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Conversion Vertical Platform: Changdong·Sanggye Start-Up and Culture Industry Complex

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Abstract Role of architecture should not be limited to function of providing an inhabitable space but also include urban and social role of its impact to the public and surrounding area. Role of landmark building should be further expanded beyond and landmark building speaks out its aesthetics with mass form and/or with its appearance of façade. With study of this project, idea of landmark building is shifted from vertical extrusion of the land to horizontal extrusion of large space from the face of building. It is a double extrusion creating large assembly space up in the air linking surrounding masses.

Keywords Revitalization, Vertical Platform, Ecosystem, Digital Nomad and Open Wall

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1. Introduction

Seoul Metropolitan Government designated Changdong·Sanggye area(approx. 9.8 million m^2) as part of urban regeneration project and is planning to execute the plans gradually. To establish Changdong·Sanggye area as 'employment and cultural center', revitalization programs such as job creation, expansion of activity·leisure foundation, and regional infrastructure were mapped out. Making use of city-owned land(currently public parking lot) can accelerate the project and it will develop the area to basement of Changdong·Sanggye Star-up and Culture Industry Complex.

Three Design Objective of competition were

- Creating a foundation of Start-up Culture for employments and industrial ecology
- Making life, leisure infrastructure for the locals based

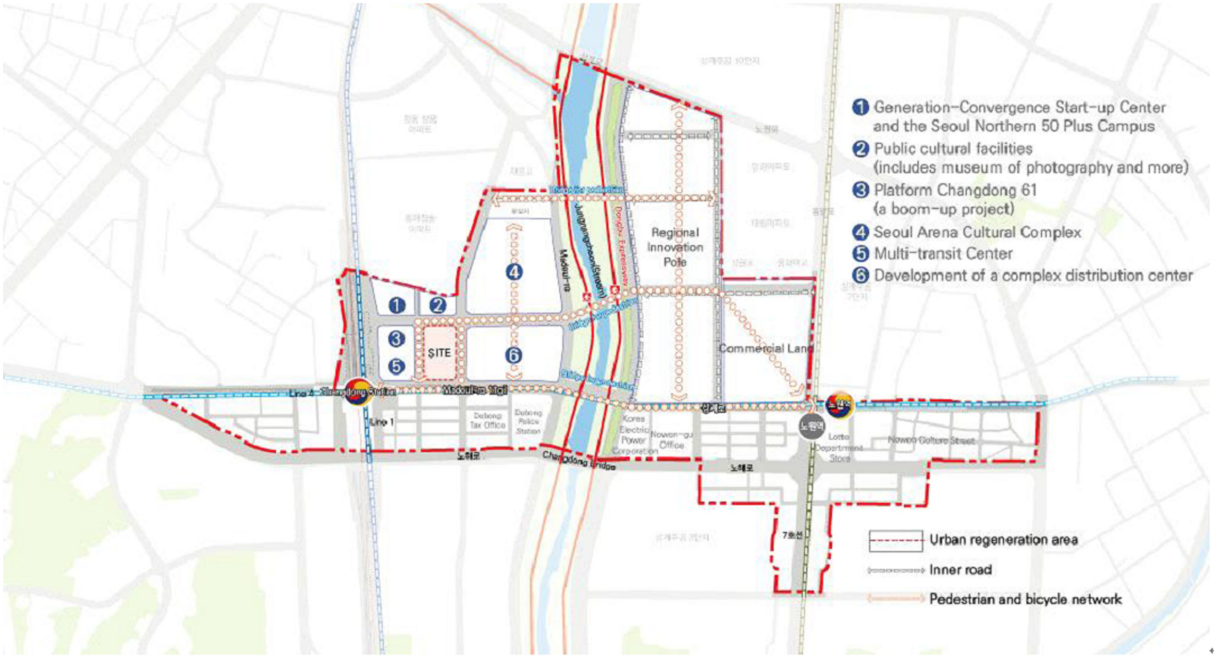


Figure 1. Vicinity Map.



Figure 2. Conversion Vertical Platform.

on the culture industry
- Establishing open space and connection to the surroundings

Design Scope of competition was
- Location : 1-9, Changdong, Dobong-gu, Seoul
- Land area : 10,746 m^2
- FAR: 800%
- Lot Coverage Area: 48%
- Total floor area : approx. 151,600 m^2
- Building Height: 48-story Building with 8 basement floors, 162.7M in height
- Main usage : 'Cultural Attraction', 'Culture Start-up facility'(Culture Industry Office, Youth Start-up Office,

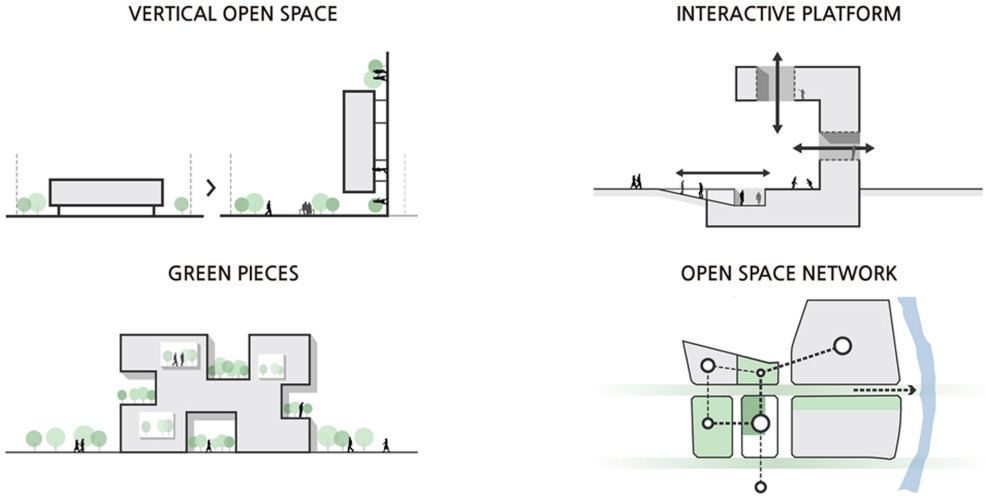


Figure 3. Design Concepts.

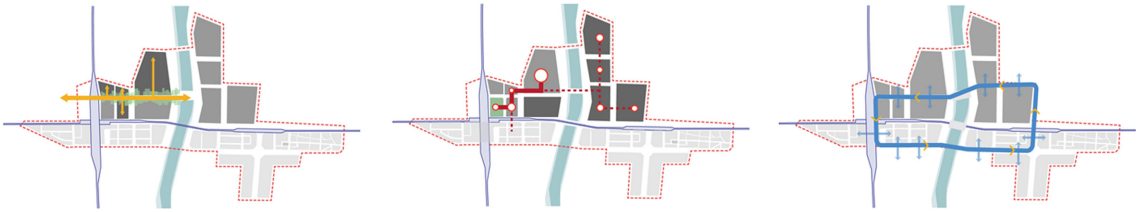


Figure 4. Three Phased Linkage Plan.

Culture Industry Infrastructure), 'Start-up and Creative Residence(Studio Apartment)' and public parking

International Design Competition was held in 2018 and 7 firms including HAENGLIM Architecture & Engineering, nodo17 group, OCA, Steven Holl Architects, Toyo Ito & Associates Architects and SIAPLAN Architects & Planners participated. Design proposal by SIAPLAN was selected as a winner and this paper summarizes its winning design criteria.

2. Design Concept

Changdong·Sanggye Start-up and Culture Industry Complex ("Project") holds four main key design points. First of all, Open Spaces were designed to ensure maximum public space on the ground level and public open space extends vertically beyond the limit of horizontal space. Second point is to create Vertical Platform to multiple directions corresponding with the urban condition in every direction. Surrounded activities are formed through this ecosystem based on Vertical Platform for start-ups. Third is Green Pieces, that allows human-oriented architecture providing intimate nature experience. All facilities of the project exposed to landscape that extends from the interior to outside urban space of interact and rest. Last point is Open Space Network, which contains continuously connected space centered with four Open Space hubs. Open Space Network forms a green axis from Multi-Transit center to Seoul Arena, and then to Jungnang Stream.

The project focuses on 'Culture'. As a way of linking cultural content of the surrounding area, urban linkage is to be formed in sequence by multi-centralizing cultural spaces and planning spaces linking cultural spaces. These cultural spaces will form a framework of response to urban and architectural changes in the future.

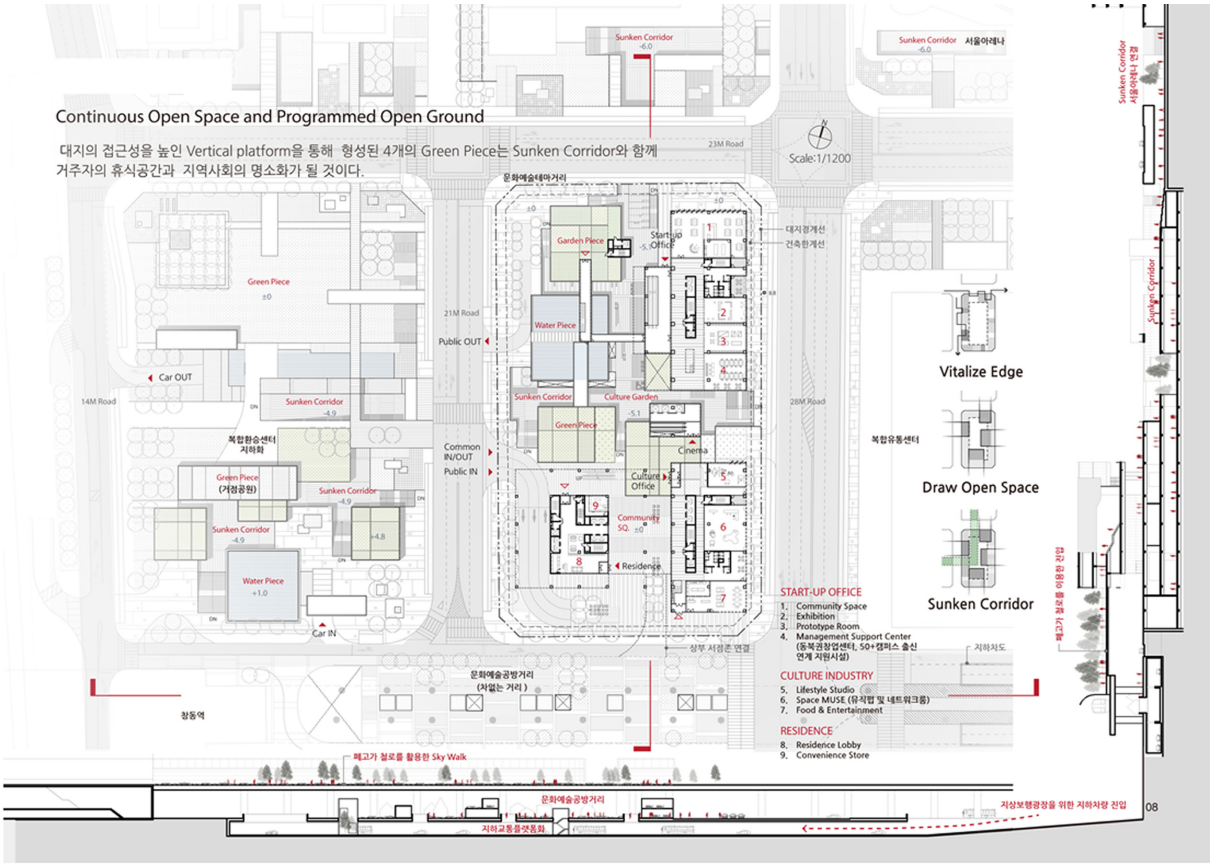


Figure 5. Master Plan.

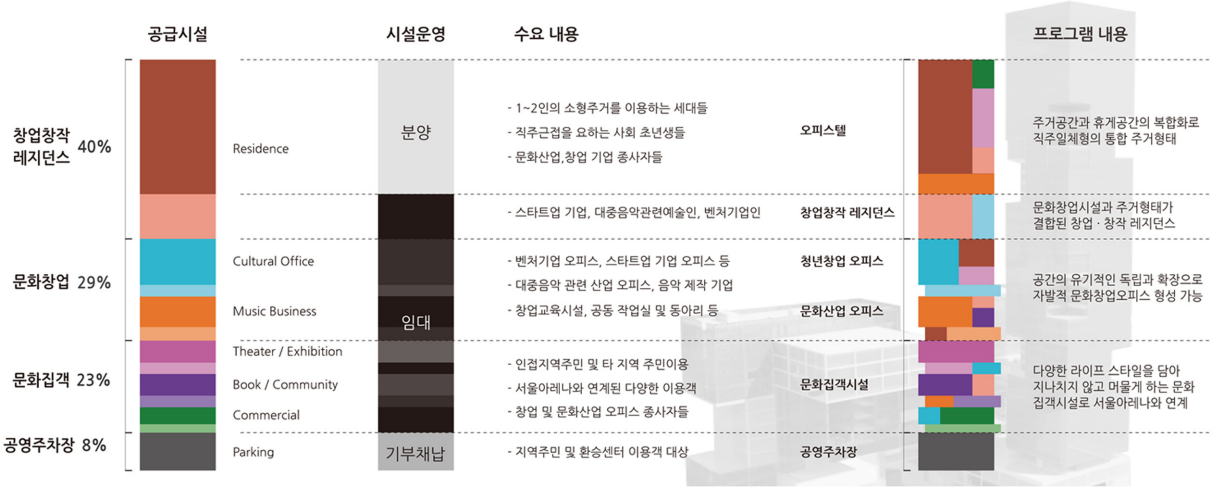


Figure 6. Program Zoning, Reorganization based on Activities.

The Phase of City Connection follows three-phased linkage plan. The First phase of the linkage plan aims to activate the pedestrian street and secure open axis to Jungnang Stream by proposing cultural community program for public pedestrians. The Second phase is opening up underground of Multi-transit center becoming a central hub-like park creating a large pedestrian flow from the site to the Arena. The final phase is building a circulating transportation loop linking the project and the surrounds promoting balanced revitalization of the entire Cultural Industrial complex.

The project increase accessibility by separating vehicular route from the pedestrians providing borderless city circulation. Vehicular bypass is planned at underground to make the ground level car-free street. Also, new pedestrian plaza reconnects and activates workshop streets at under-developed surrounding commercial areas in the South. Lastly, the regeneration of the elevated landscaped railway

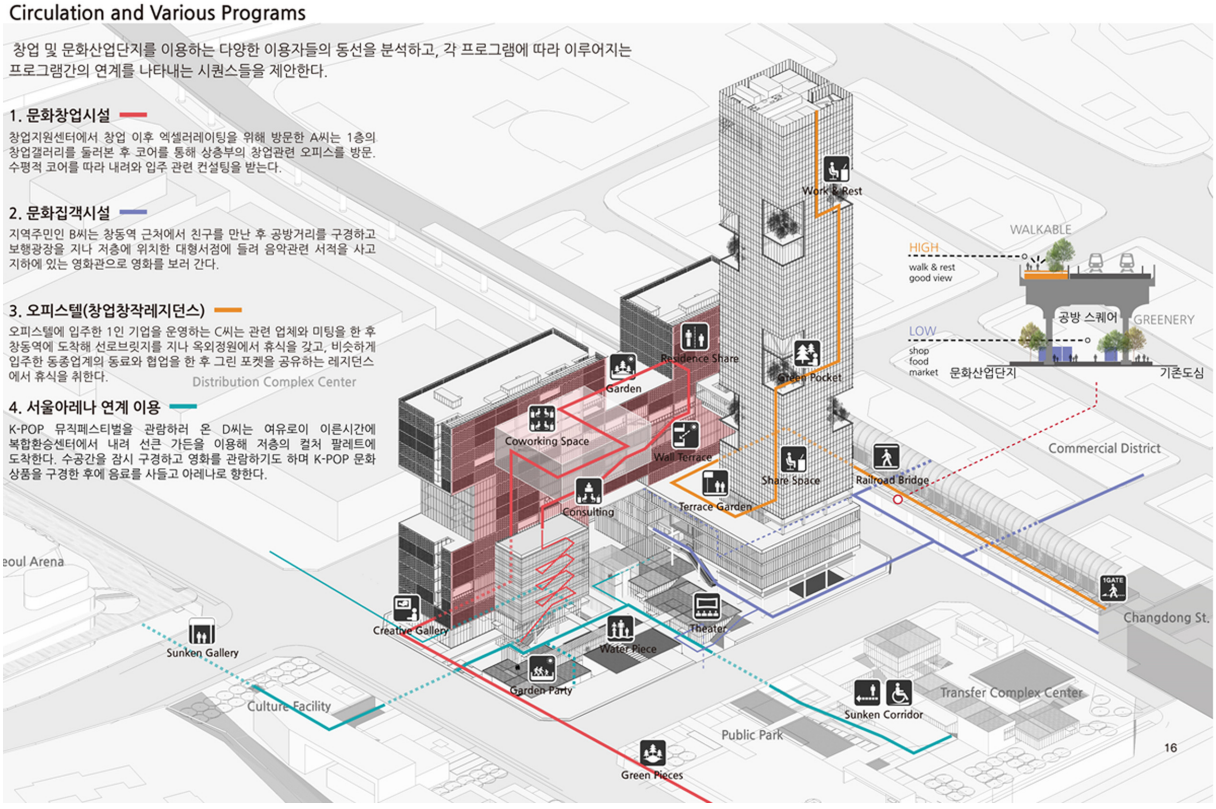


Figure 7. Program Sequence.



Figure 8. Poster: Inception the movie.

path will increase accessibility to the project securing green axis to the Stream. Concept of building master plan is to grand easy access to the site from every direction. In particular, the four Green Pieces filter visitors to the Vertical Platform.

3. Program Analysis

Required programs were studied and new way of zoning is suggested for the project. New start-up ecosystem was intended by reorganizing programs relevant to main stream lifestyle circulation-orientation from conventional function based program zoning. The project is designed for the Digital Nomads who work and reside in the all-in-one space. It breaks the boundary between work, reside and time. And this idea became a new normal in post pandemic era.

While function of neighborhood Northeastern Startup Center is incubating idea, Changdong· Sanggye Start-up and Cultural Industrial Complex ("Project") serves as an accelerating space of integrating start-ups, education and exhibitions. First, necessary spaces for start-ups, education and exhibition programs were identified and they were allocated along with the main circulation path based on the study of lifestyle of each program creating a start-up cultural eco-system with accidental encounters and voluntary synergy out of surprises. Also floors plans are based on modular structure for flexibility of diverse lifestyle changes in the future.

Behaviors of each programmed facility were studied and along with main circulation sequences, shared spaces are planned to bring synergy of Conversion Platform with horizontal and vertical circulations.

4. Inception

In the movie Inception, 2010, directed by Christopher Nolan, the Architect builds a new world by removing gravity, lifting the ground of the city and turning them into walls sand sky. We borrowed similar ideas to realize and optimize given 800% of floor area ratio of the site.

Vertical Platform is a key concept, which formed the mass design. First, a podium structure accessible from all directions is formed. Then the mass is raised up horizontally to create Urban Void on the surface and elevation. Finally, necessary start-up spaces are extruded horizontally from the face of the mass.

The definition of Open Wall is based on continuous open shared space along in accelerated circulations path. The linkage of these community spaces induces encounters between programs and creates new events. Horizontal Core located inside the Open Wall acts as a functional circulation inside the building. It also forms Vertical Platform central axis in section plugging box-like space. Façade is covered with an eco-friendly system controlling West side solar radiation quantity.

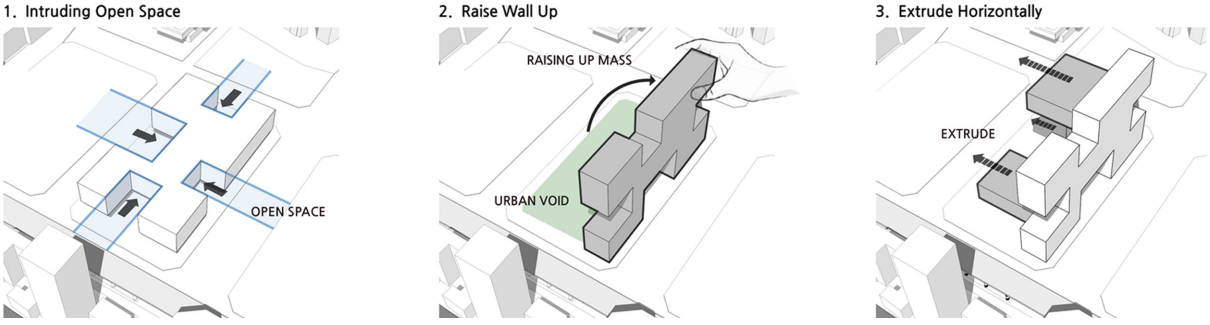


Figure 9. Vertical Platform.

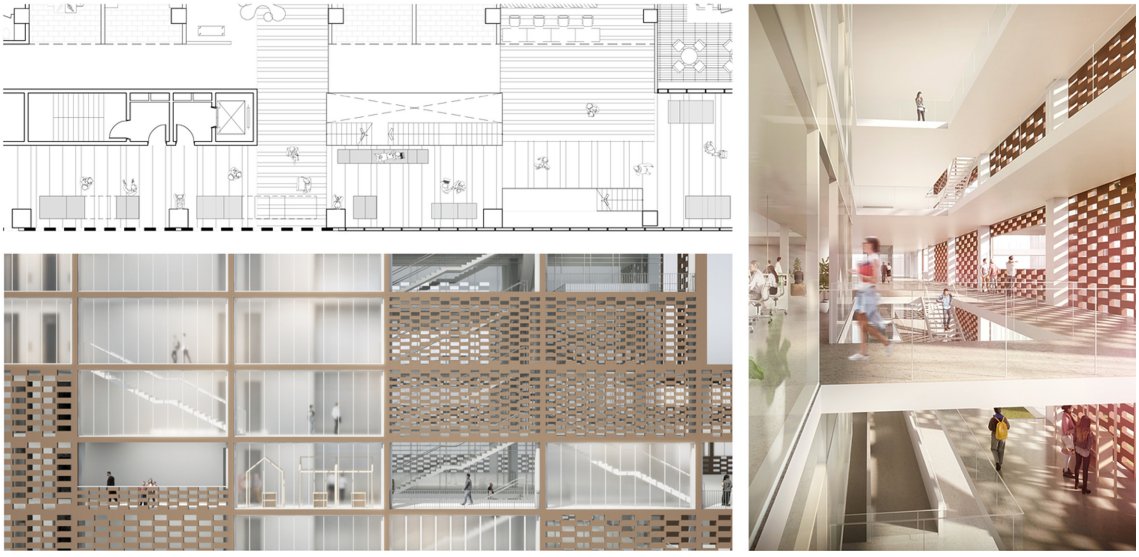


Figure 10. Open Wall and Horizontal Core.

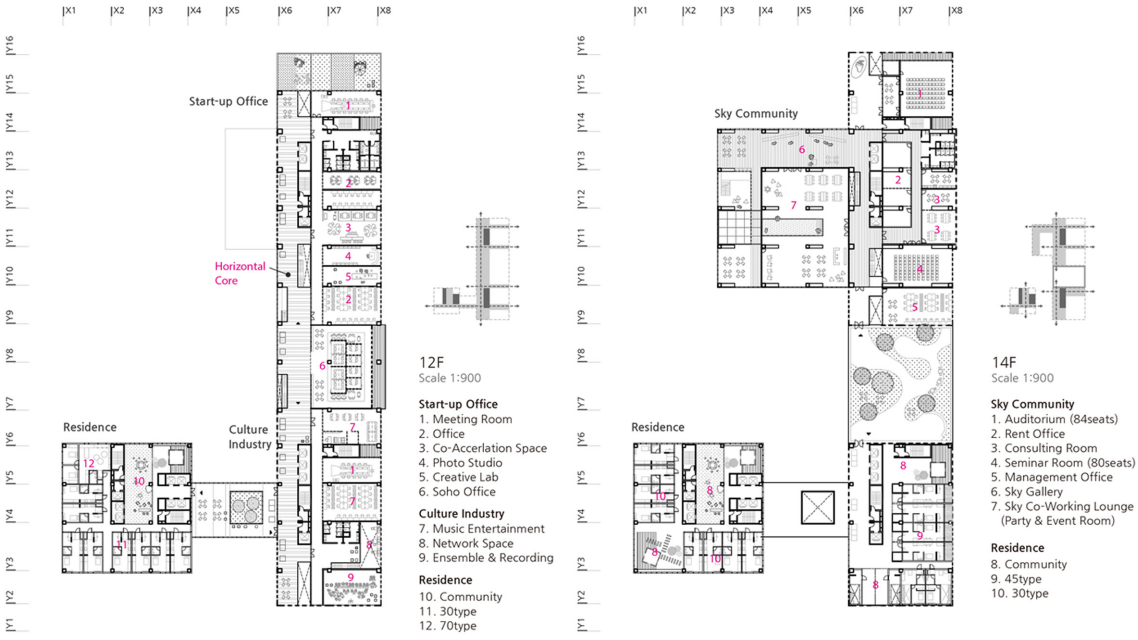


Figure 11. Plans 12F & 14F: Open Spaces Penetrate and Continue through Wall.

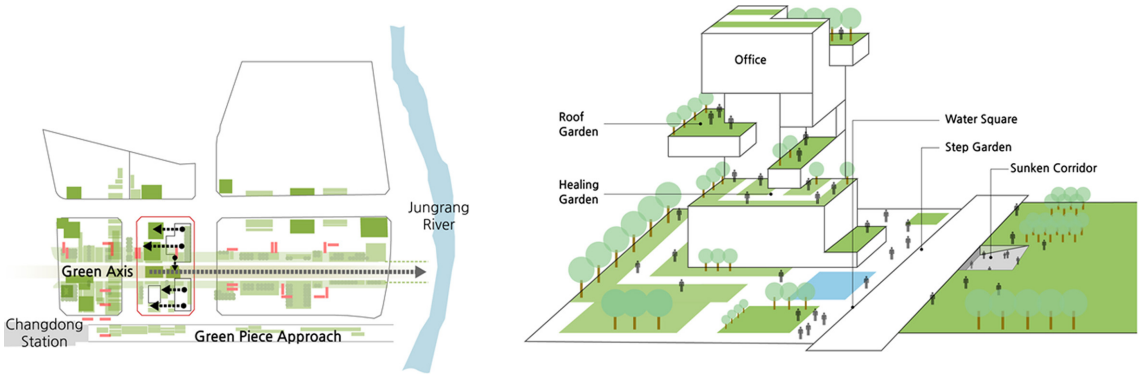


Figure 12. Green Pieces.



Figure 13. Culture Palette.

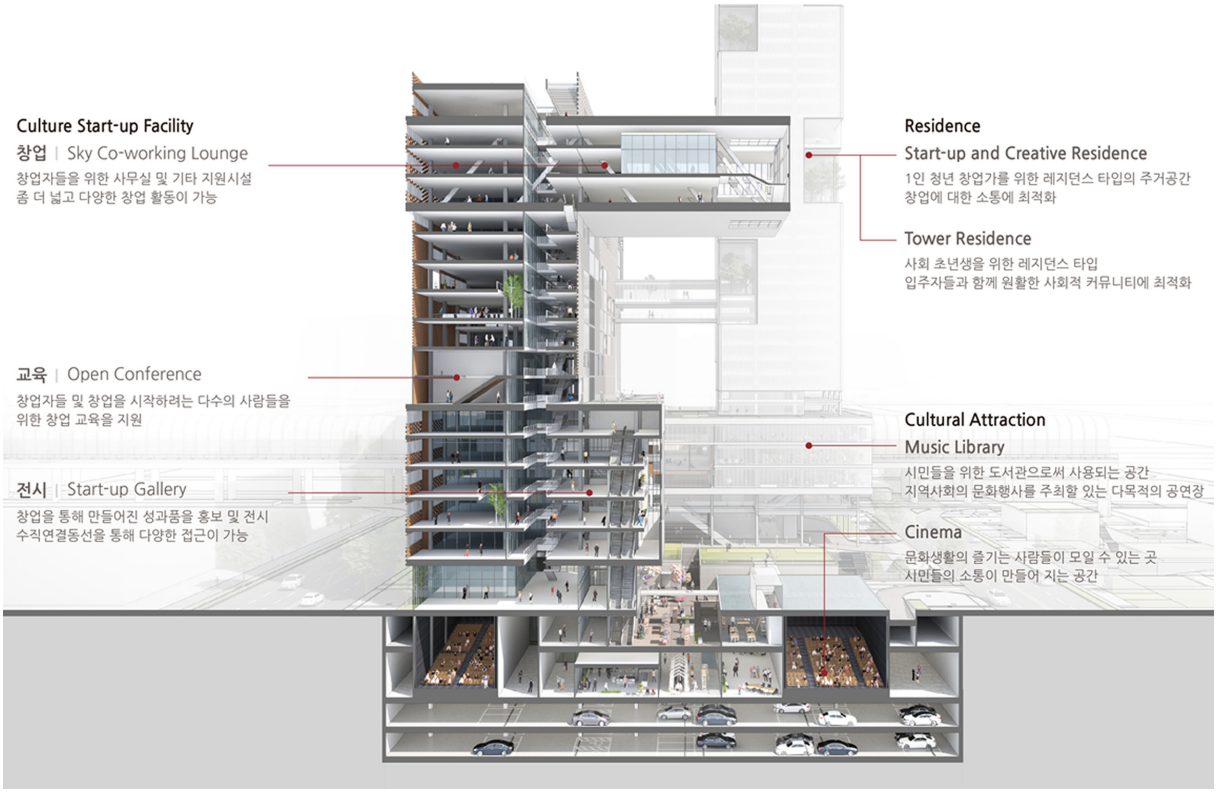


Figure 14. Culture Start-up Ecosystem.

5. Green pieces and culture palette

Green Pieces aim comfortable, but intimate nature experience in the urban condition. Each programmed facility of the project is exposed to nature from at least one side at the part where mass is carved out. The facility is also connected to other public open spaces in parks, squares, and gardens created forming a whole green axis along Jungnang Stream.

The underground Sunken in the project is collaged with various cultural programs in a palette-shaped. Large central pedestrian space connects the Multi-transit Center and the Arena in the center of Sunken. Cluster of underground space creates new Ground Level, extending Open Space in multi directions and breaking boundaries between levels.

6. Digital nomad and network living

The project is designed to occupy Digital Nomads in studio room type. To meet new living paradigm of Nomads, residence tower provides open spaces and shared community lounges linking all floors.

Perspective section shows cultural attractions in underground. Open Wall is where Start-ups, education, and exhibitions take place around the horizontal core. Conversional Platform is composed of tower-type residences considering marketability and social community becoming its own sustainable start-up ecosystem.



Figure 15. Culture Start-up Ecosystem.



Figure 16. Front Perspective.

7. Urban Skyline

In the Changdong Sanggye Urban Regeneration Zone, covering a million square meters, the view from the ground level is from the eastern highway along Jungnang stream with the heaviest traffic volume. The Conversion Platform will act as a landmark with its unique appearance as well as being a regional symbol.

8. Structure

The key to the Structural Plan was rather simple. The mega-column using structure planned up to 8 basement floors and mega truss structure using them as support was rather simple hanging large scale cantilever system in structural numerical analysis. In addition, phased construction based on modular system was applied to secure economic feasibility of the structure.

9. Sustainability

The trend of sustainability has changed from architecture just being a shelter in the nature to optimized equipment performance then to passive system and to focus on

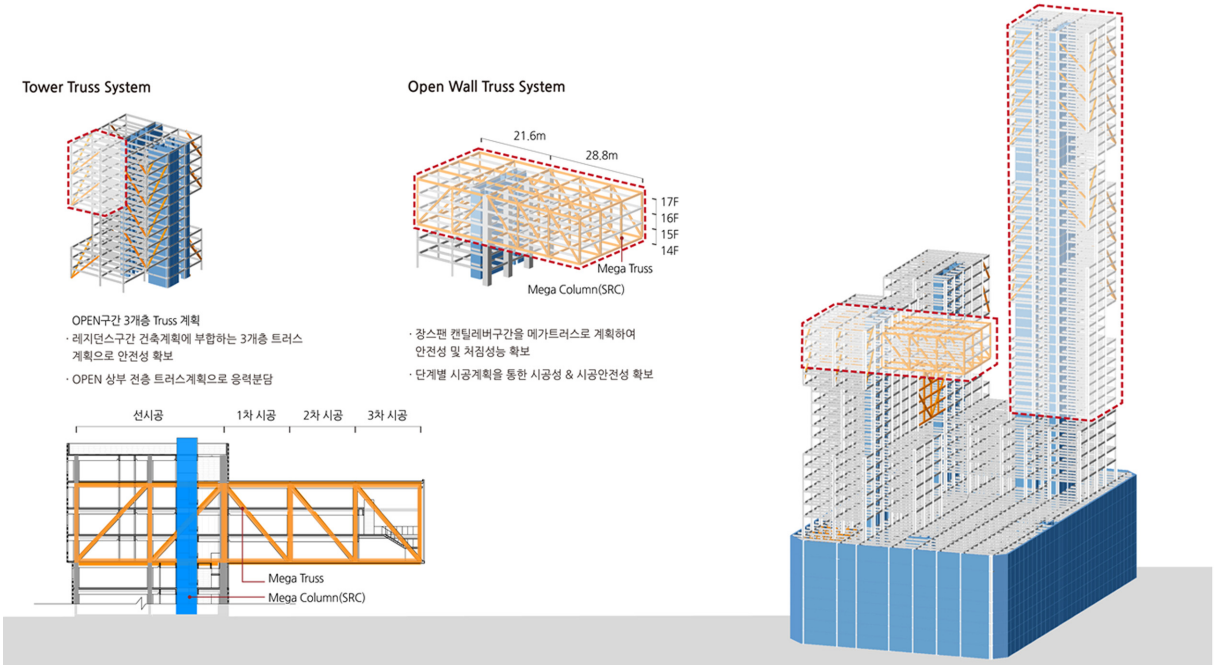


Figure 17. Structure System.

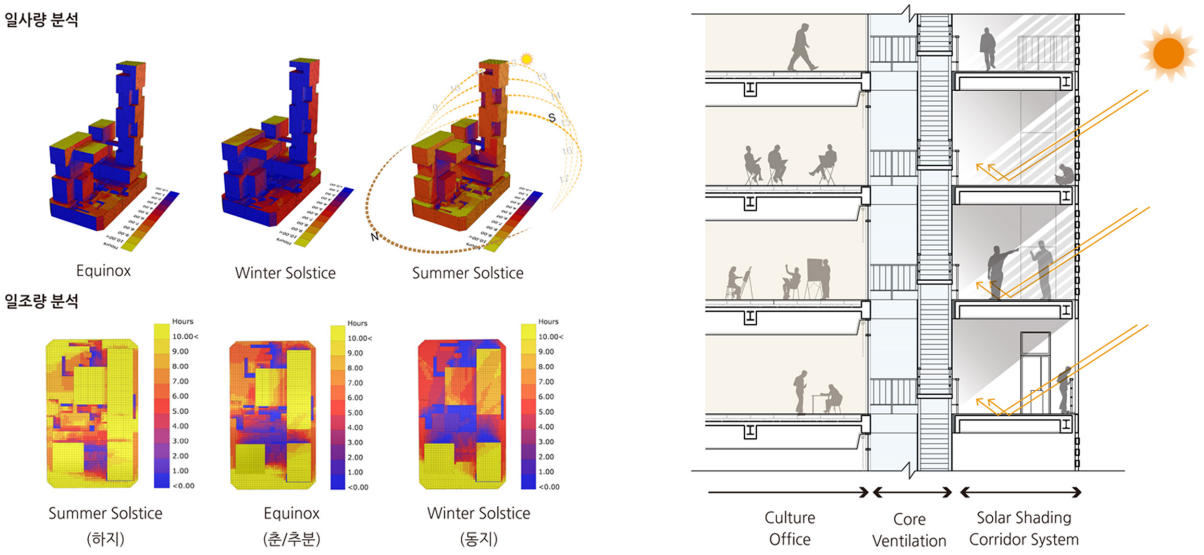


Figure 18. Daylighting.

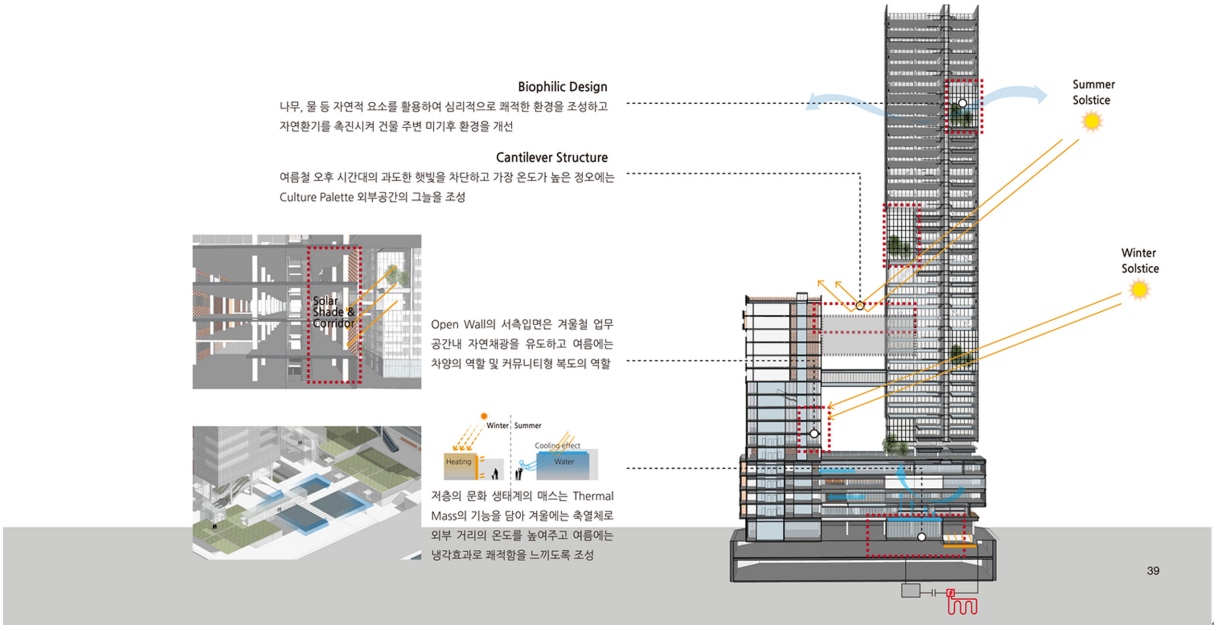


Figure 19. Thermal Comfort.

humans again. Therefore, Human-Friendly was defined as true sustainability, rather than just focusing on sustainable energy systems.

Three key approaches to Sustainability were applied to the project.

First of all, maximizing the daylight can reduce building operating cost and increase user productivity. Through solar radiation simulation, openings focused more on the north-west of the elevation were planned and the tower and the Open Wall were separated, providing some space in between.

For the second, Thermal Comfort at microclimate level was studied improving relationship between people and space to maximize work efficiency. Design elements such as solar corridor and thermal mass improve microclimate environment of the building. Also water ponds in Cultural Palette provide cooling effect in the summer.

The last part of the sustainability approach is Human-friendly Mindfulness considering important measure of health and well-being. The building provides psychological stability bringing in nature-friendly elements inside and outside the building with biophilic designs such as Green Pocket, Green Atrium and Green Palette.

10. Conclusion

In micro scale, project will provide new ecosystem for new young digital nomads of startup companies. In macro scale, it will trigger the revitalization of the area for the common good. Conversion of vertical platform will bring new positive energy no matter what.