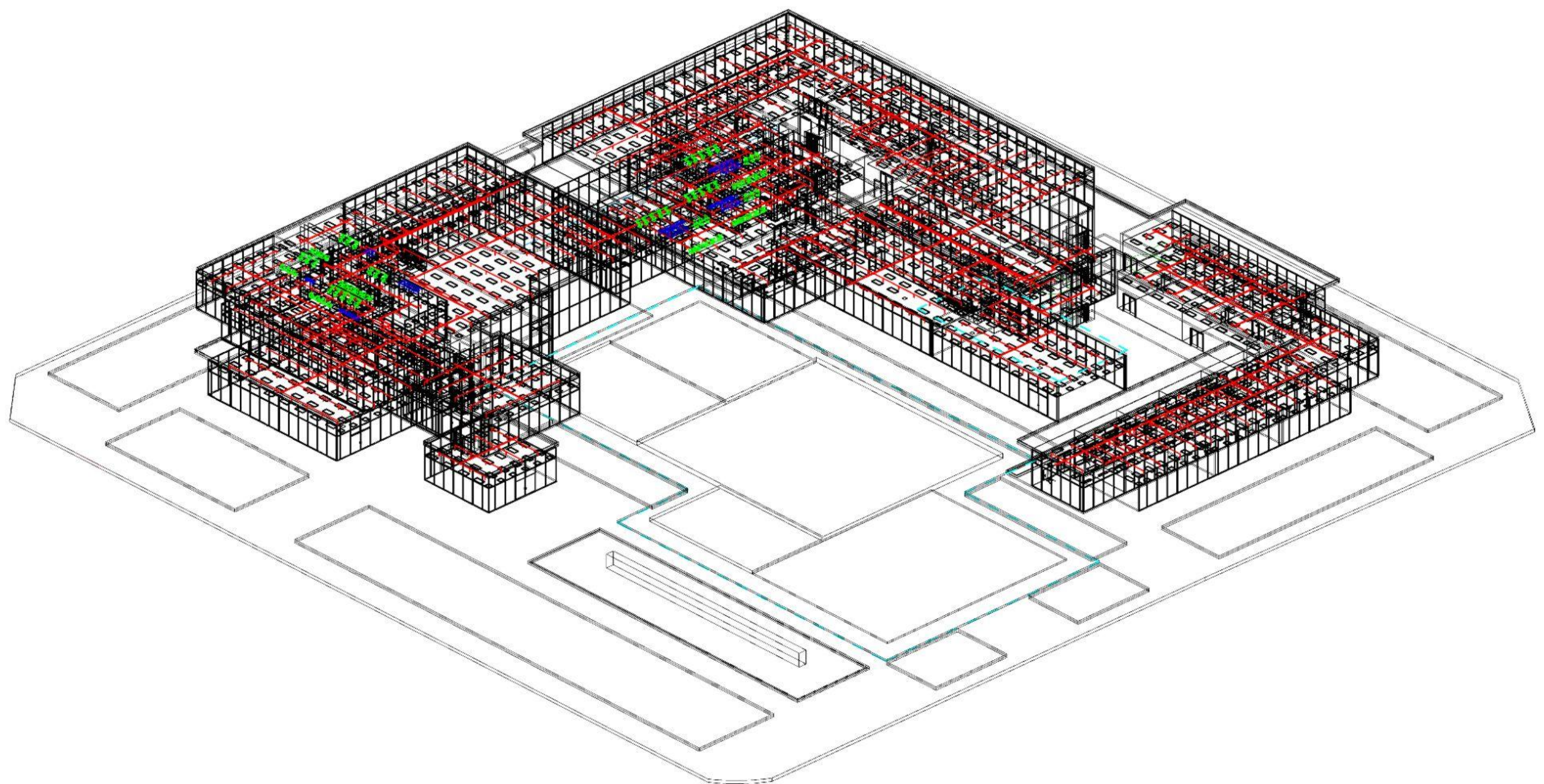
Design Coordination: Specified the BIM model geographic location and allows shared the information for interdisciplinary design coordination. BIM 360 was used to share information for team collaboration.



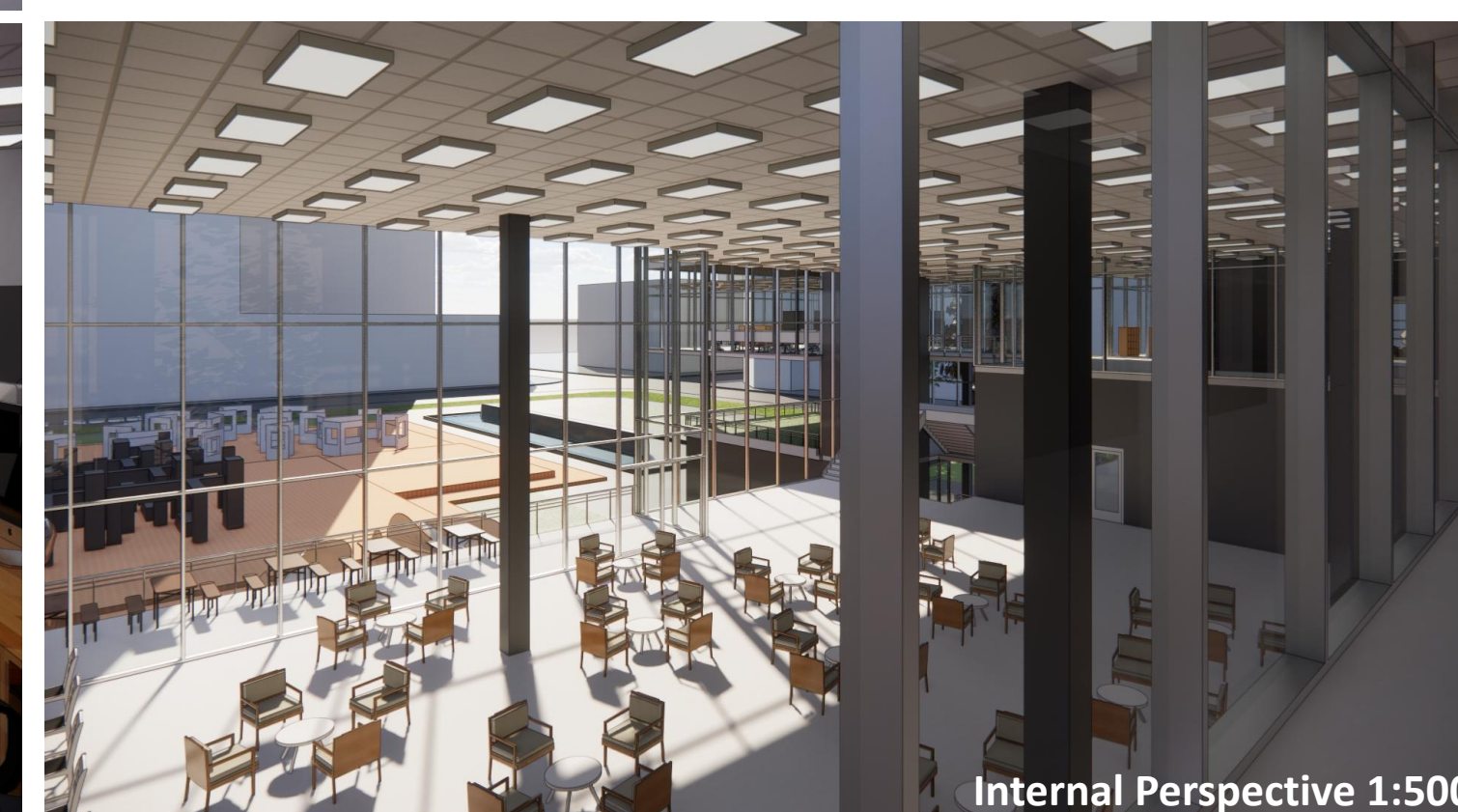
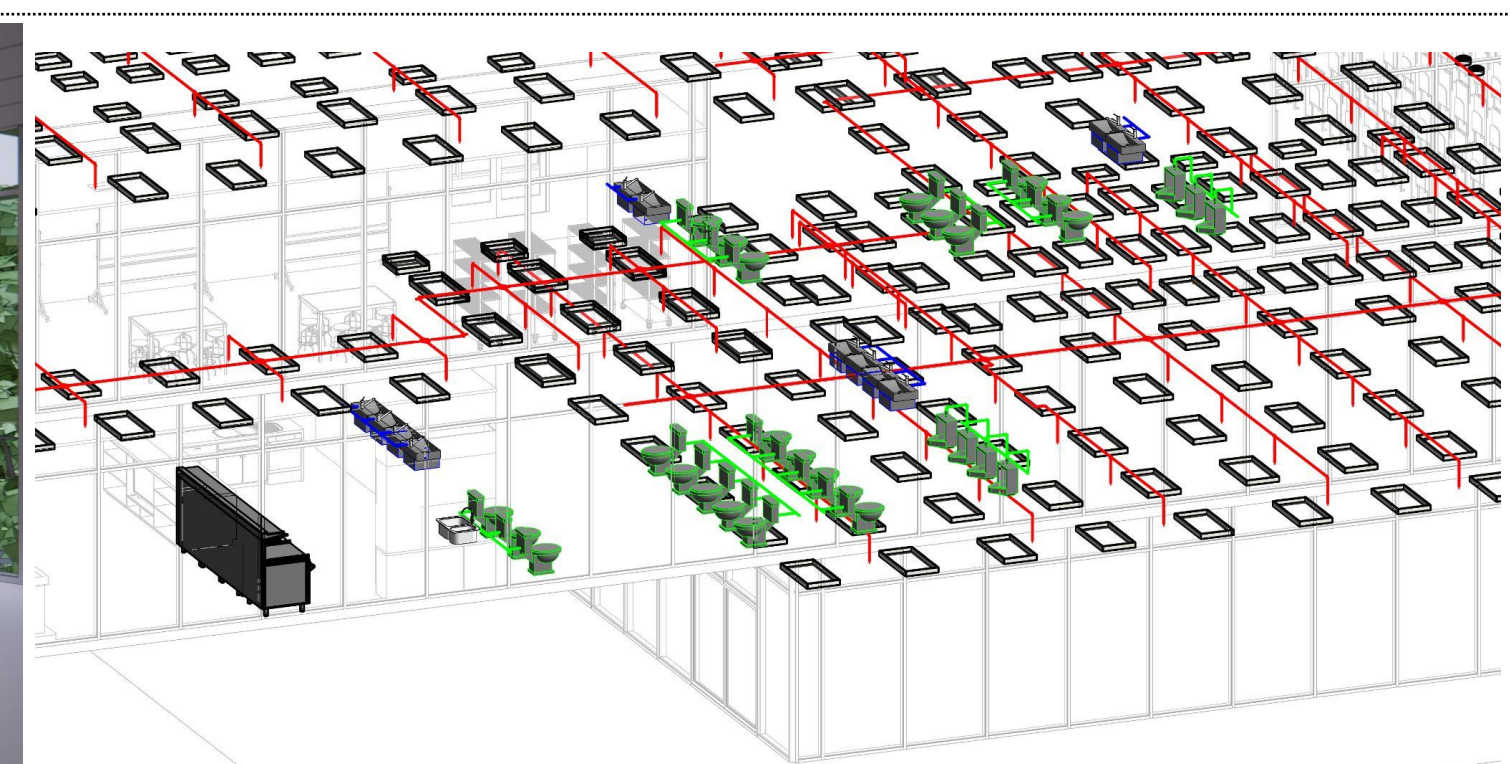
Project Team Collaboration: BIM 360 was used to share information for team collaboration.



Computational Design : Using Rhino CFD simulation to estimate the wind conditions during summer and winter solstice. Also optimize the ventilation efficiency for whole building.



Perspective View: MEP design of whole building with intelligent lighting system, comprising zone control, dimmable energy-efficient light fittings, pre-set scenes for multi-purpose room, time-clock and occupancy sensing, daylight harvest and responsive control.



Internal Perspective 1:500



Sectional Perspective 1:500

CIC BIM Competition 2021
BIM for Design Collaboration