

## CONTEXT PLAN

The South East False Creek 2010 Olympic Athlete's Village comprises sixteen tightly interconnected buildings within a matrix of roads, public open space and pedestrian networks. The community will embrace 850 units of market housing, 250 units of social housing 80,000 square feet of commercial space, and a full service Community Center all constructed at minimum LEED Gold standard.



The challenges of the existing urban context and street orientation as precedent to a Net Zero overlay were considered by the team as an opportunity to challenge the performance of a building in a real city situation, with real city density, real overshadowing and a diverse community of occupants.

## DATA

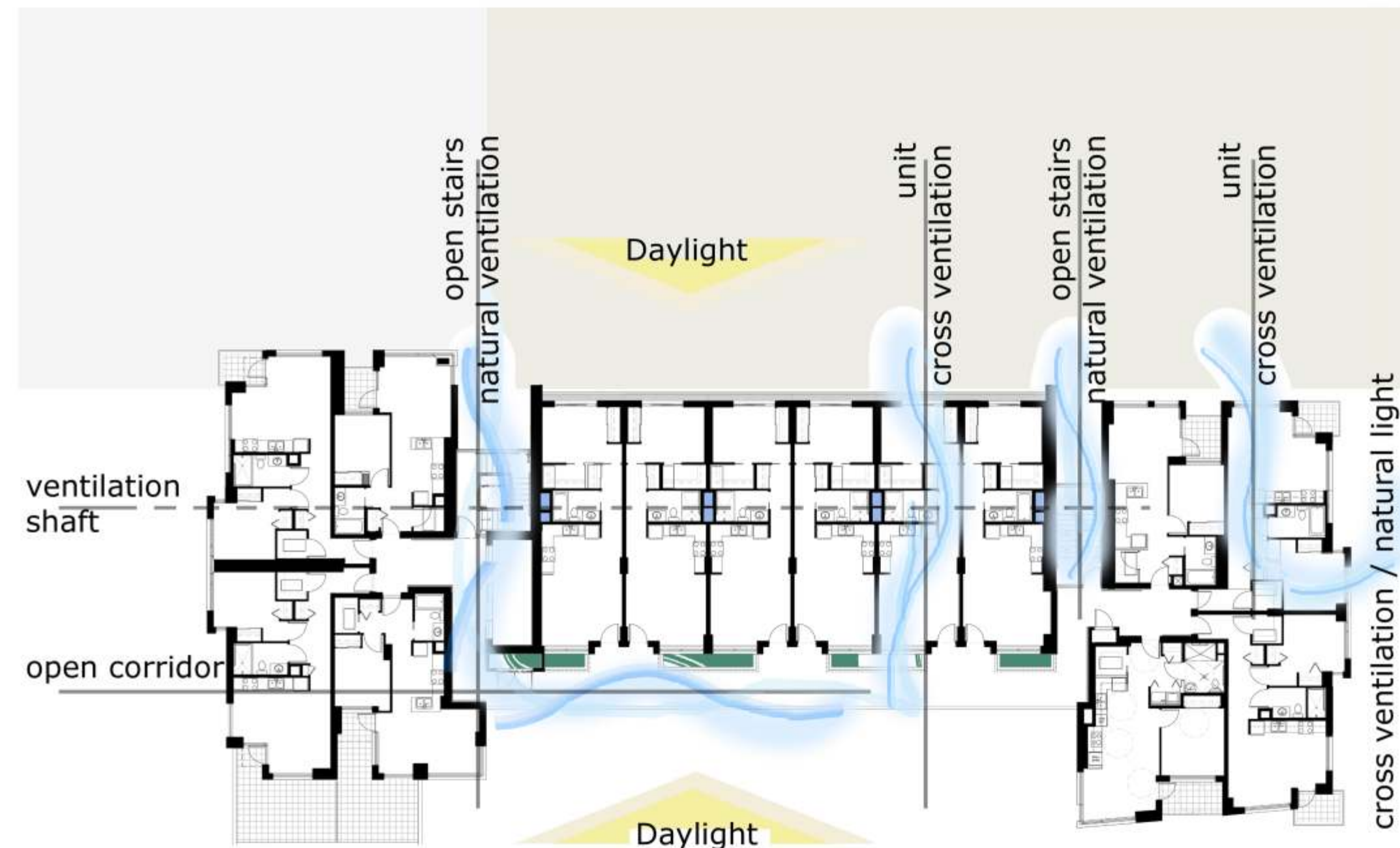
### NZ BUILDING CANADA GBL Architects

Gross Area	4,037 M2
Gross Wall Area	3,800 M2
Fenestration Wall Ratio	33%
Opaque Wall Ratio	R25
Window U value	0.24 - Triple Pane



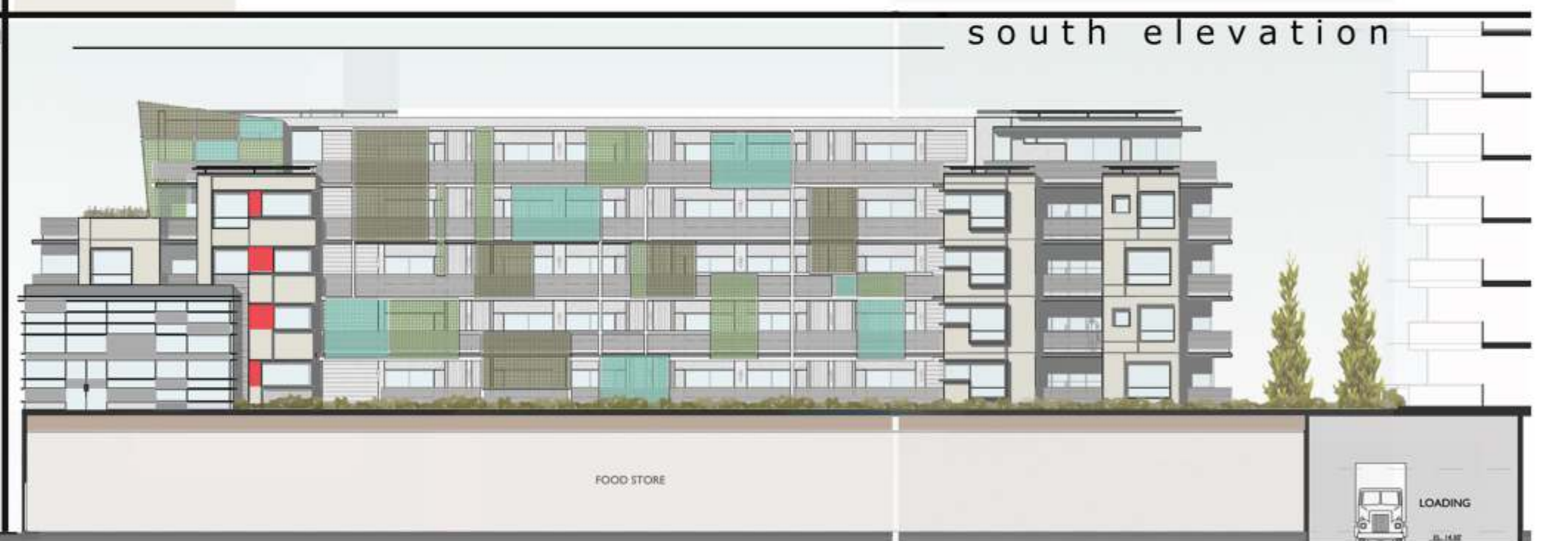
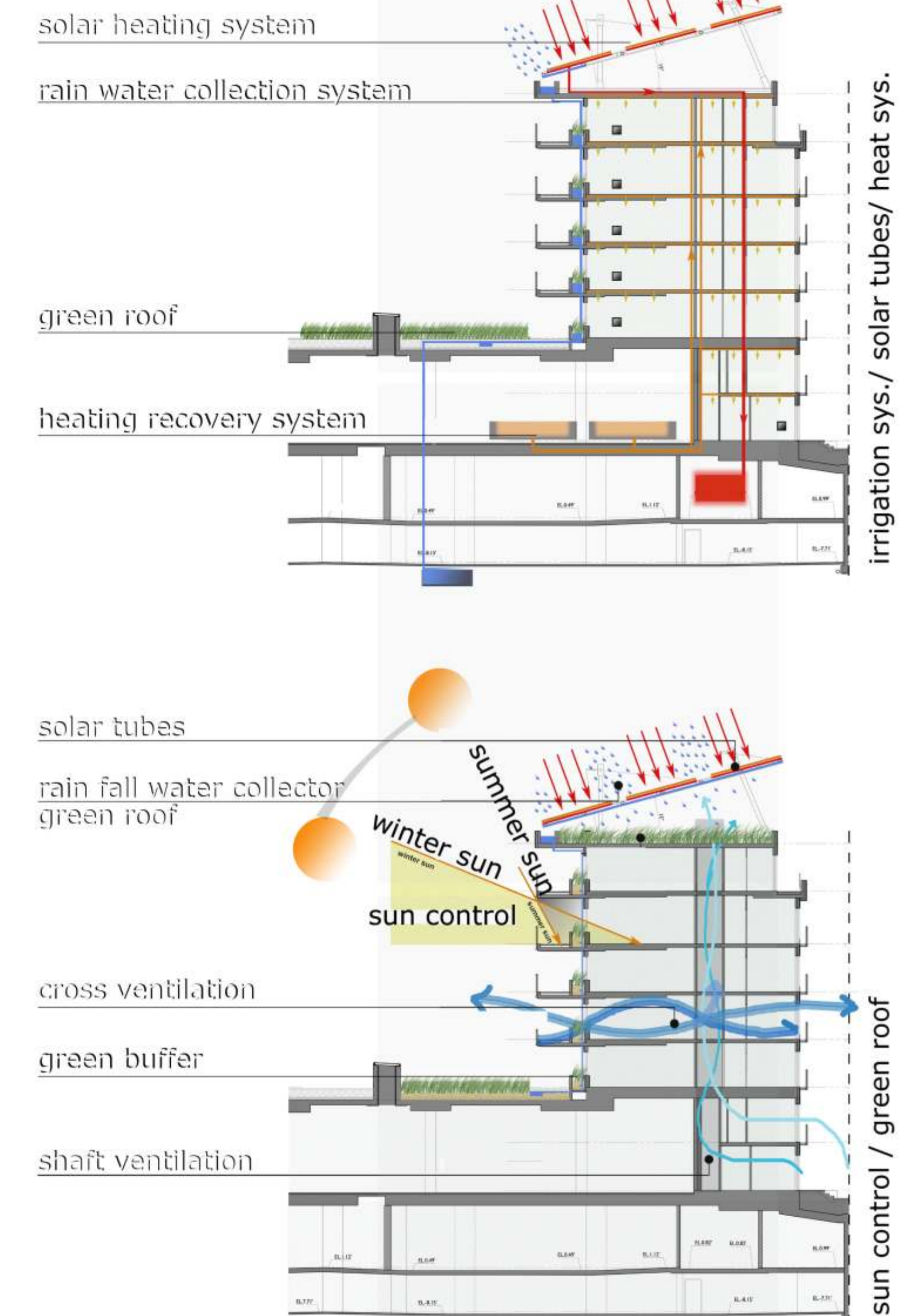
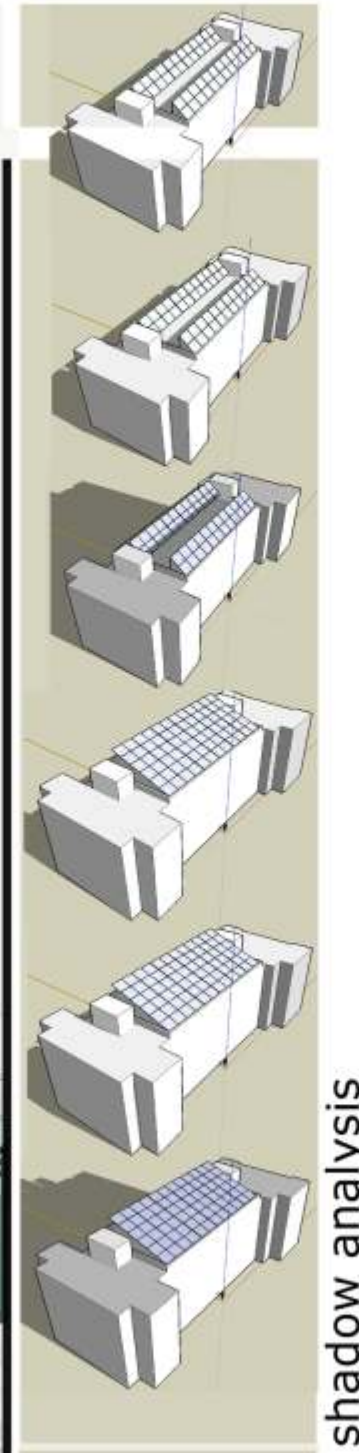
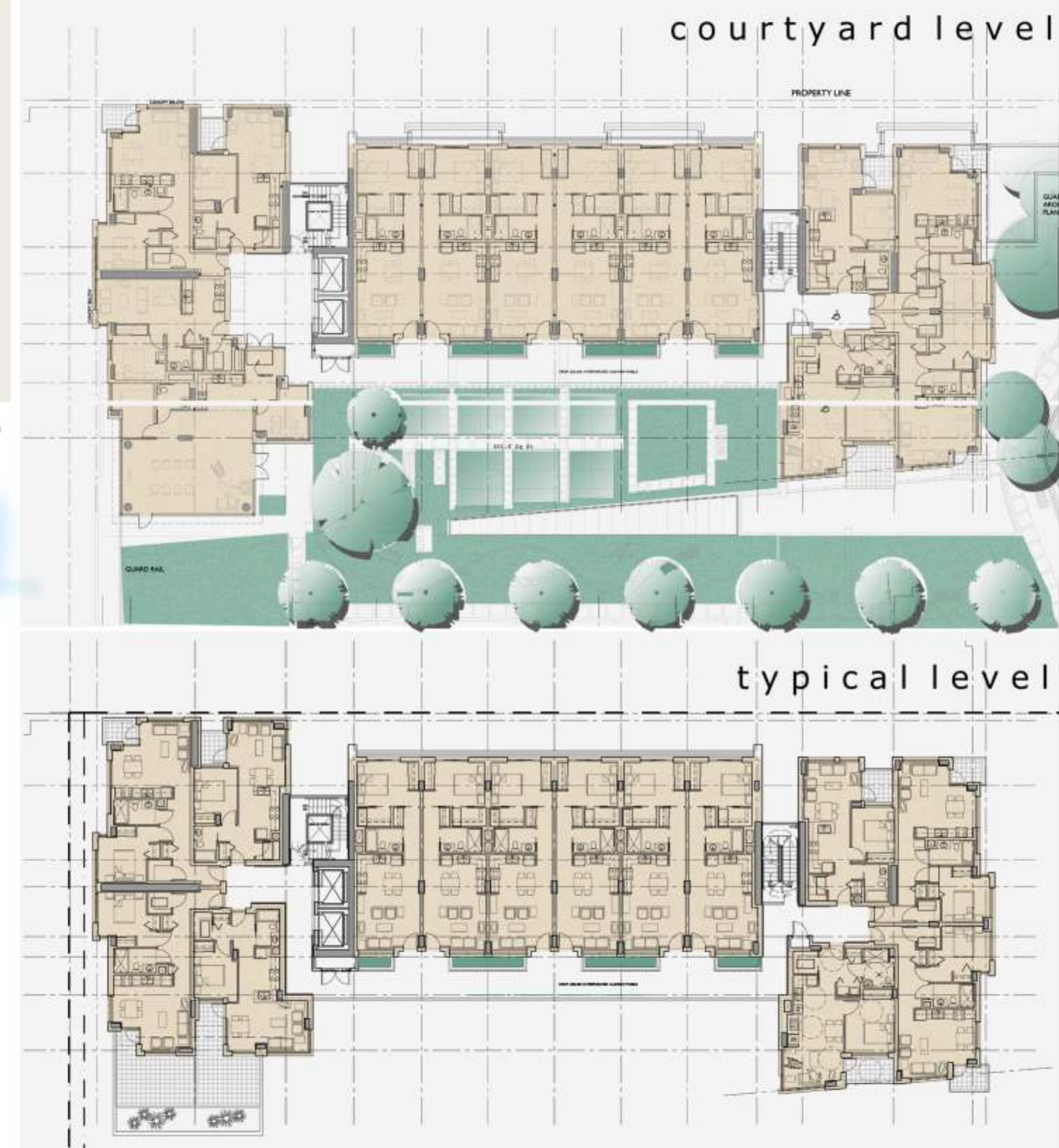
## Integrated Design

A **design team** including architect, client, mechanical, electrical and structural engineer worked collaboratively to **create spaces** where the **energy** demand for the interior activities was **minimized** through careful attention to building **orientation**, **envelope** design and **systems** integration.



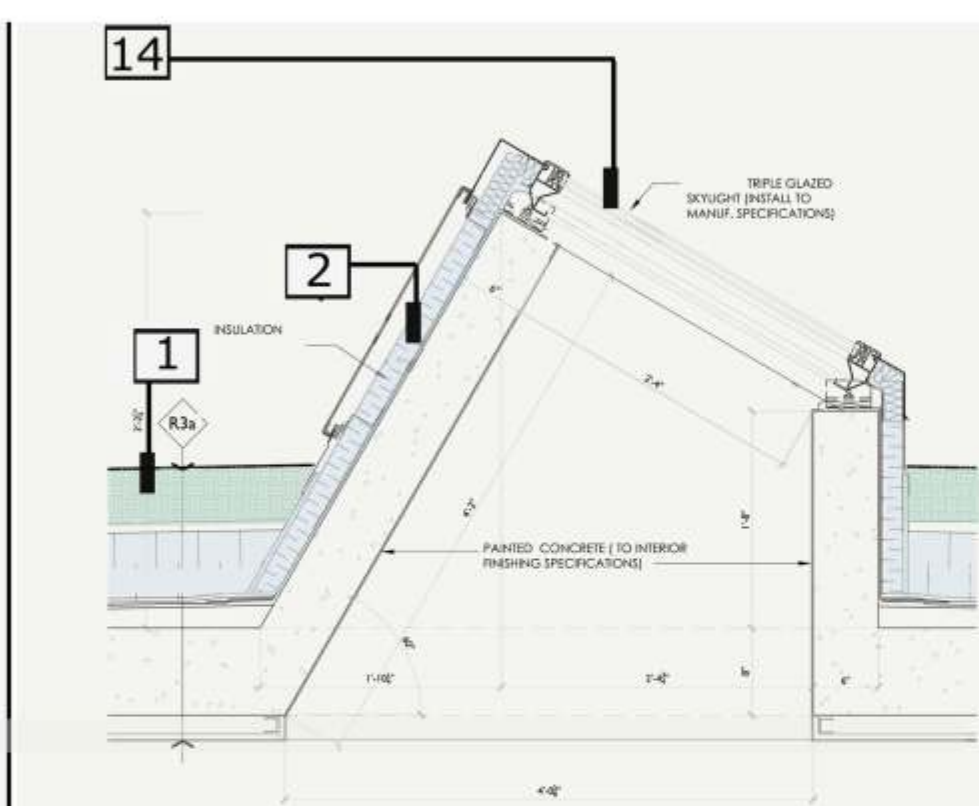
The single loaded open corridor and stairs obviate the requirement for mechanical systems for heating & pressurization while permitting day light and air to pass through corridors and suites, thus achieving passive ventilation & daylighting.

Circulation is designed to be open and to incorporate planters and benches to promote social well being and a sense of identity and liveability for the residents. The overhang from the corridor acts as an architectural shade that protects the envelope, increases the building durability, and eliminates summer solar heat gain in units.

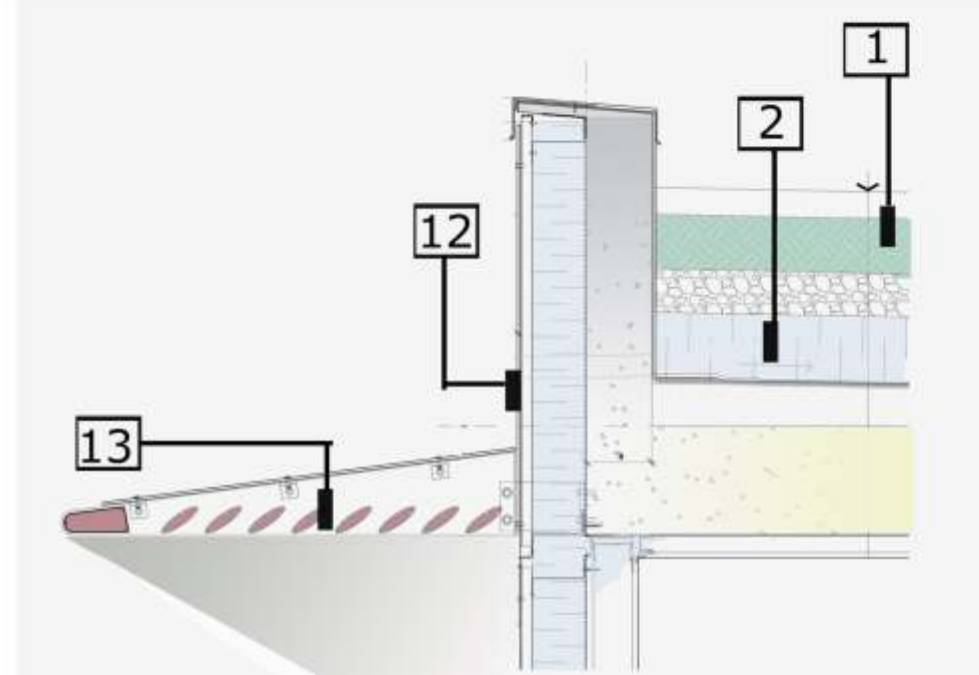




## C SOLAR TUBES



SKYLIGHTS

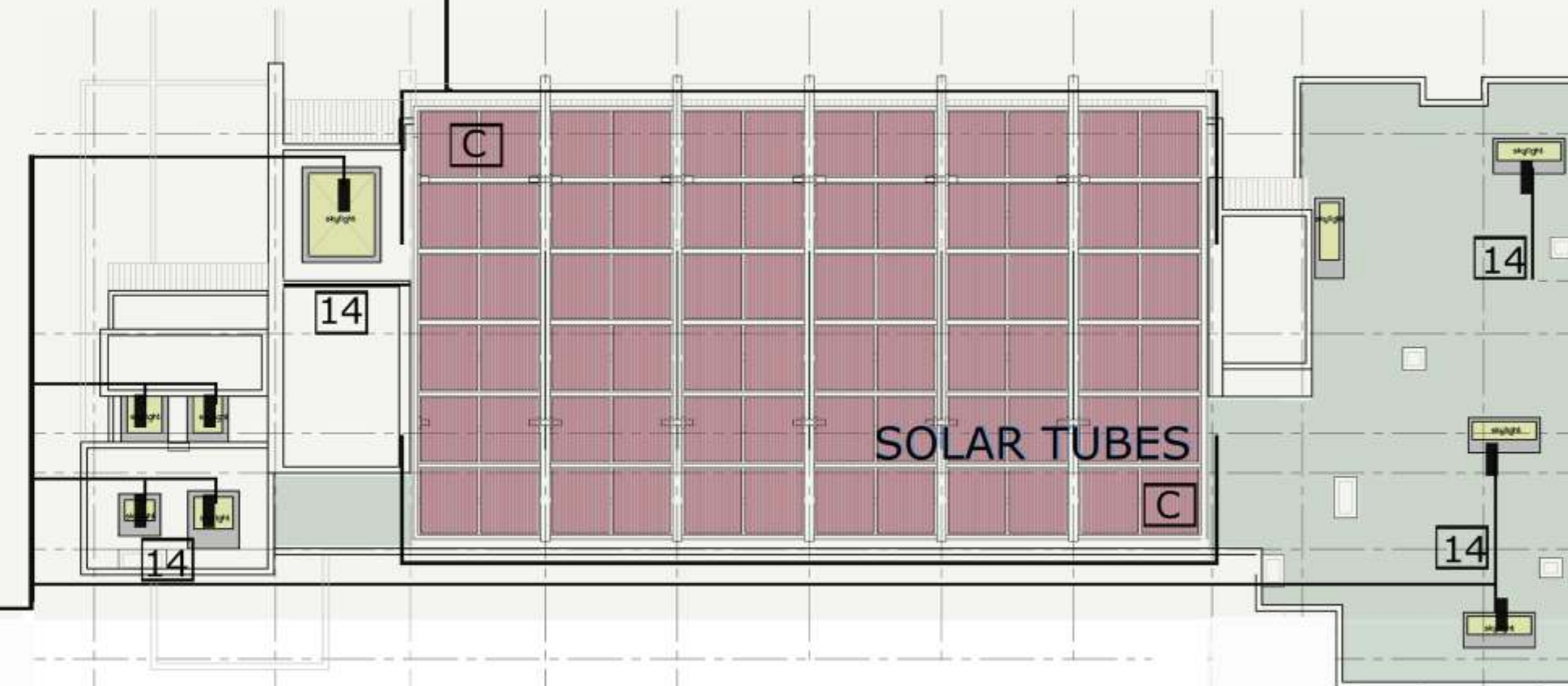


SHADING SYSTEM

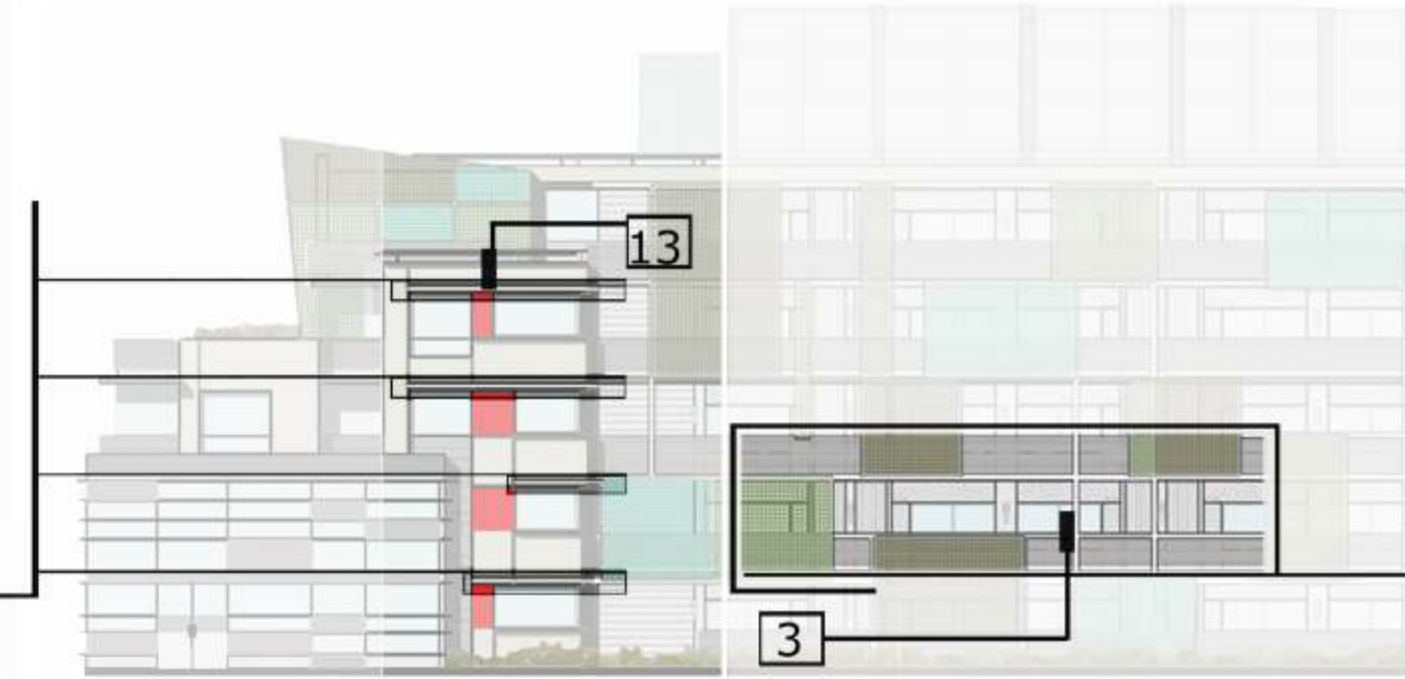
TAIL

DE

ROOF PLAN



SOLAR TUBES



OPEN CORRIDORS

## Applied sustainable technology

### A-Heating system connected to the Grocery Store.

The heat rejected by the Grocery Store and the electrical rooms will provide heating for the building and preheating for domestic hot water.

### B-Ventilation chimneys at the units.

Conventionally the washroom and kitchen hood exhaust vents pass individually through horizontal in-slab ductwork. Here, in the NZ building, suite exhausts feed into collector chimneys with 2 speed exhaust fans at the roof. The fans maintain constant negative pressure in the chimneys to prevent cross suite contamination.

### C-Solar tubes.

The solar hot water vacuum tubes located on the rooftop of the building provide hot water to heat the domestic water for the NZ and two other buildings on site. When the sun is absent and during winter months when air temperature is reduced, a neighbourhood energy utility provides required backup heating.

### D-Monitoring.

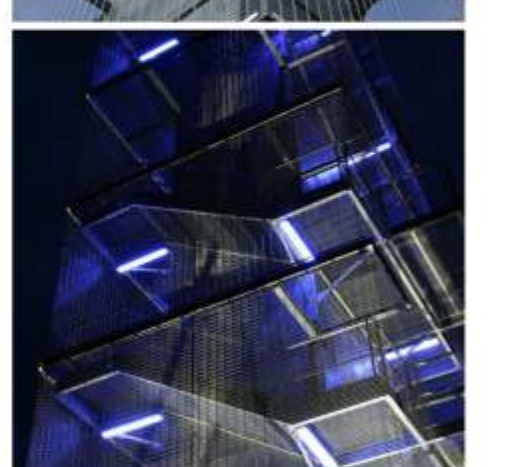
The domestic water, space heating and electrical loads are all continuously monitored and recorded for immediate access by building occupants.



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REFERENCE IMAGES

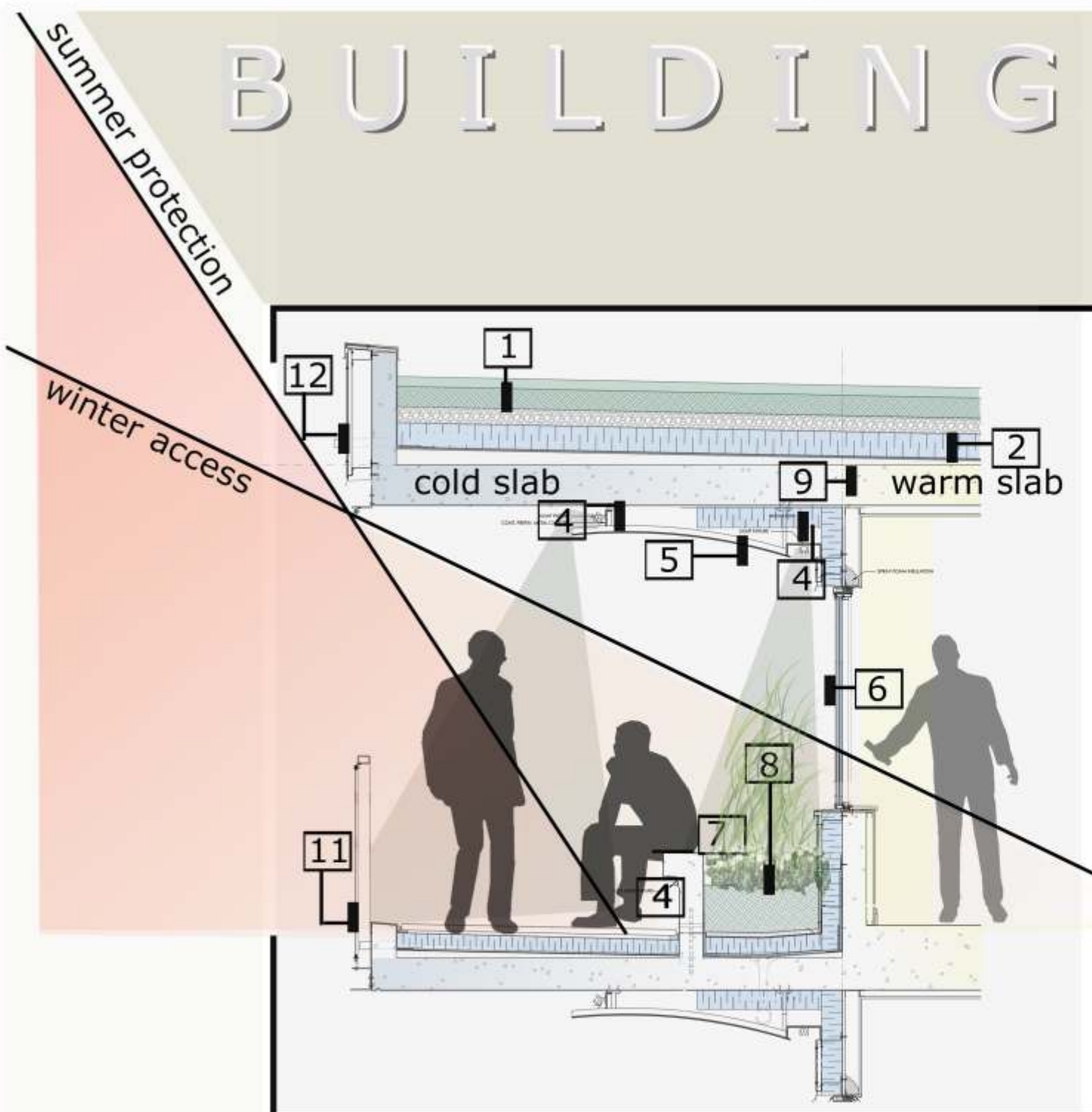


METAL MESH

OPEN STAIRS



## BUILDING PERFORMANCE



- 1- Rain water collector / extensive green roof
- 2- Insulation for thermal break
- 3- Perforated metal panel for acoustic and solar control
- 4- LED lighting
- 5- Perforated metal dropped ceilings
- 6- High performance triple glazed windows
- 7- Furniture at corridor to promote social integration
- 8- Planters as a privacy buffer
- 9- Thermal break
- 10- Metal mesh enclosure at stairs and corridor for passive ventilation
- 11- Perforated metal handrails to improve building cross ventilation
- 12- Rain screen exterior cladding system
- 13- Solar shading system at south and west elevations
- 14- North Skylights for day lighting



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