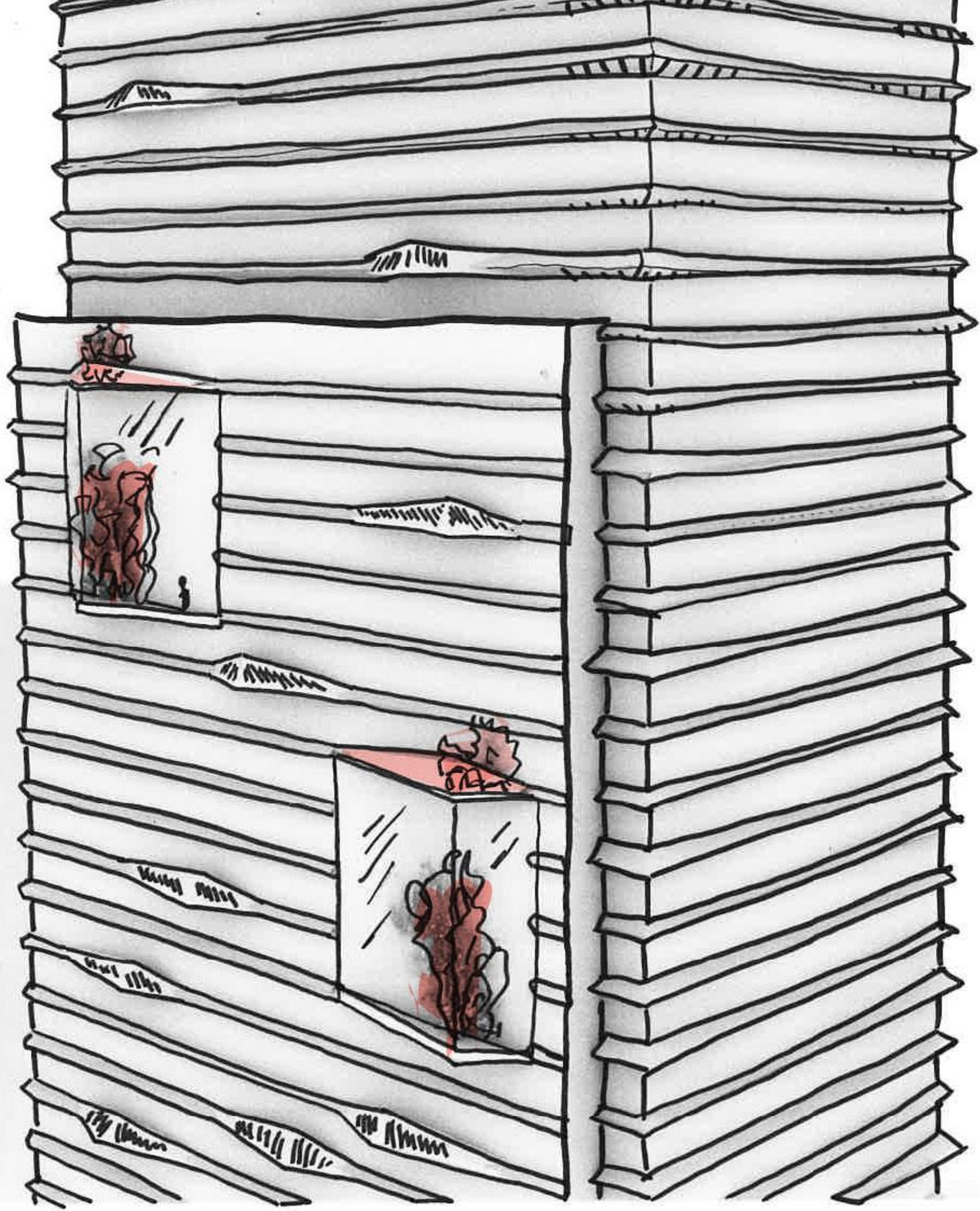


AFTERLIFE HK

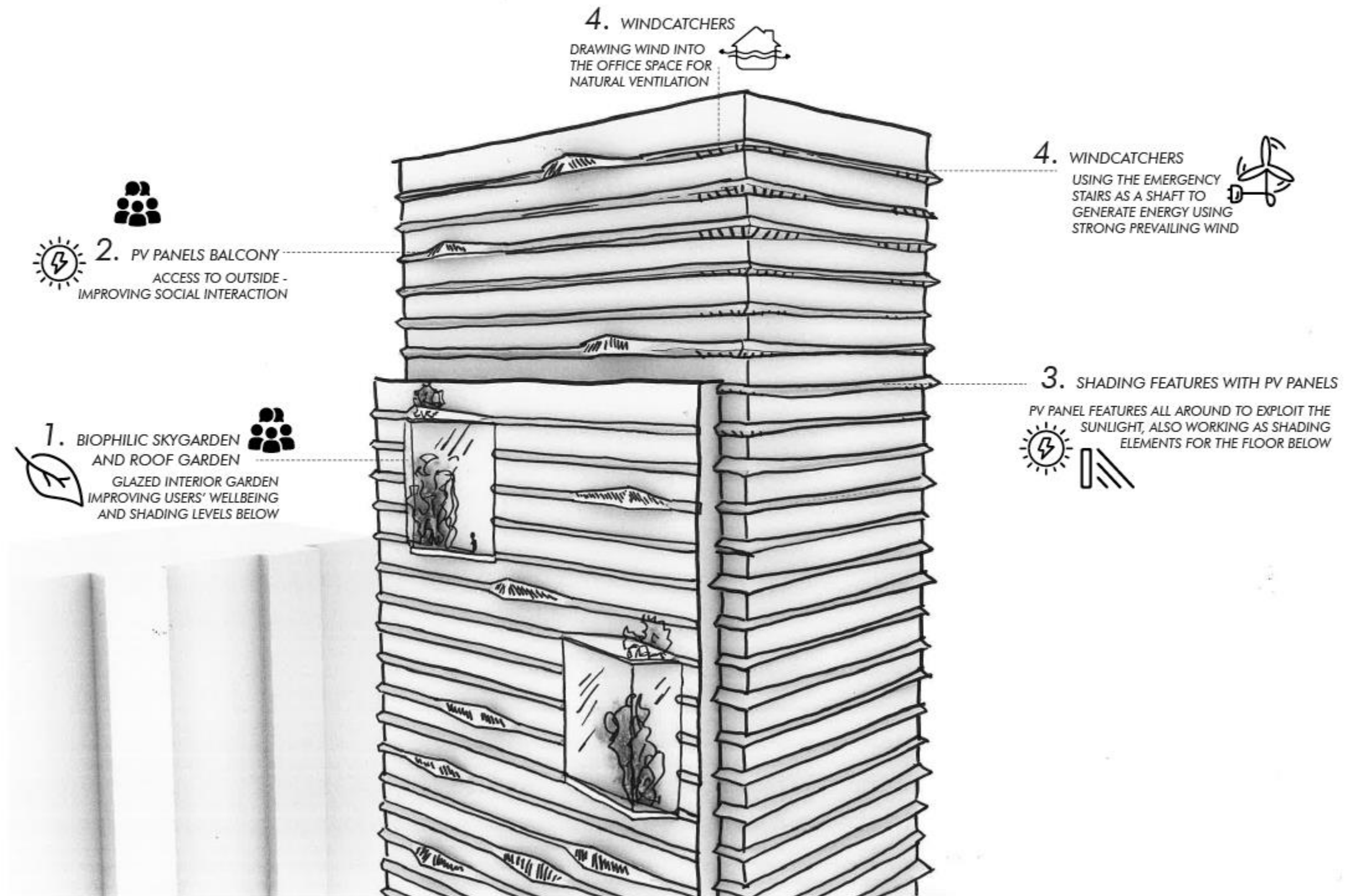
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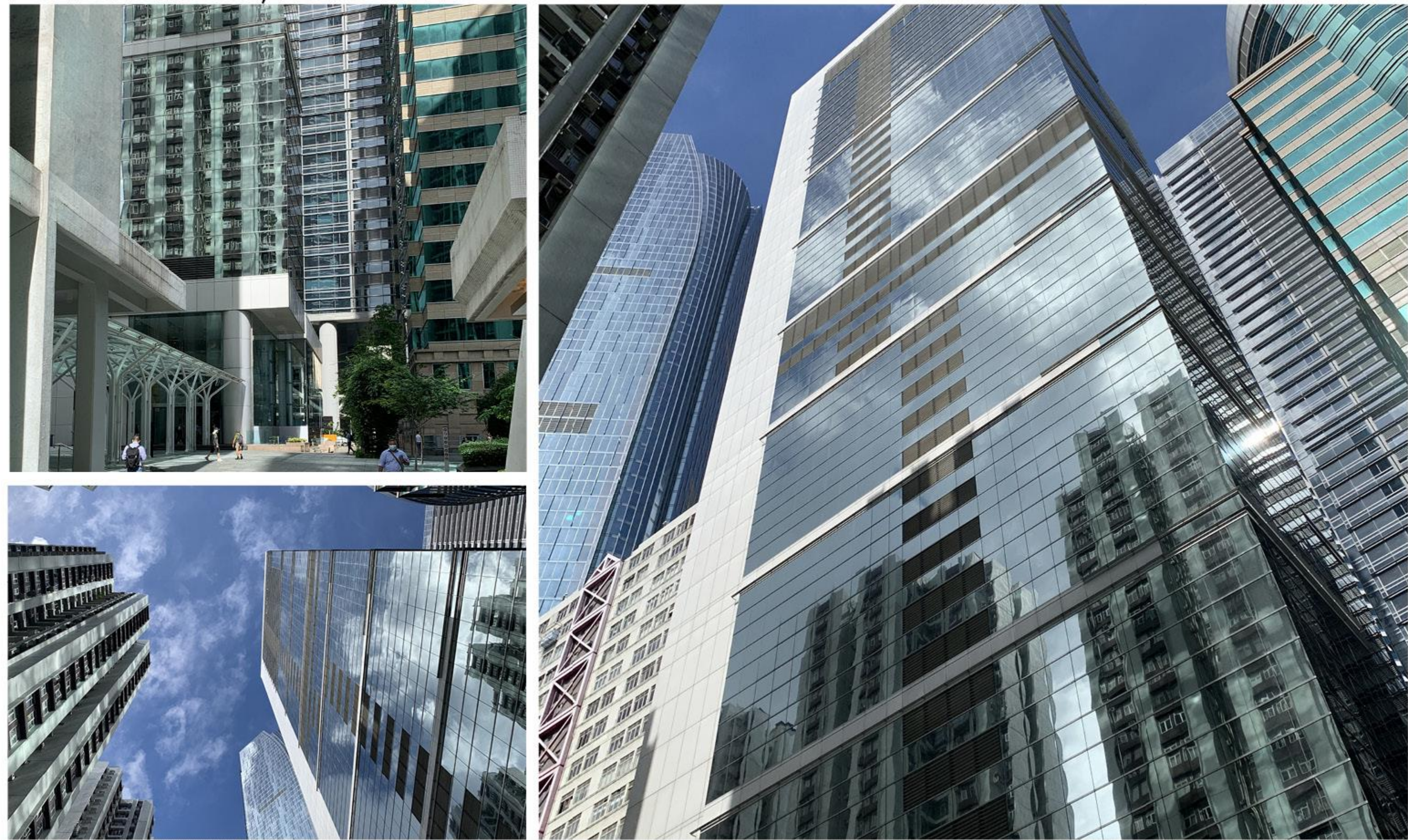
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THE CONCEPT

Afterlife HK is a concept that proposes to retrofit the façade of existing buildings to improve their environmental impact. It aims to promote the reuse of existing commercial building stock by preserving the original structure and retrofitting it with new façade elements relying on passive systems such as shading and natural ventilation, to improve internal conditions and energy use.

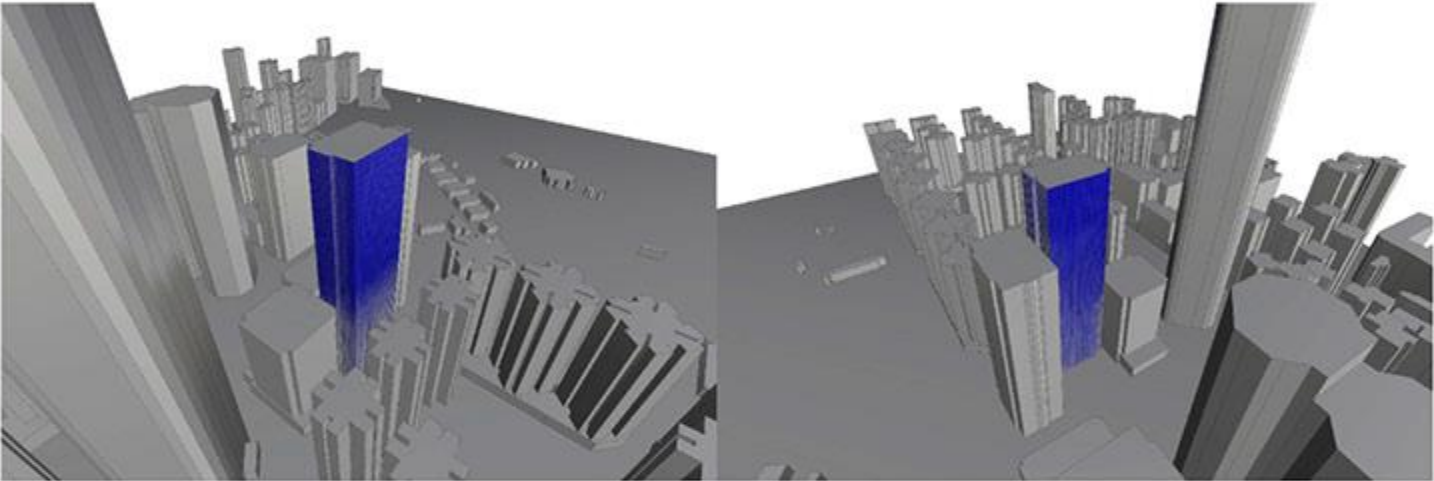


1 OXFORD HOUSE, HONG KONG

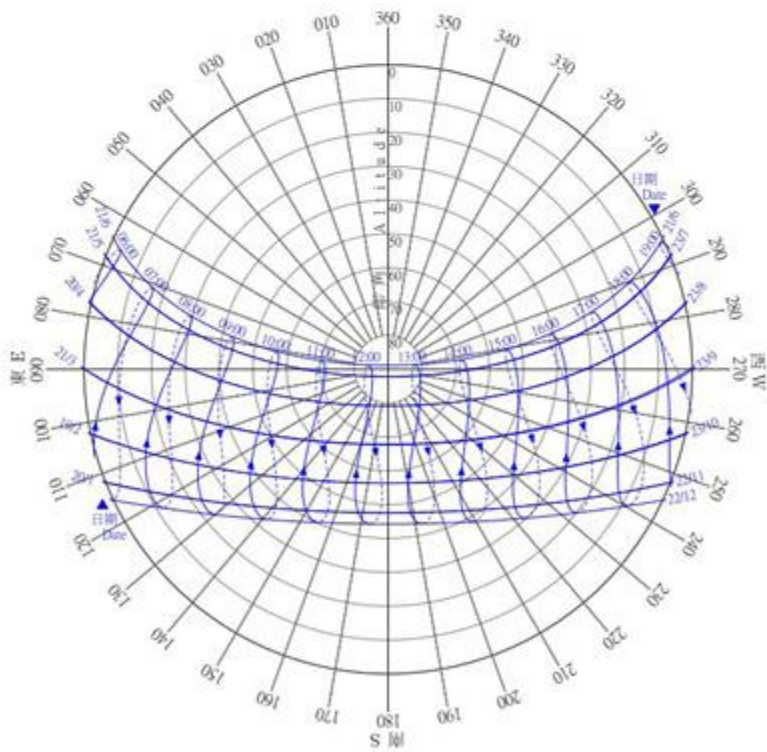
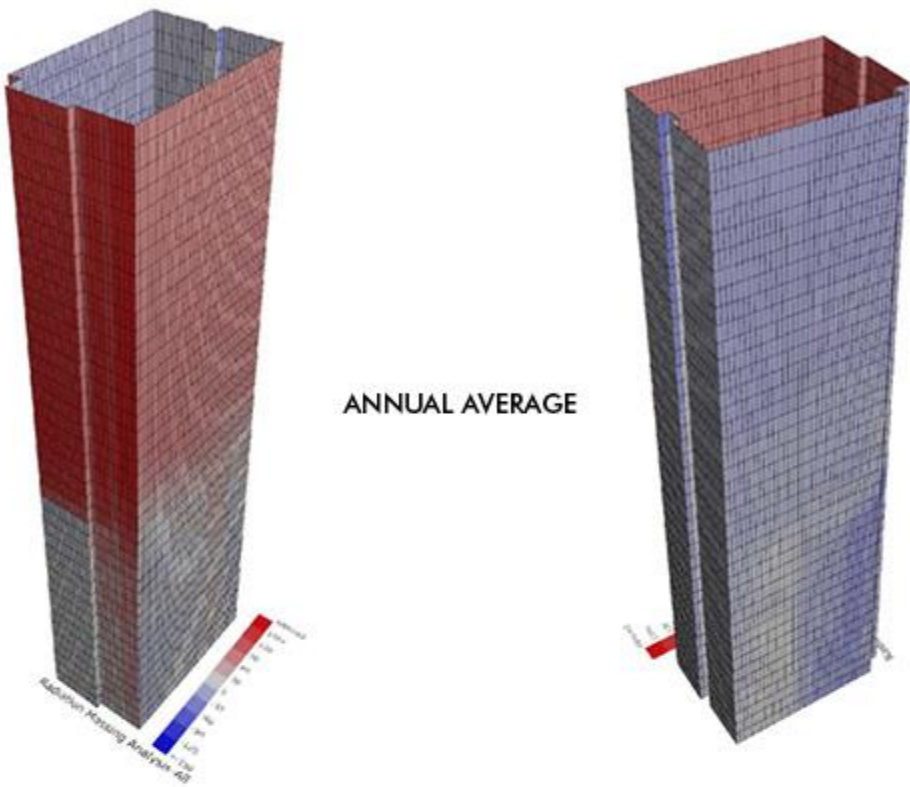
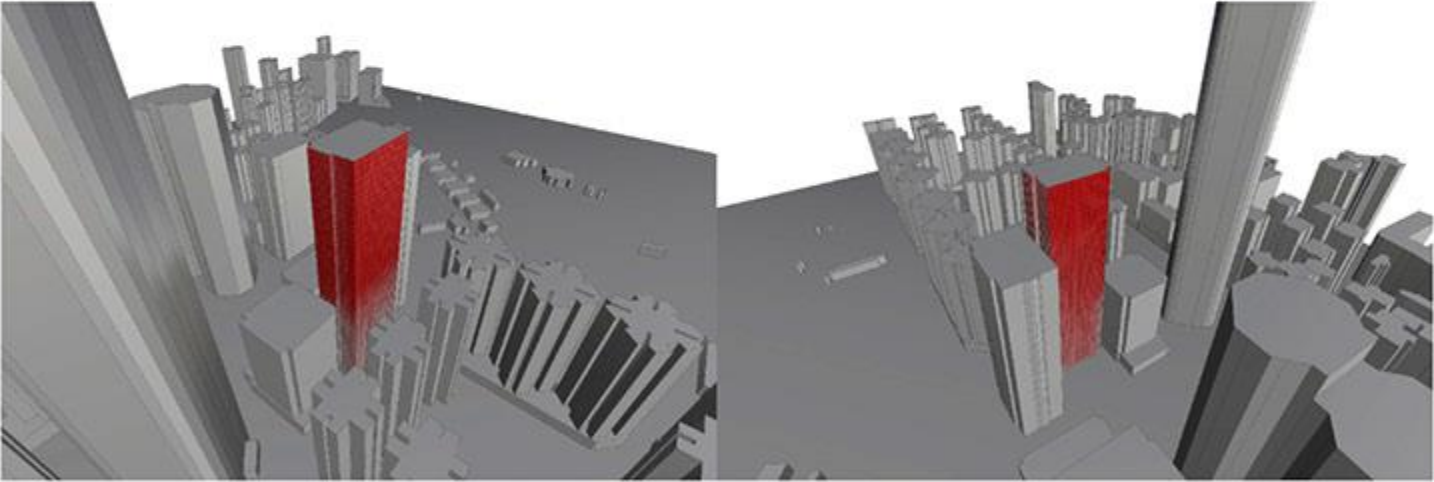


SUN ANALYSIS / SOLAR HEAT TRANSFER ANALYSIS

WINTER

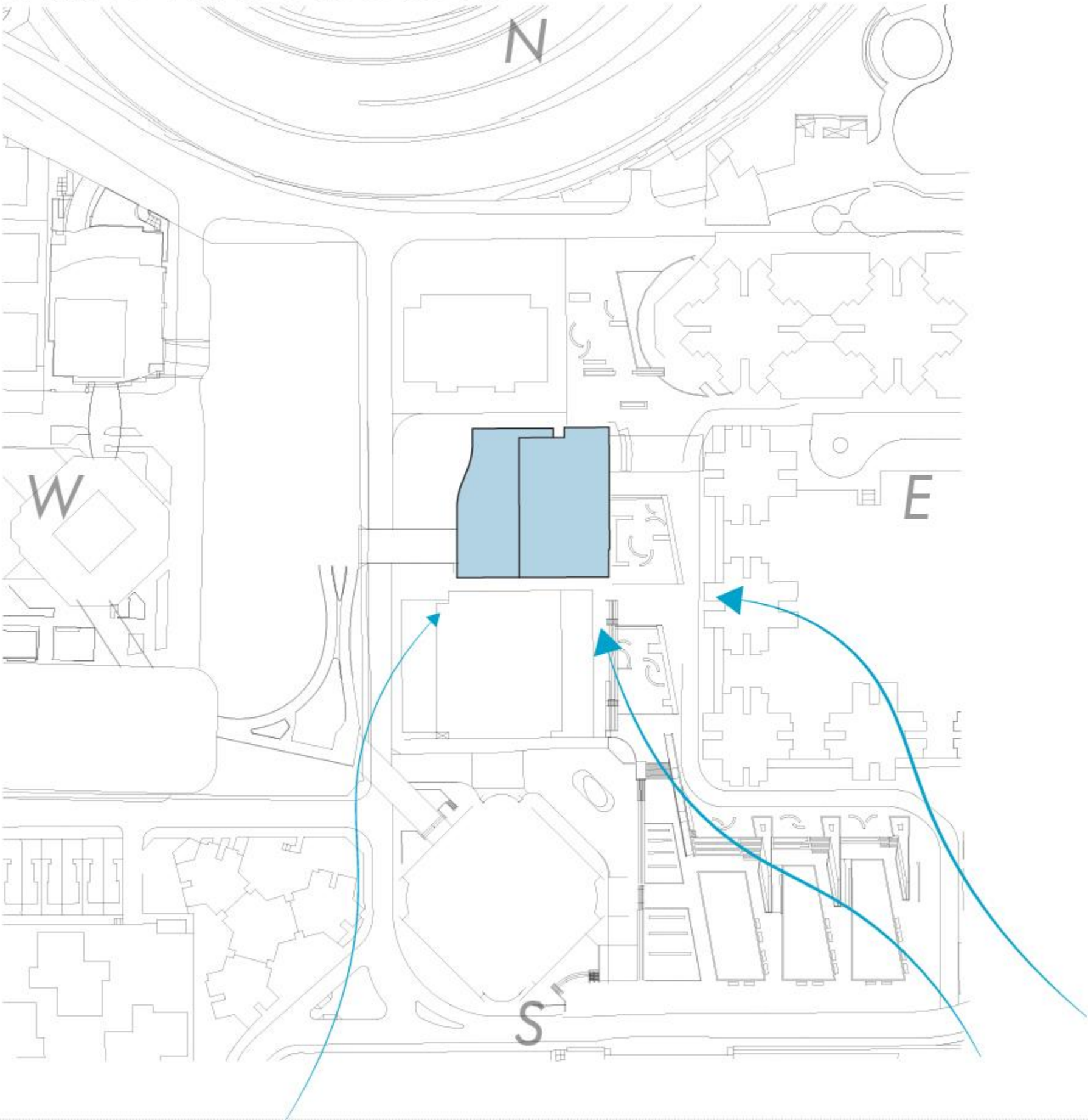


SUMMER



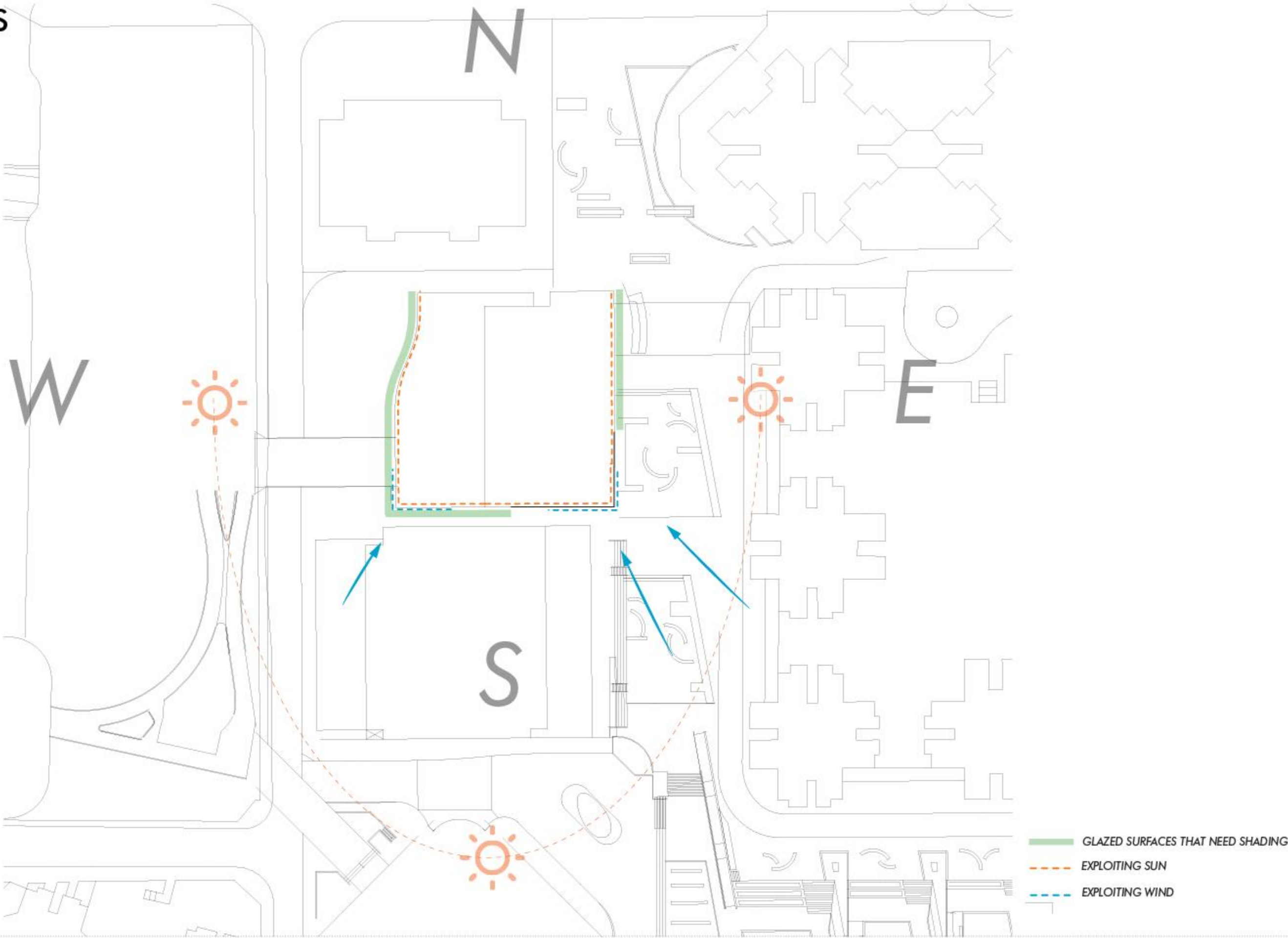
SUNPATH IN HONG KONG

PREVAILING WIND DIRECTIONS

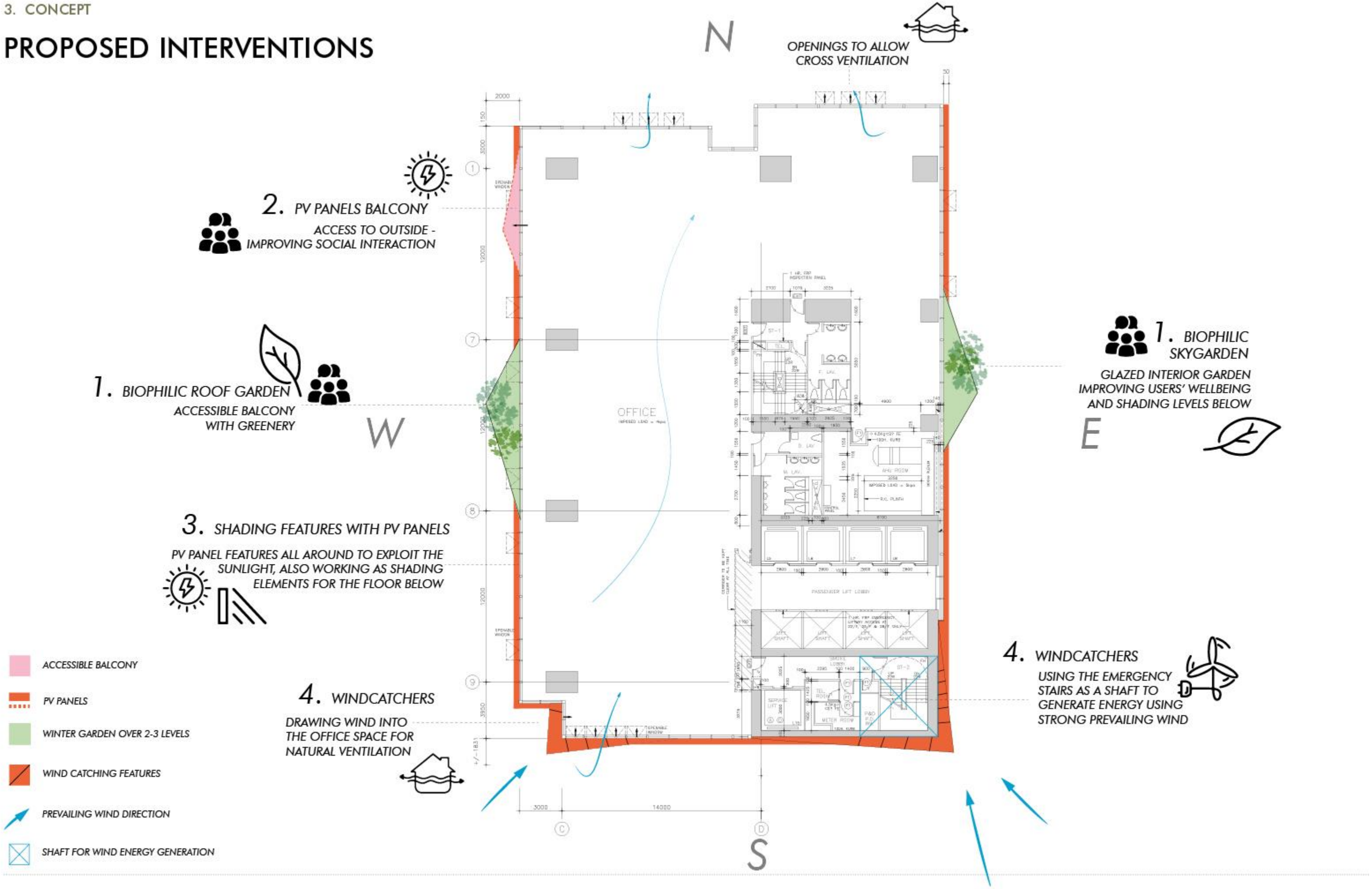


The prevailing winds reach the site from the south west and south east directions.

CONCLUSIONS

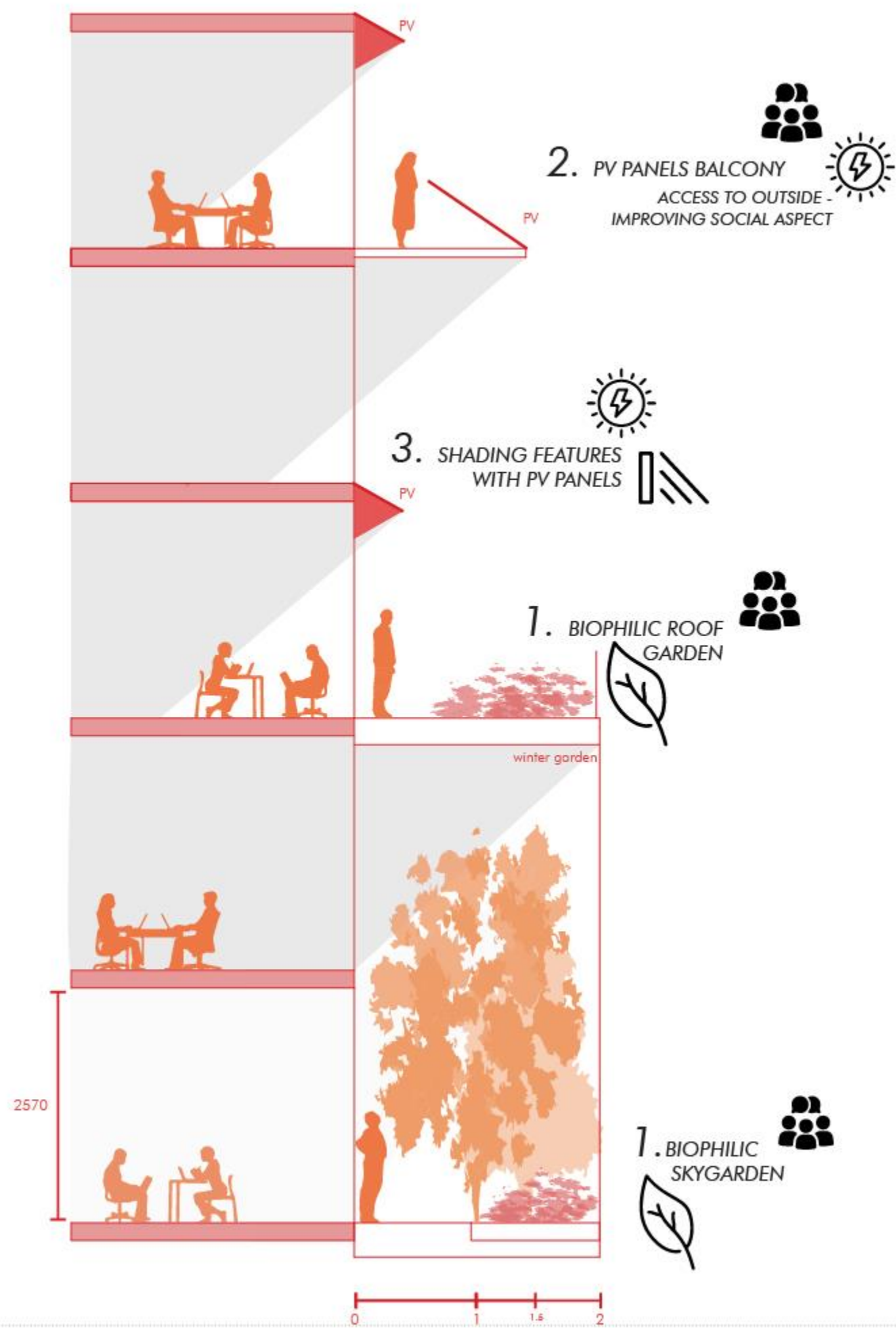


PROPOSED INTERVENTIONS



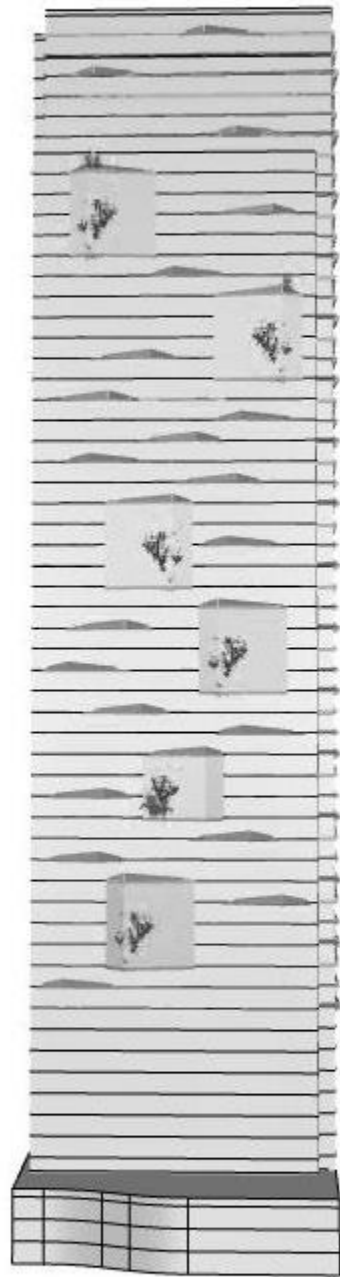
DIAGRAMMATIC SECTION

Our proposal concentrates on the potential of existing buildings to be improved by re-thinking the façade as an active environmental improvement tool.



ELEVATIONS

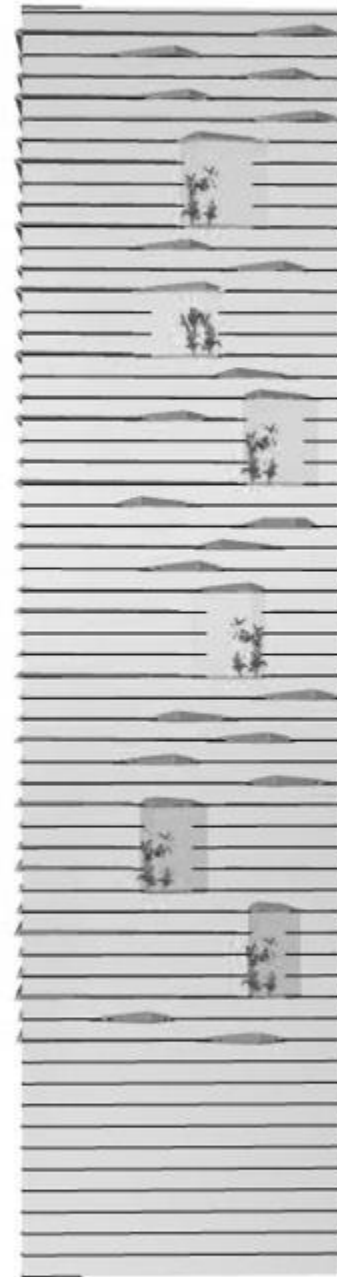
Passive solutions retrofitted as modules to the façade of the existing building



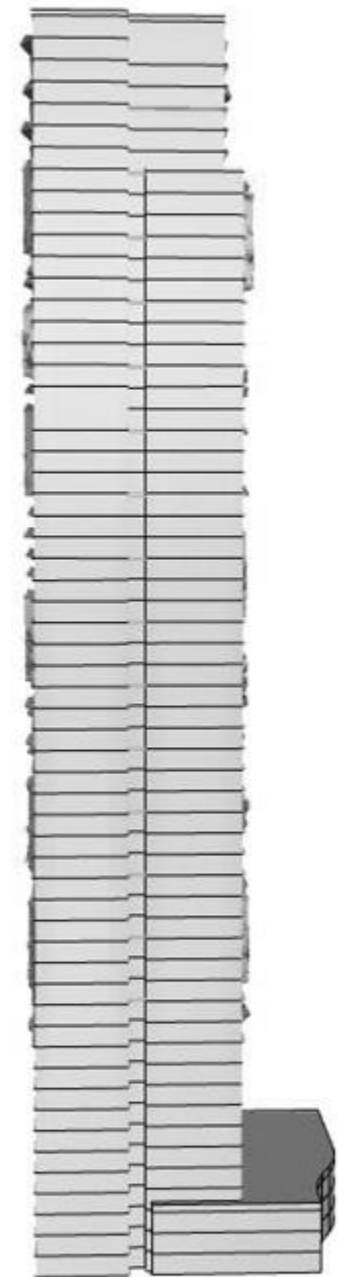
WEST FACADE



SOUTH FACADE



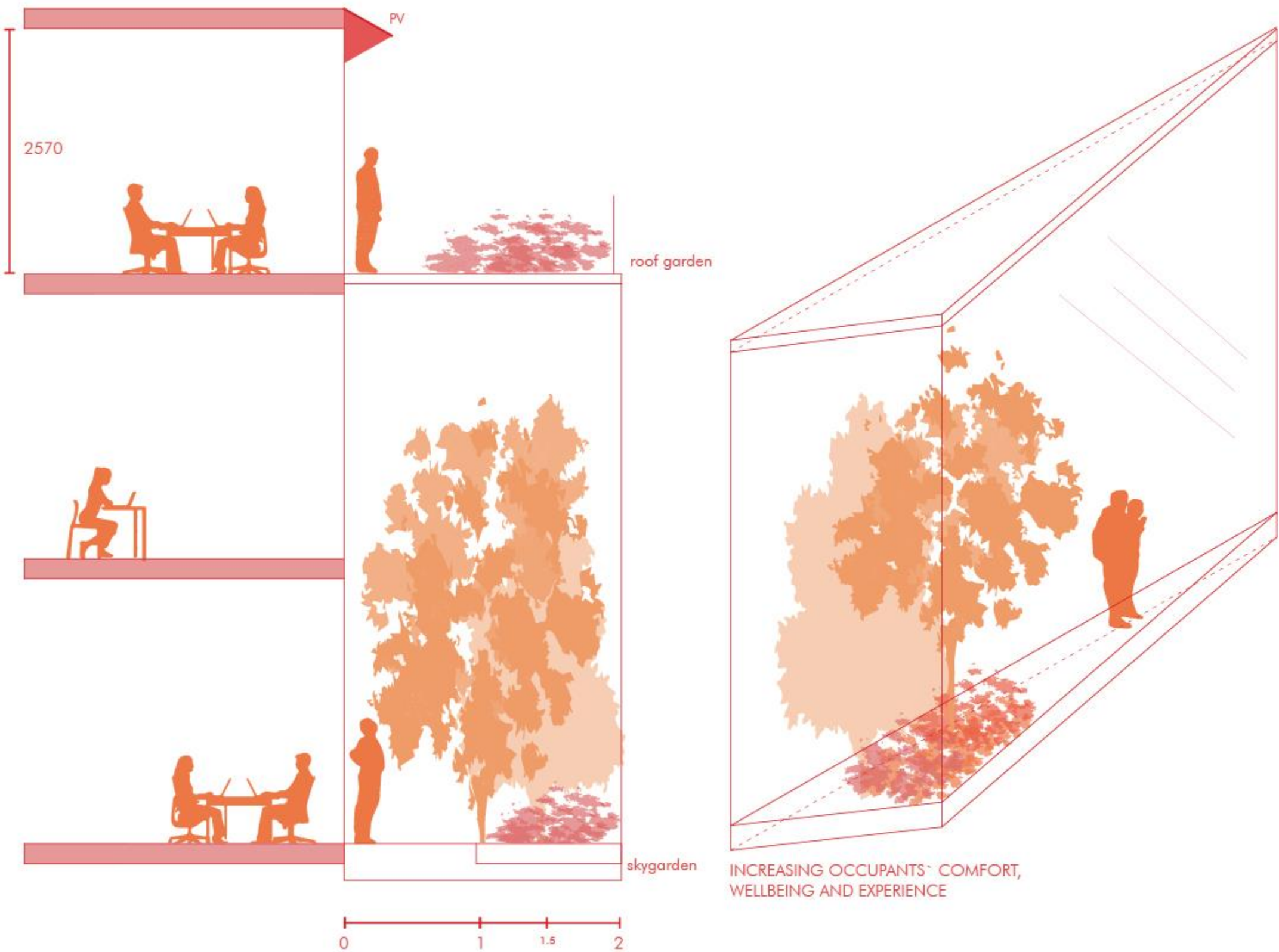
EAST FACADE



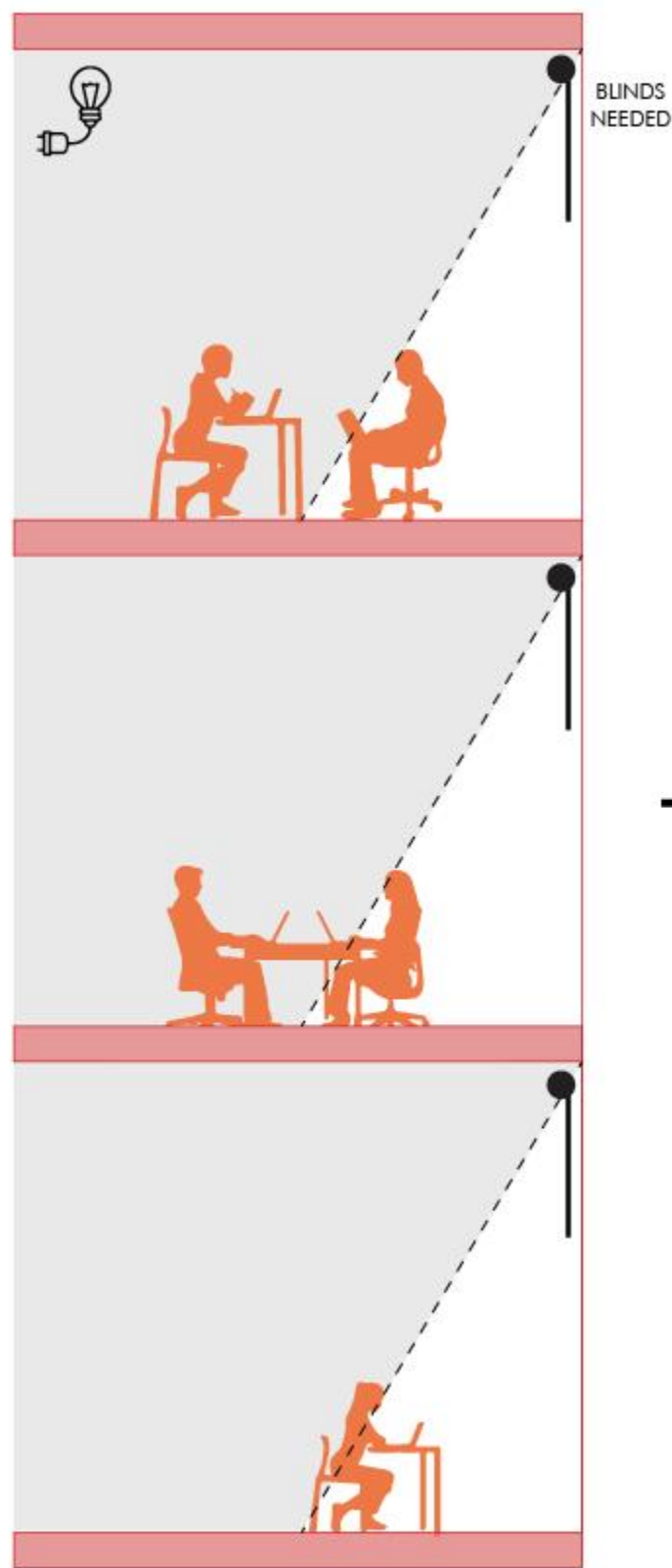
NORTH FACADE

1. BIOPHILIC SKYGARDEN AND ROOF

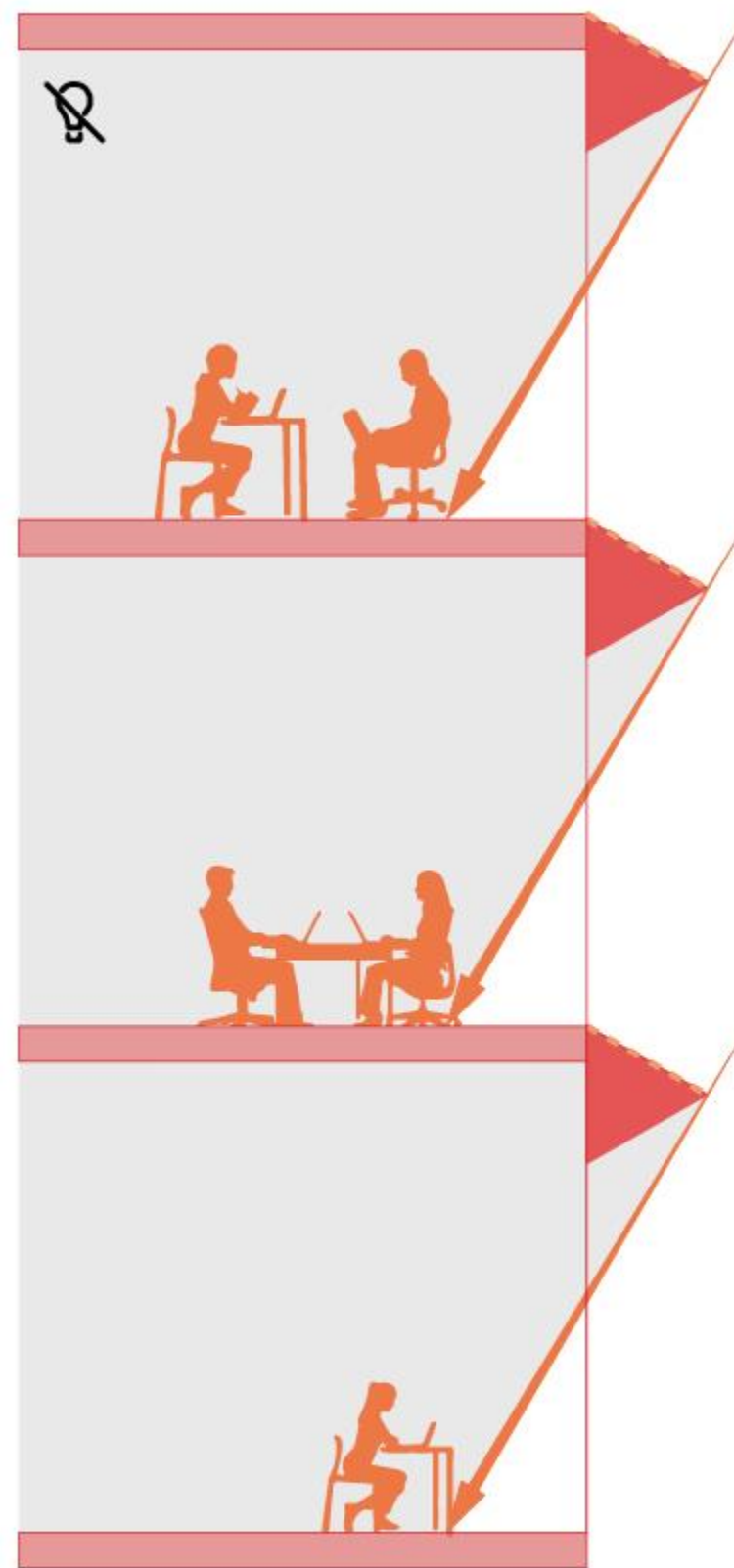
The use of vegetation in skygardens and green roofs will also provide external shading, landscaped communal amenity spaces and soak up carbon dioxide through photosynthesis.



3. SHADING FEATURES



CURRENT

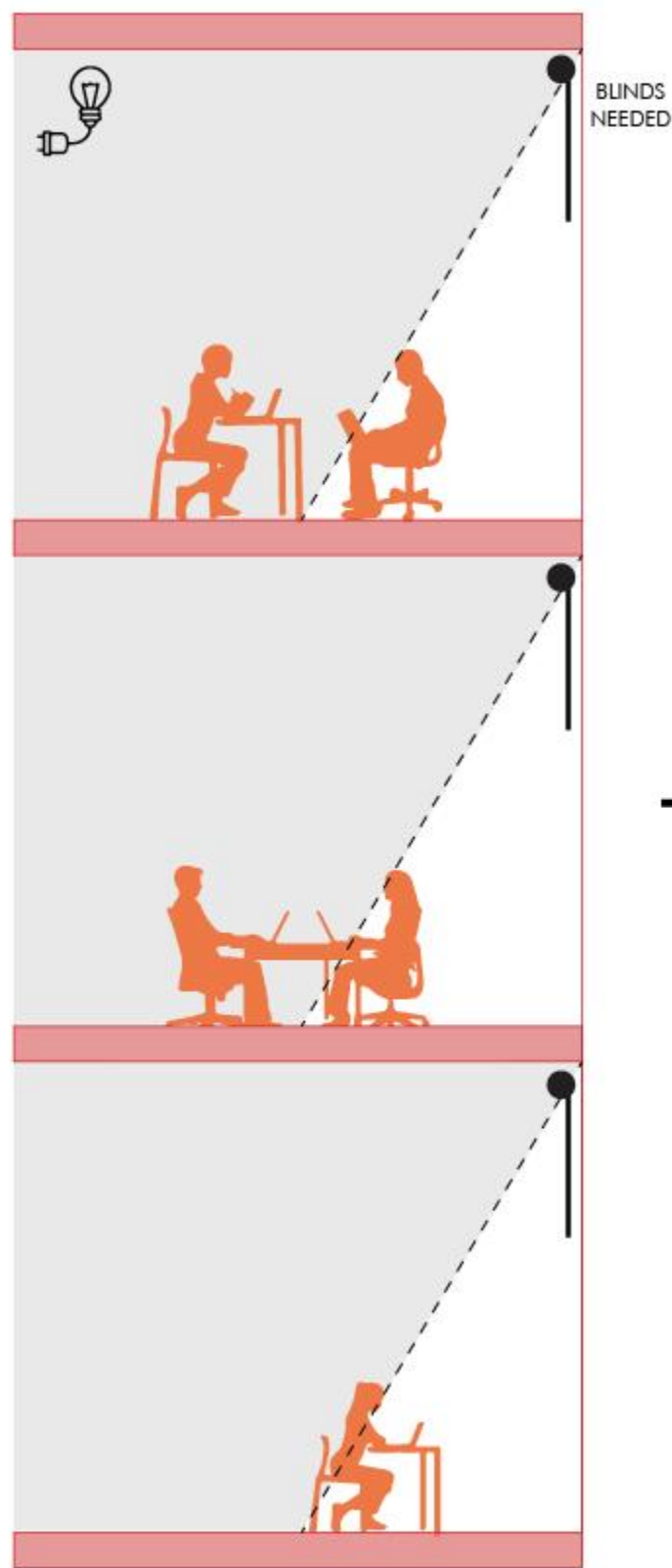


PROPOSAL

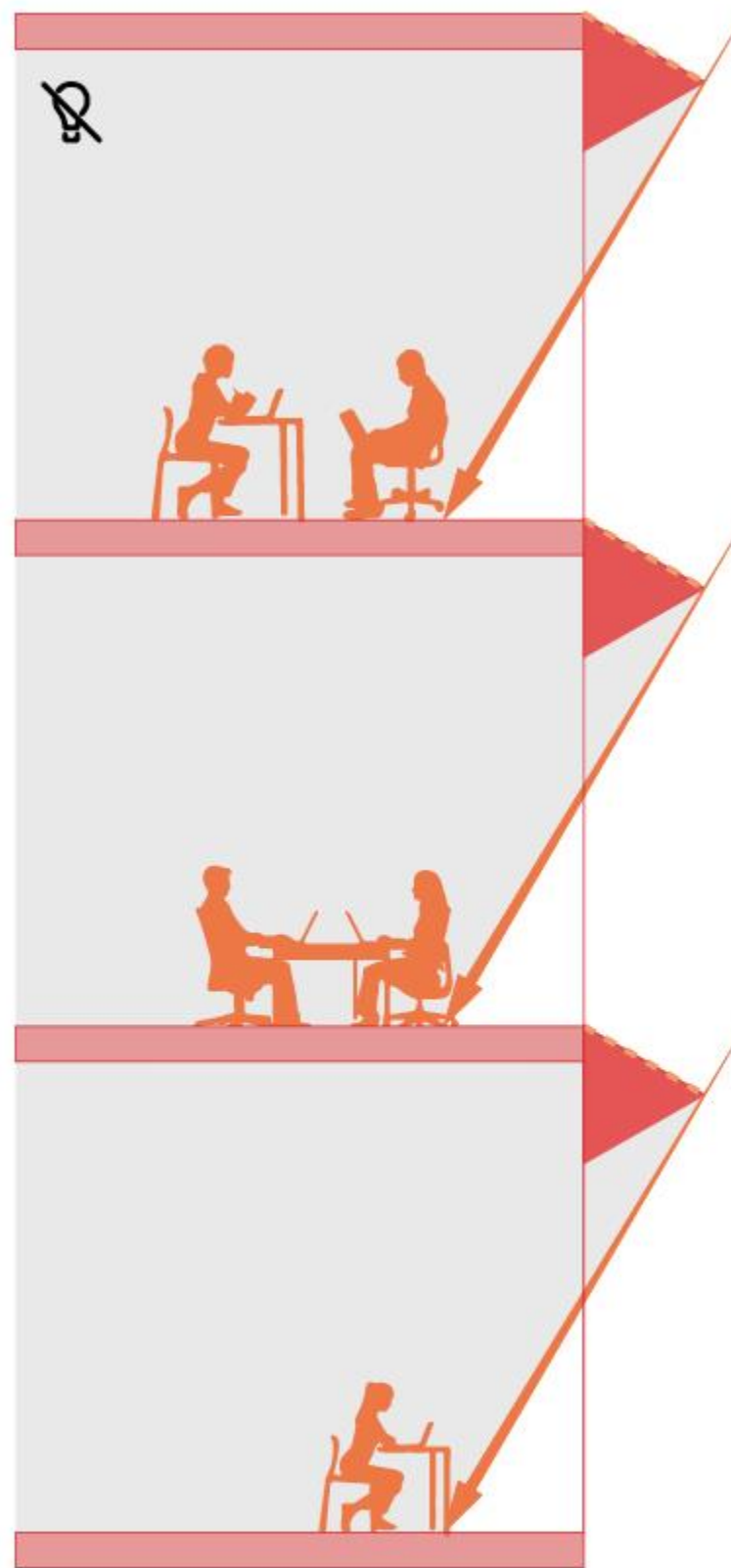
The introduction of shading features will prevent solar glare and the use of blinds, thus allowing more indirect light in and lowering the electricity consumptions.

Thermal comfort will be improved by the reduction of solar gains through the façade and the ability to open blinds more often, providing additional daylight access.

3. SHADING FEATURES



CURRENT

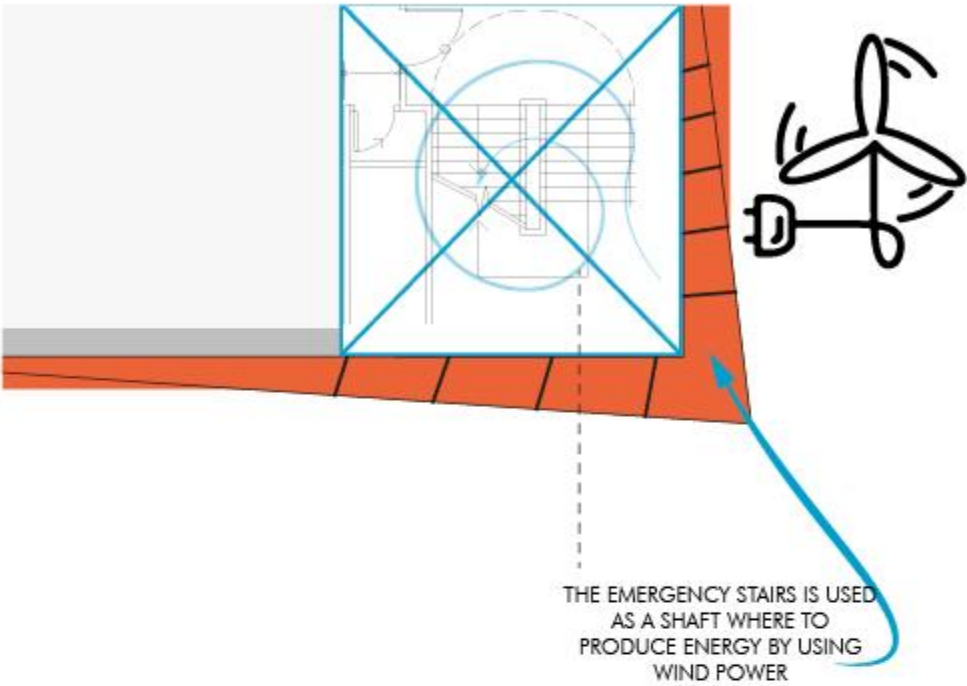


PROPOSAL

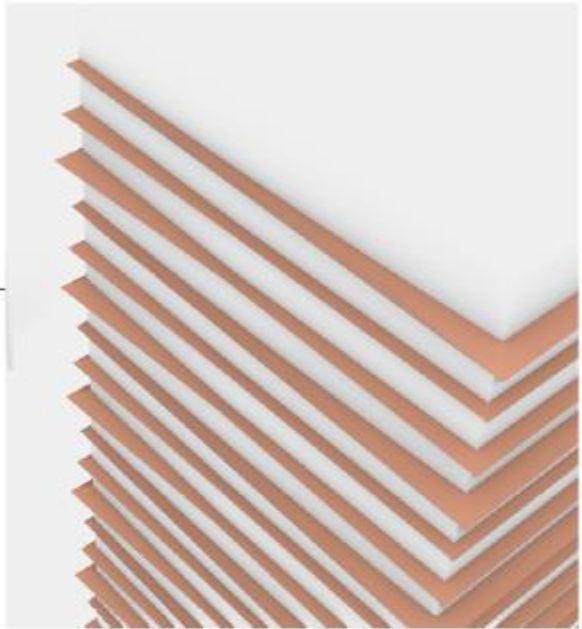
The introduction of shading features will prevent solar glare and the use of blinds, thus allowing more indirect light in and lowering the electricity consumptions.

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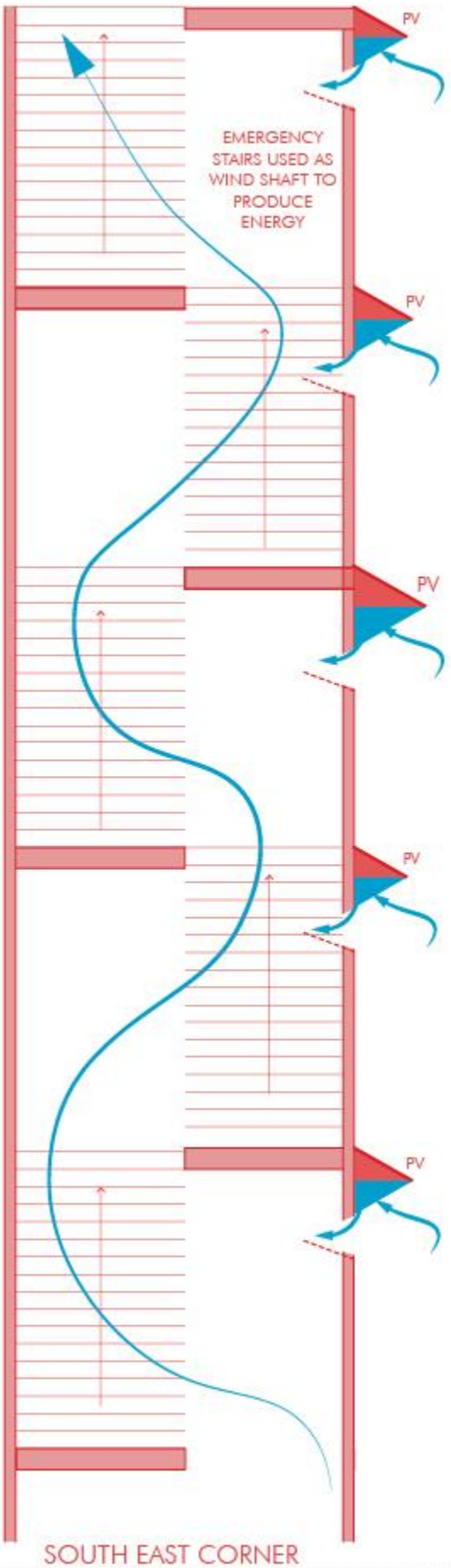
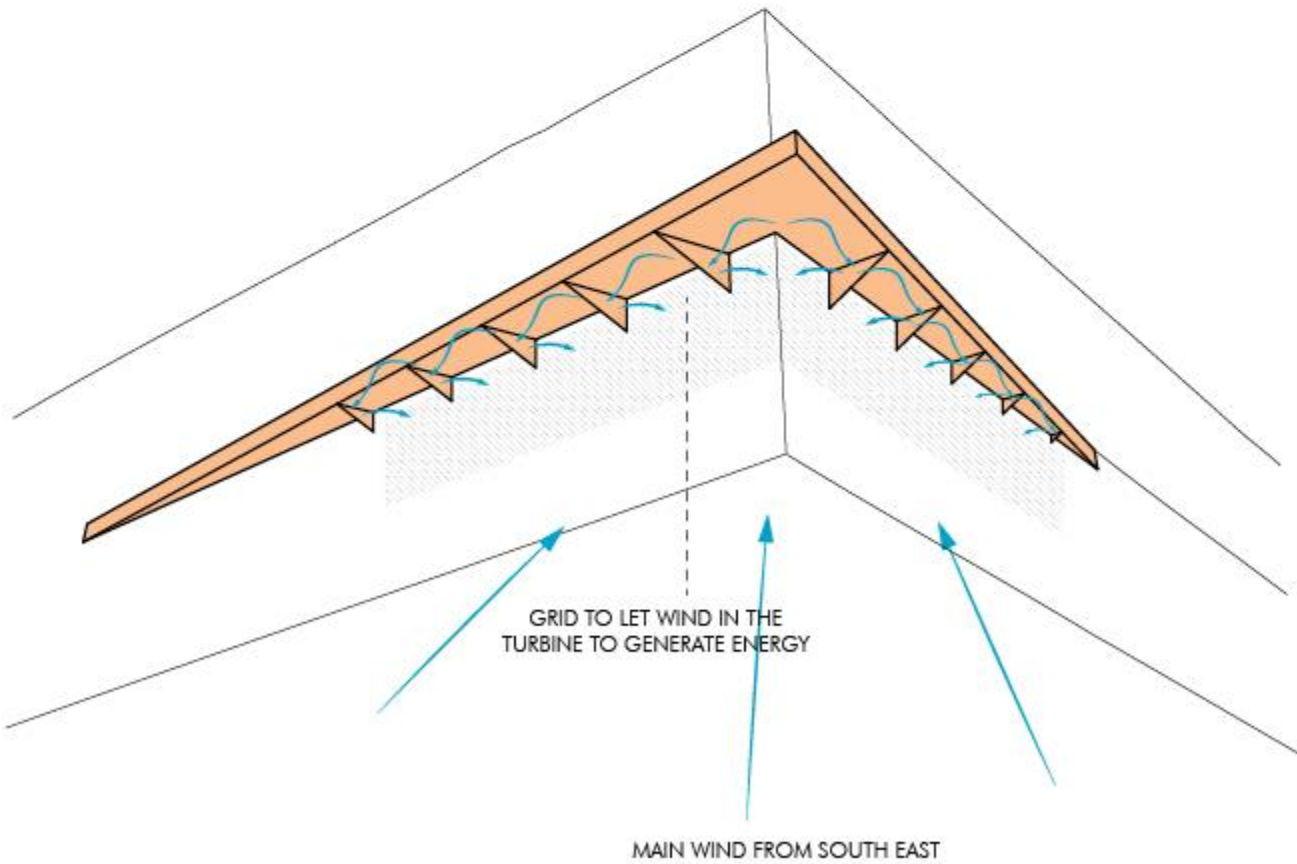
4. WIND CATCHERS - SOUTH EAST CORNER



PV PANELS AT 30° ANGLE



SOUTH EAST CORNER

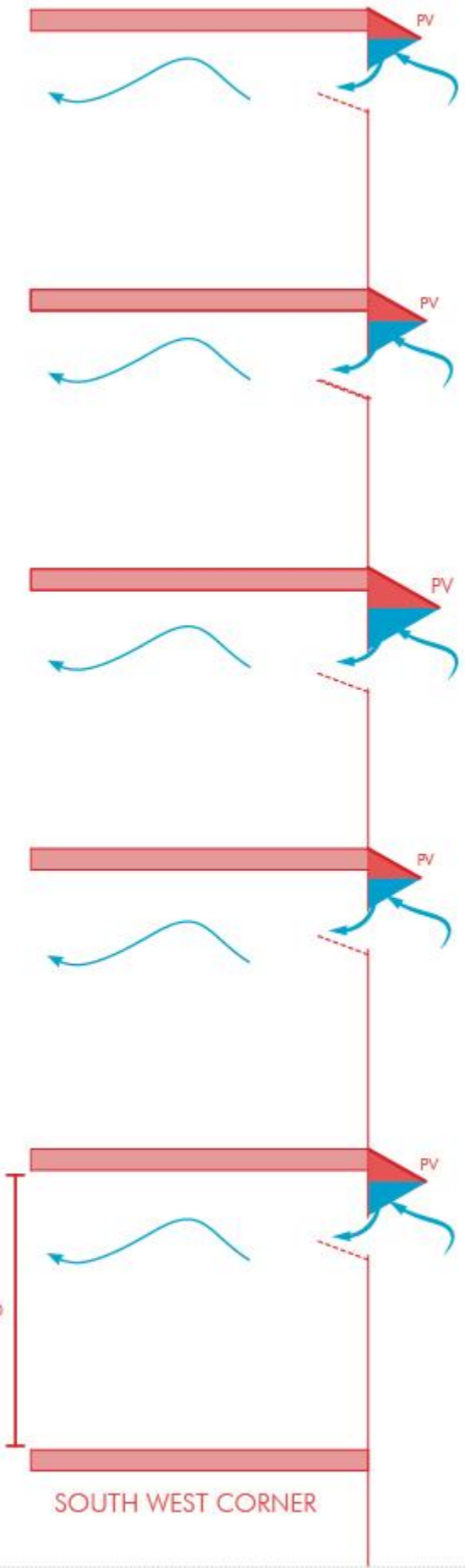
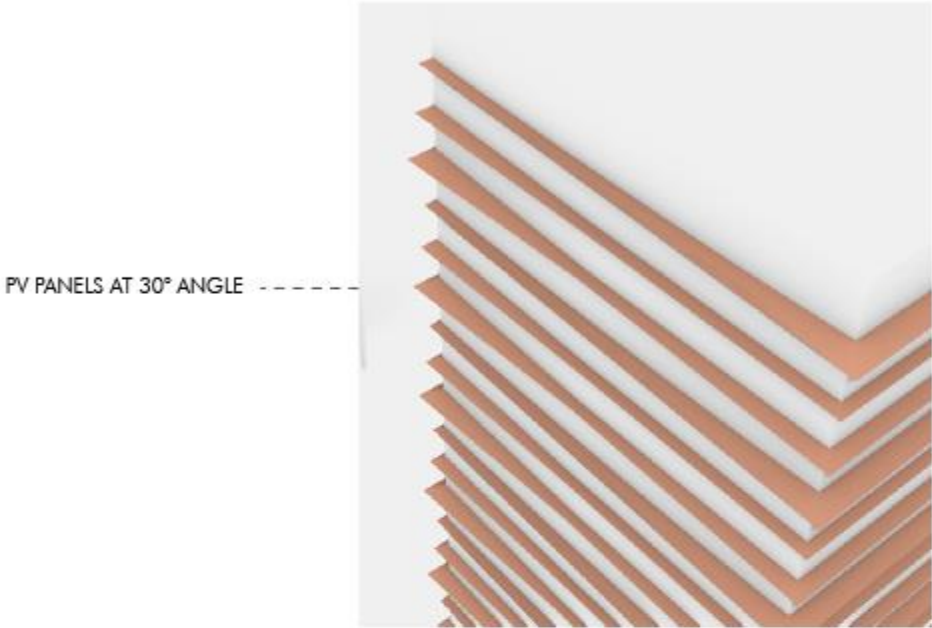
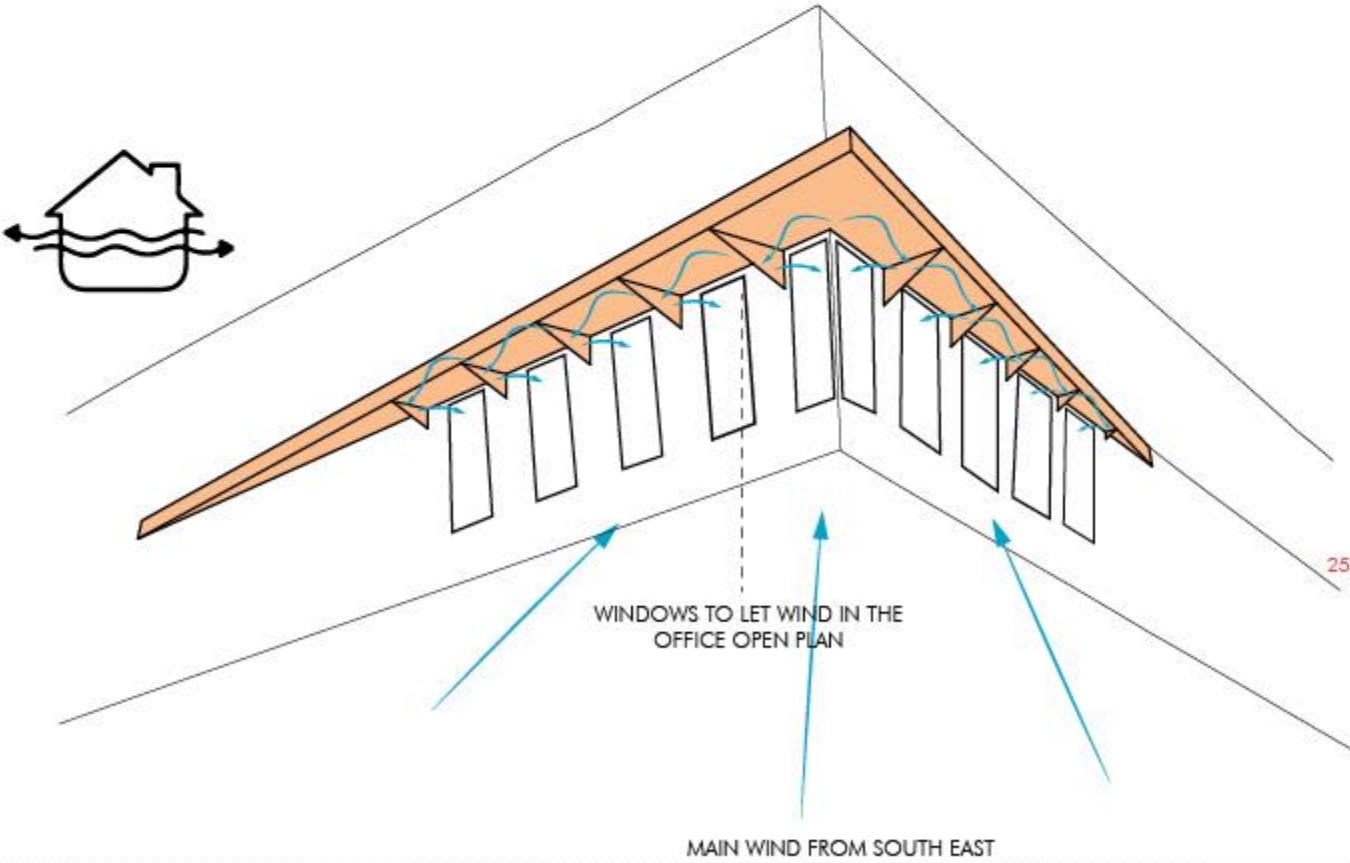


SOUTH EAST CORNER

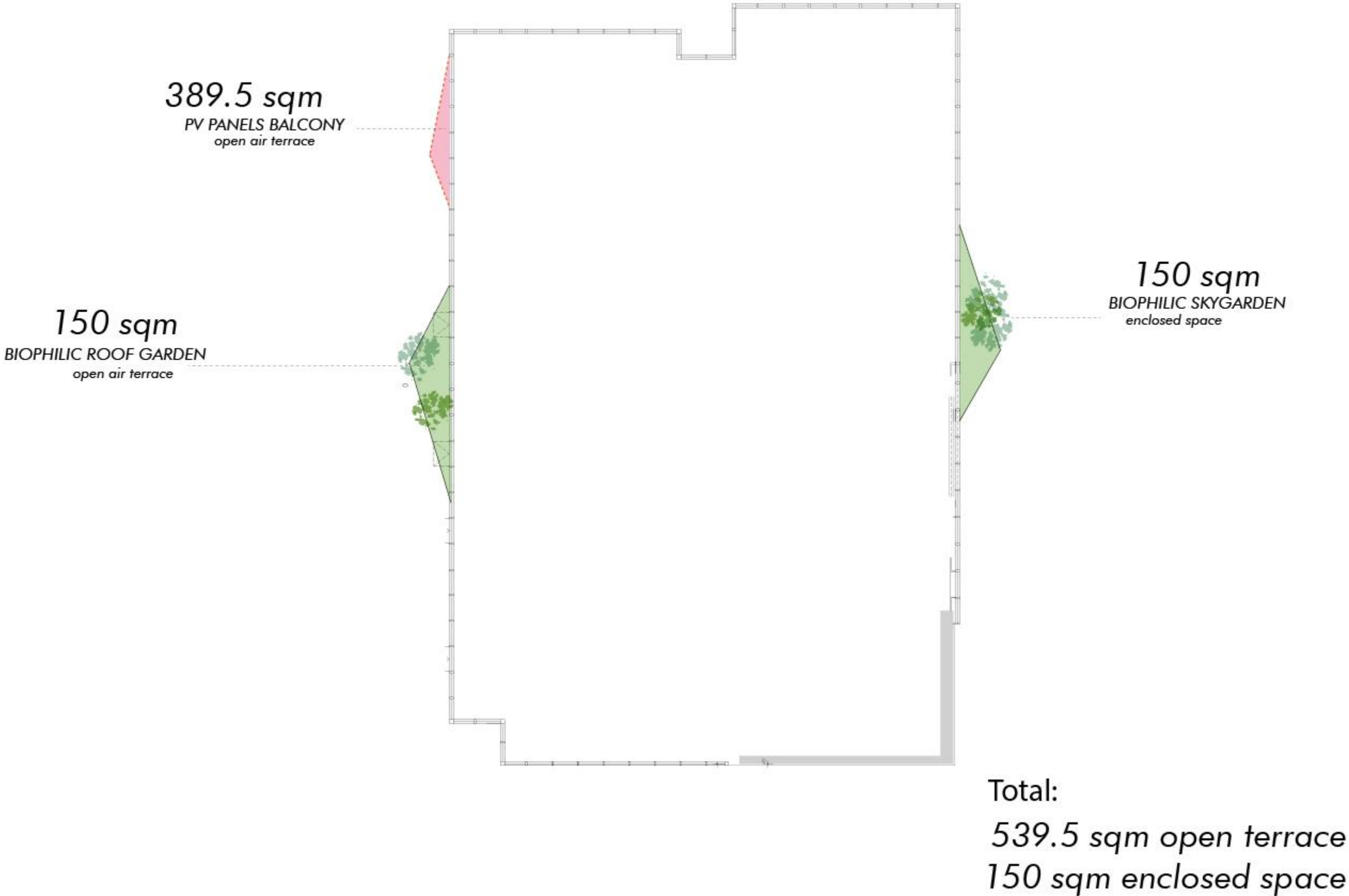
4. WIND CATCHERS - SOUTH WEST CORNER

The ability to open secure high-level windows will also contribute to controllability, which improves the users perception of thermal comfort.

SOUTH WEST CORNER



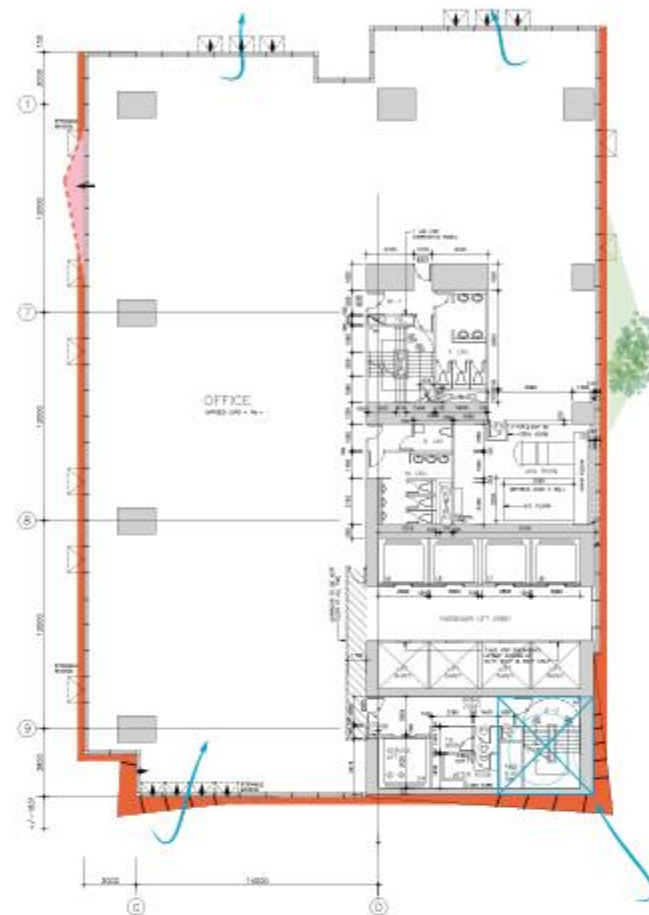
GFA: TOTAL ADDITIONS



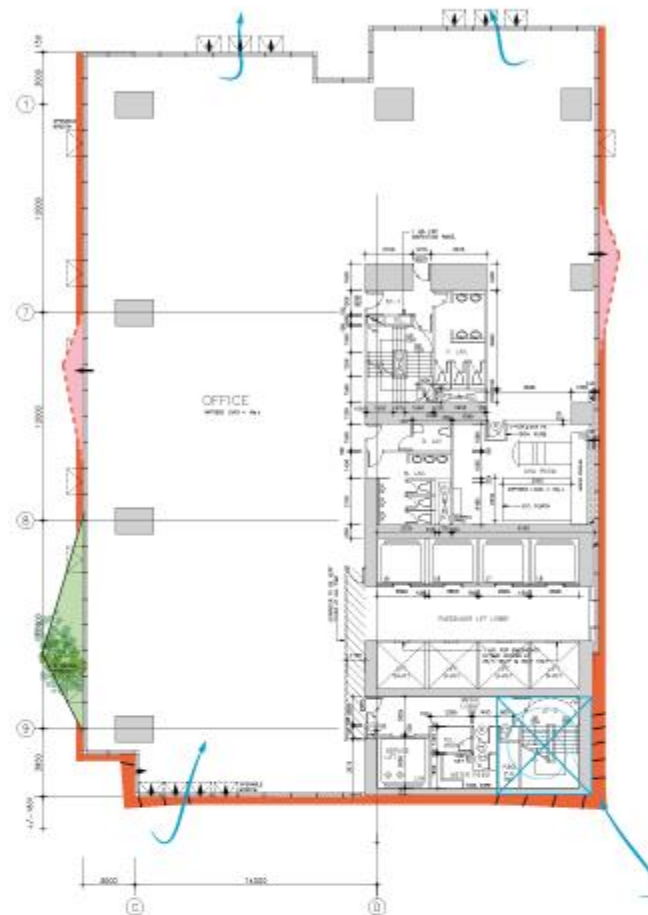
TYPICAL PLANS



FLOOR 30



FLOOR 31



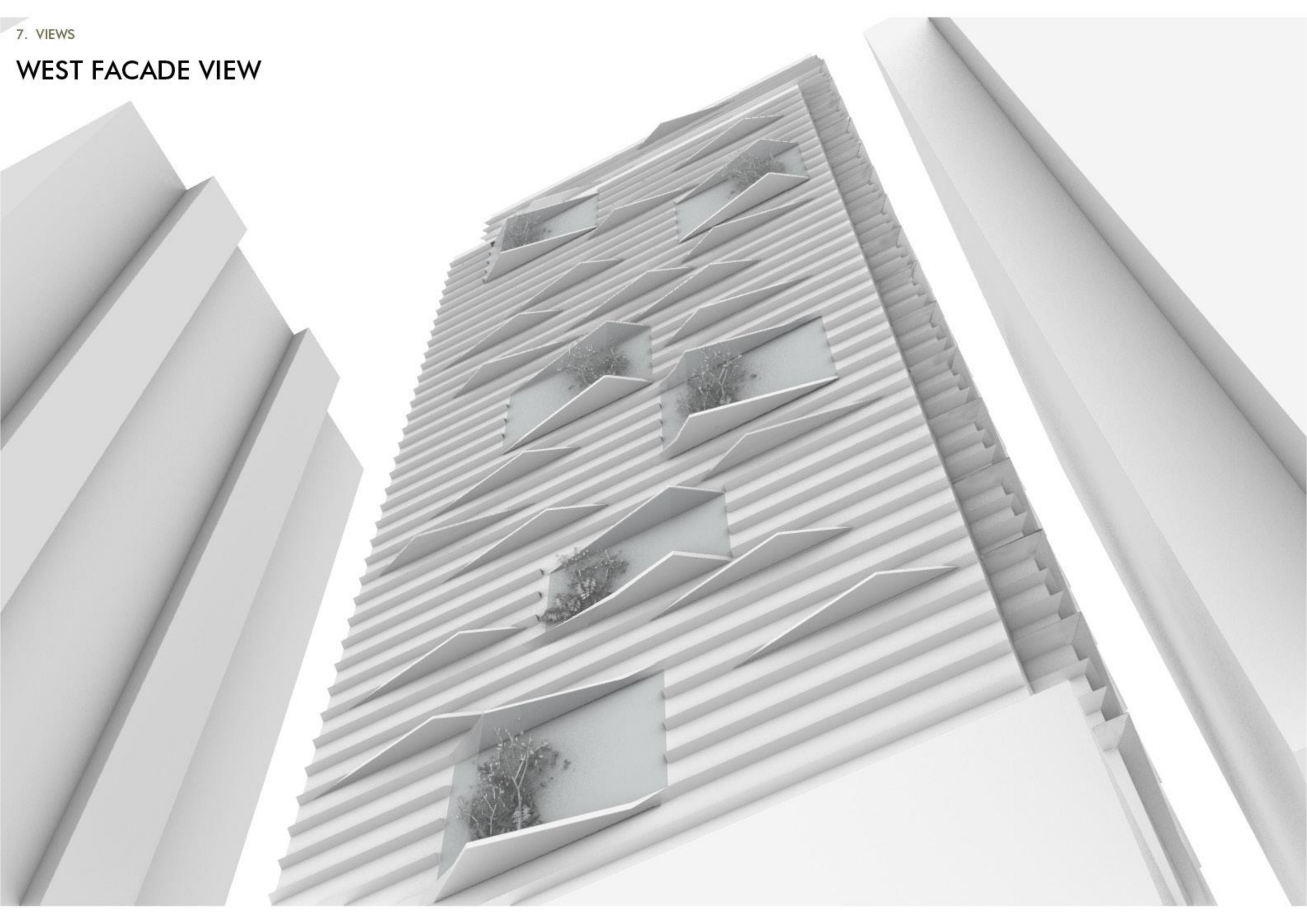
FLOOR 32



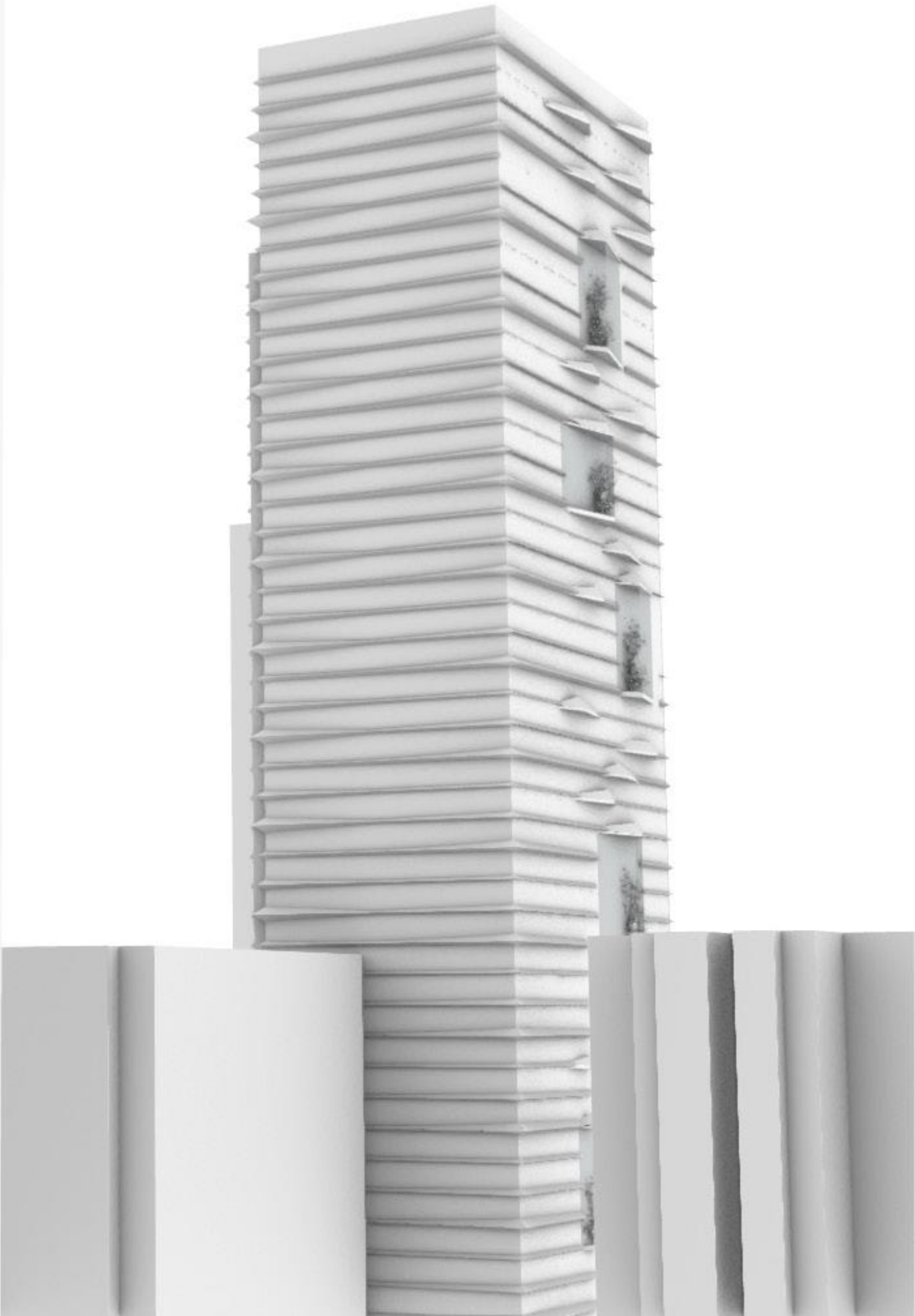
FLOOR 33

- ACCESSIBLE BALCONY
- PV PANELS
- WINTER GARDEN OVER 2-3 LEVELS
- WIND CATCHING FEATURES
- PREVAILING WIND DIRECTION
- SHAFT FOR WIND ENERGY GENERATION

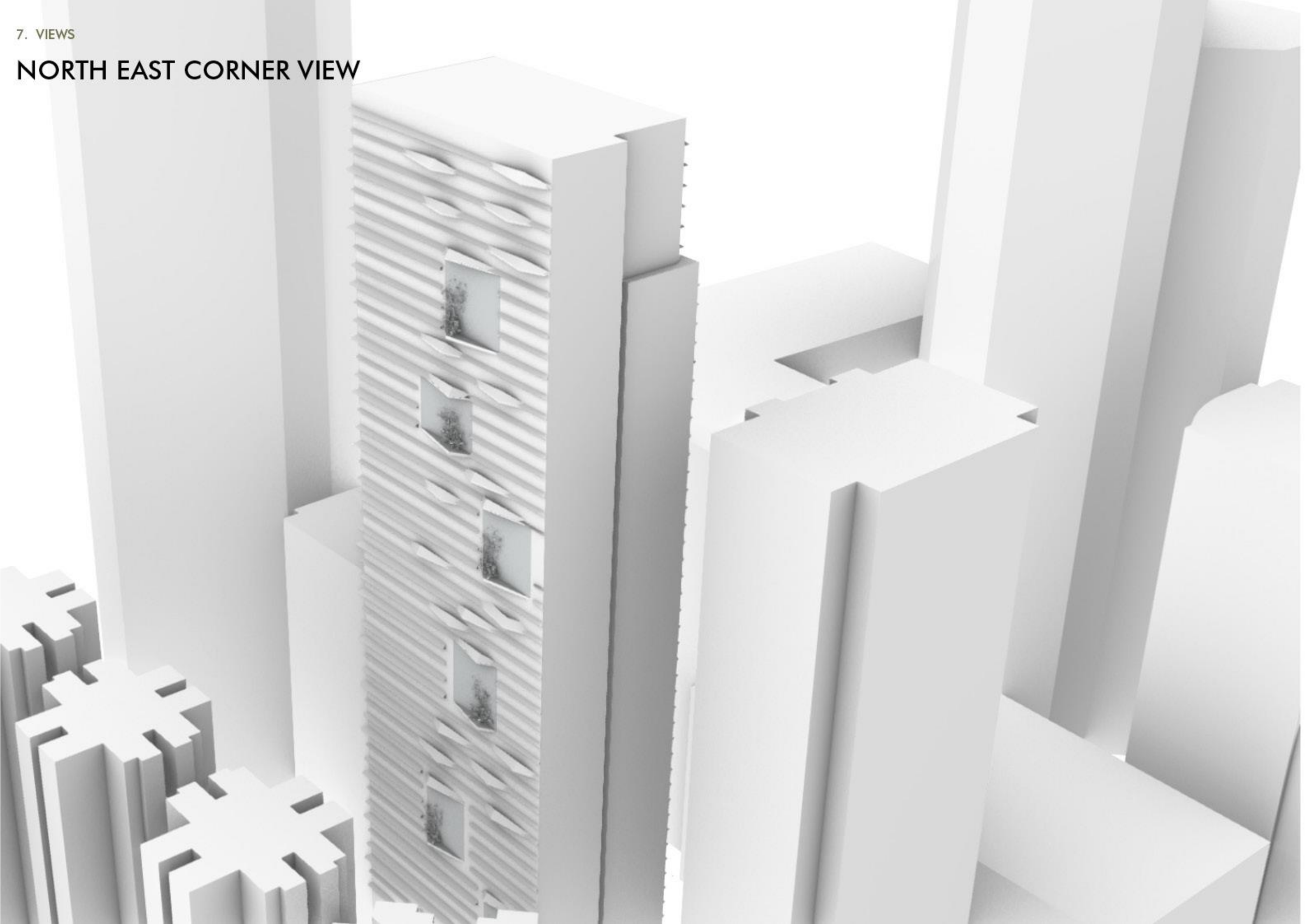
WEST FACADE VIEW



SOUTH EAST CORNER VIEW



NORTH EAST CORNER VIEW



ENVIRONMENTAL STRATEGY

To achieve “carbon-zero” in the long-run, we can:

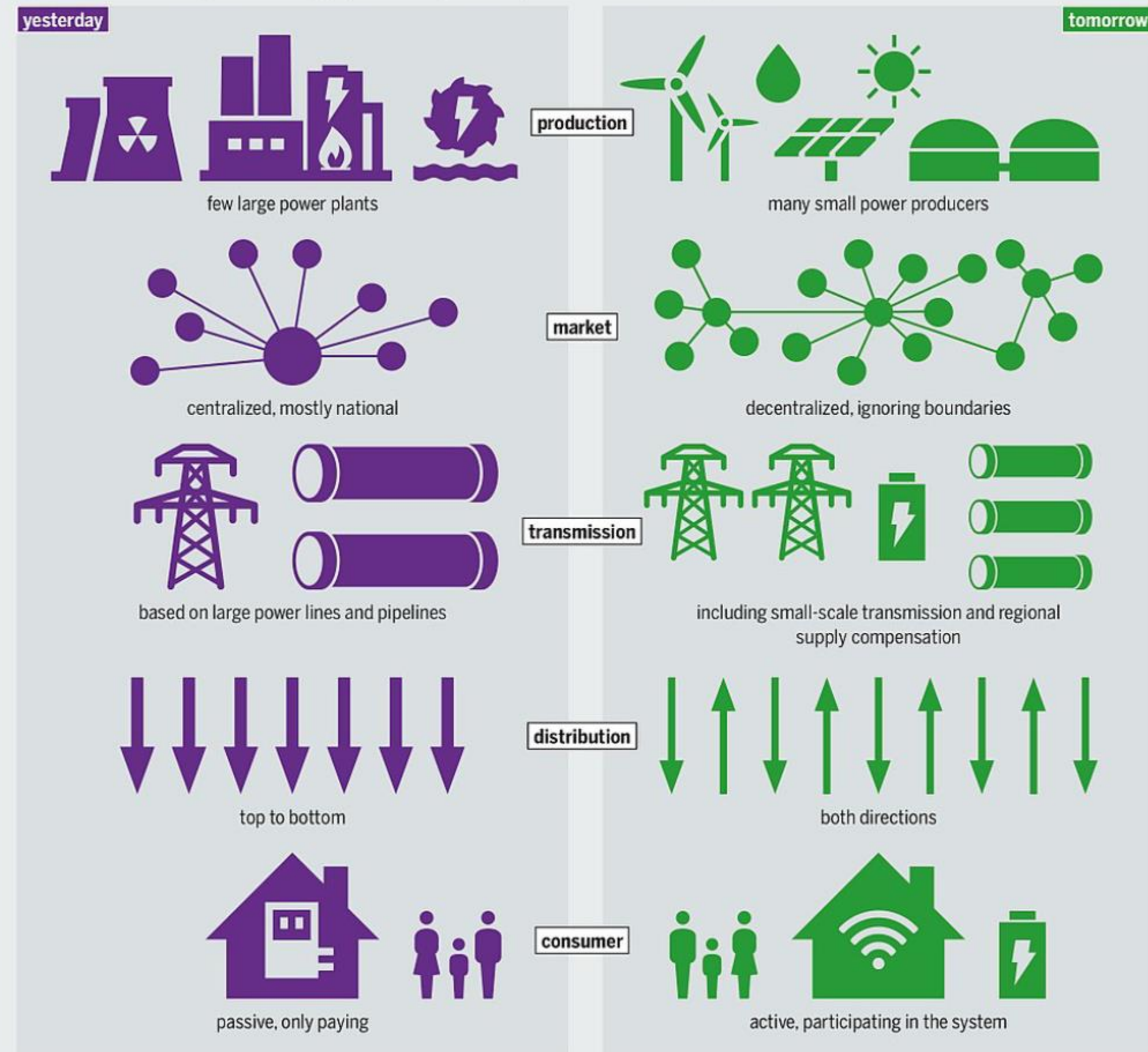
- Improve building system energy efficiency and performance
- Reduce energy consumptions through behaviour change
- Reduce cooling loads and optimize energy consumption
- Compensate the energy usage through renewable energy sources

Our proposal focuses on solar gains as being the main contributor to the building’s energy use. Therefore the following features on the building envelop will be helpful to achieve reduced energy consumptions:

- Renewable distributed energy resources (DERs) in smart grid
- Active façade systems
- Skygardens & Green roofs

STAYING BIG OR GETTING SMALLER

Expected structural changes in the energy system made possible by the increased use of digital tools



PREFABRICATED MODULES

Natural materials and innovative bio-materials that sequester carbon will be used in an offsite pre-fabrication process for the façade modules, which will drastically reduce the embodied carbon content and construction site impacts.

- Time and cost efficient.
- Increase in quality as each component is created in a controlled environment.
- Site is kept clean and organised, reducing waste.
- Replicable, scalable and easy to manage



IMPROVE ENERGY EFFICIENCY

Solar gains are expected to be the main contributor to the building's energy use.

The **passive solutions** proposed include the provision of **external shading** devices, sized to the relevant façade orientation and solar angles, to stop solar radiation before it enters the building. The secondary impact of that will be that internal blinds will not be needed as often, therefore improving daylight levels and reducing artificial lighting use.



HEALTHY AND SUSTAINABLE

The use of vegetation on external enclosed balconies will provide external shading and communal amenity.

The wind catcher elements will be used to channel wind from prevailing directions, through high-level secure openings on all accessible sides of the façade, allowing for cross ventilation to occur on the office floors during the cool seasons.



REDUCING COSUMPTIONS

An energy model will be produced at the next stage of the competition.

Initial calculations have been carried out, which show that the passive design interventions have the potential of **reducing the landlord energy consumption by approx. 10%**, not accounting for contributions from renewables.



IMPROVED LIFECYCLE

The proposed measures aim to increase the longevity of the building by increasing its resilience against climate-driven comfort issues and grid dependency. As a result, it would **improve its lifecycle carbon performance.**

If we can retain more existing structures through intelligent retrofit, we will reduce carbon emissions and embodied energy costs, help conserve resources, and set buildings up for a longer life.

