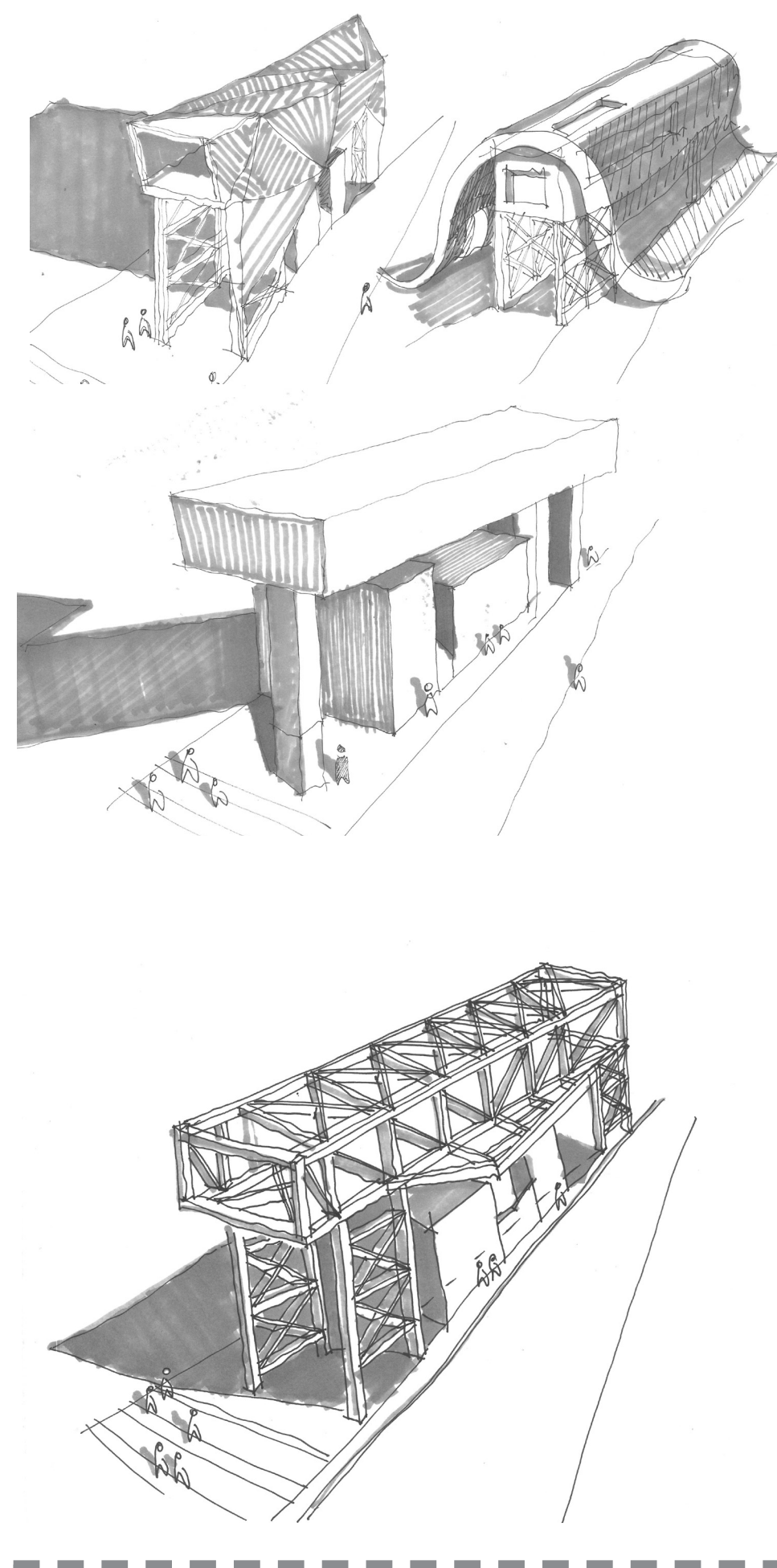
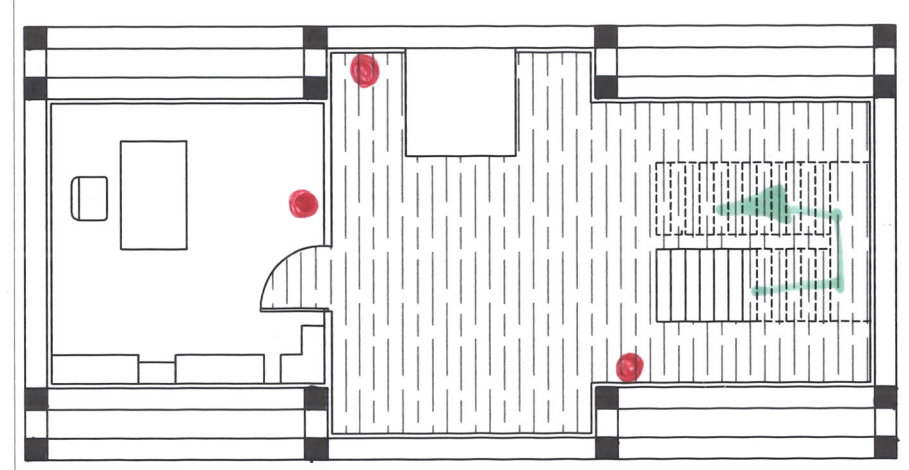
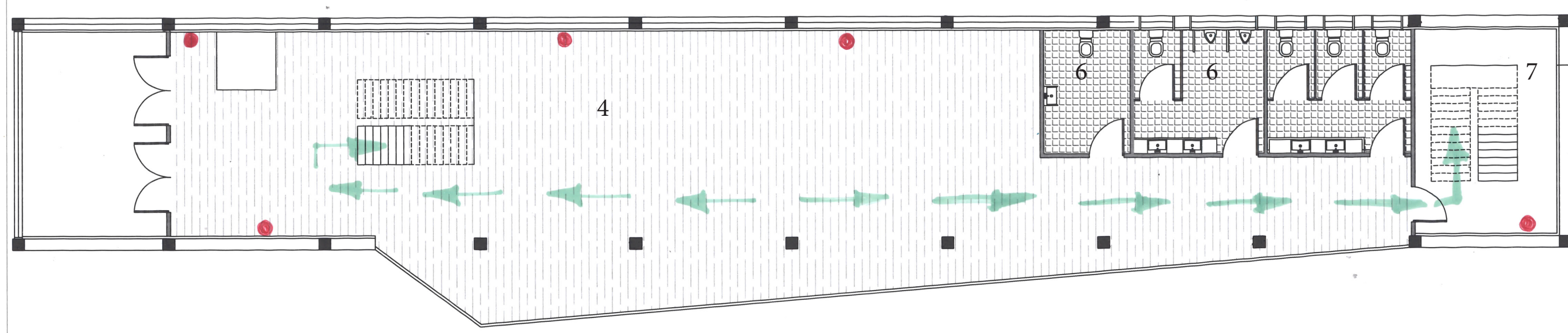


HS2 SKYDECK

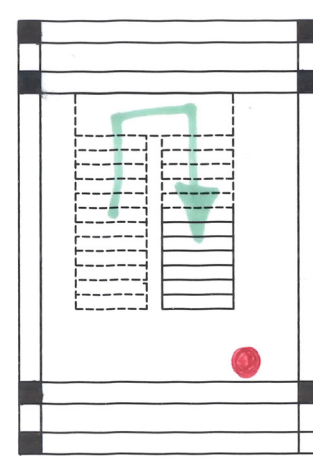
SITE ANALYSIS



FLOOR PLANS

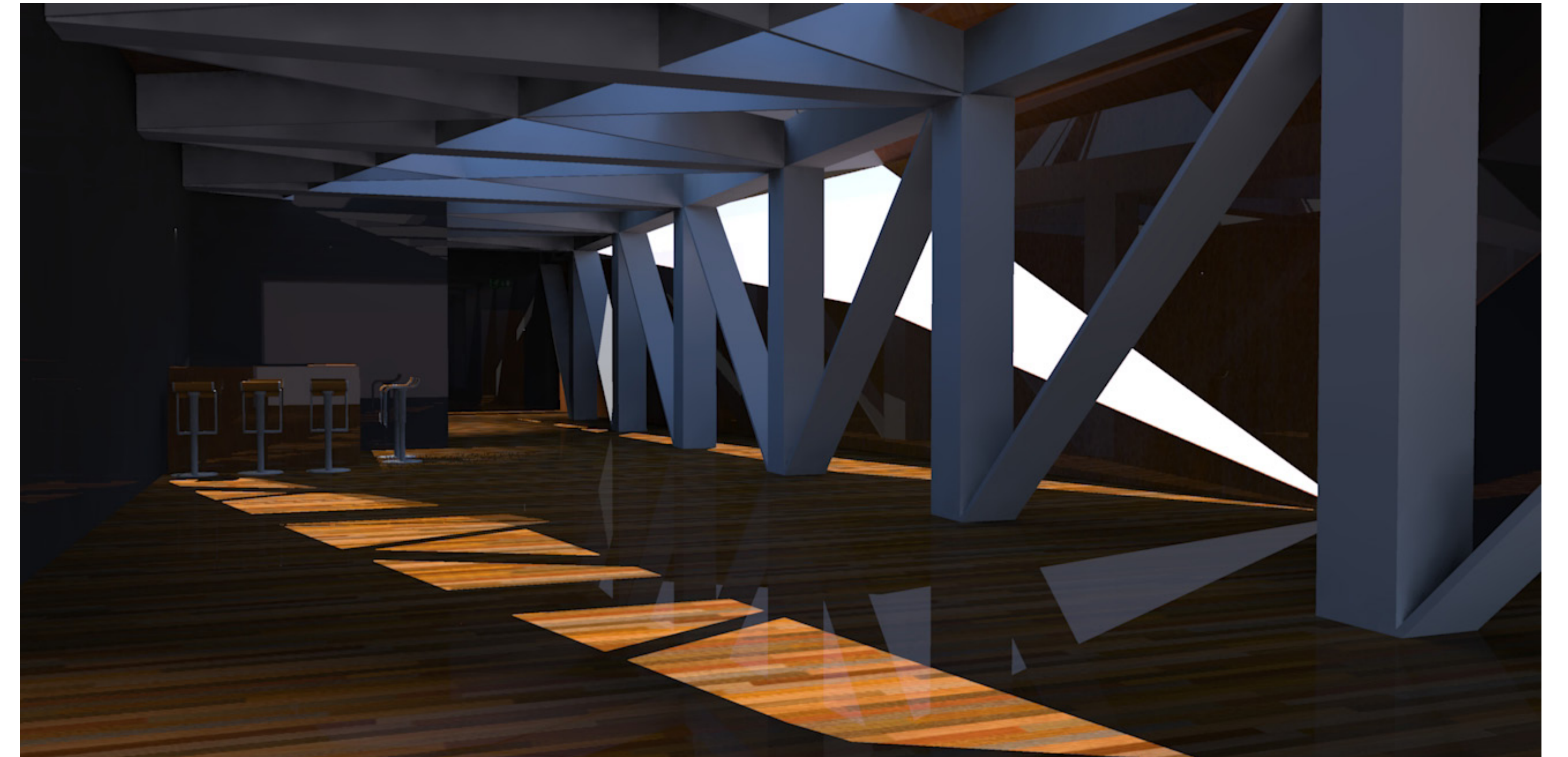
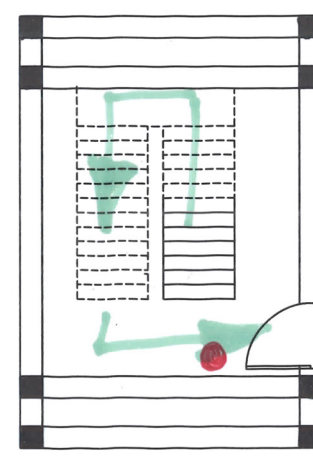
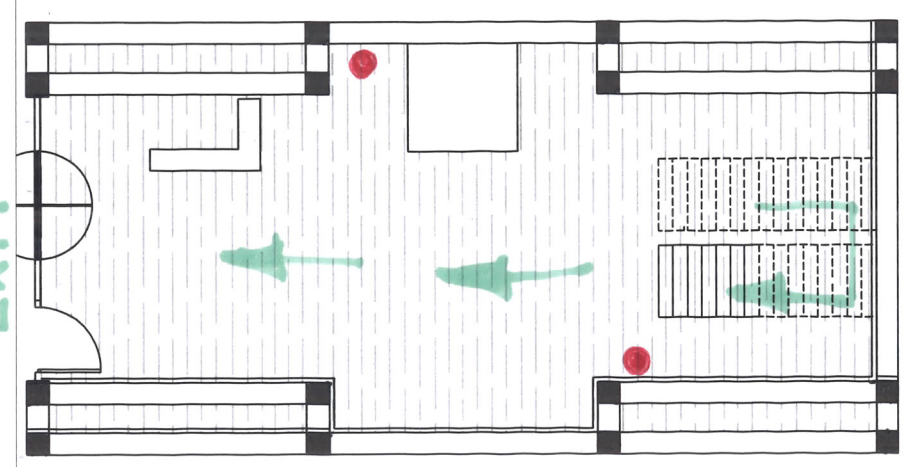


- Key
- 1 Entrance lobby
- 2 Reception
- 3 Office
- 4 Gallery
- 5 Viewing platform
- 6 Toilets
- 7 Emergency exit



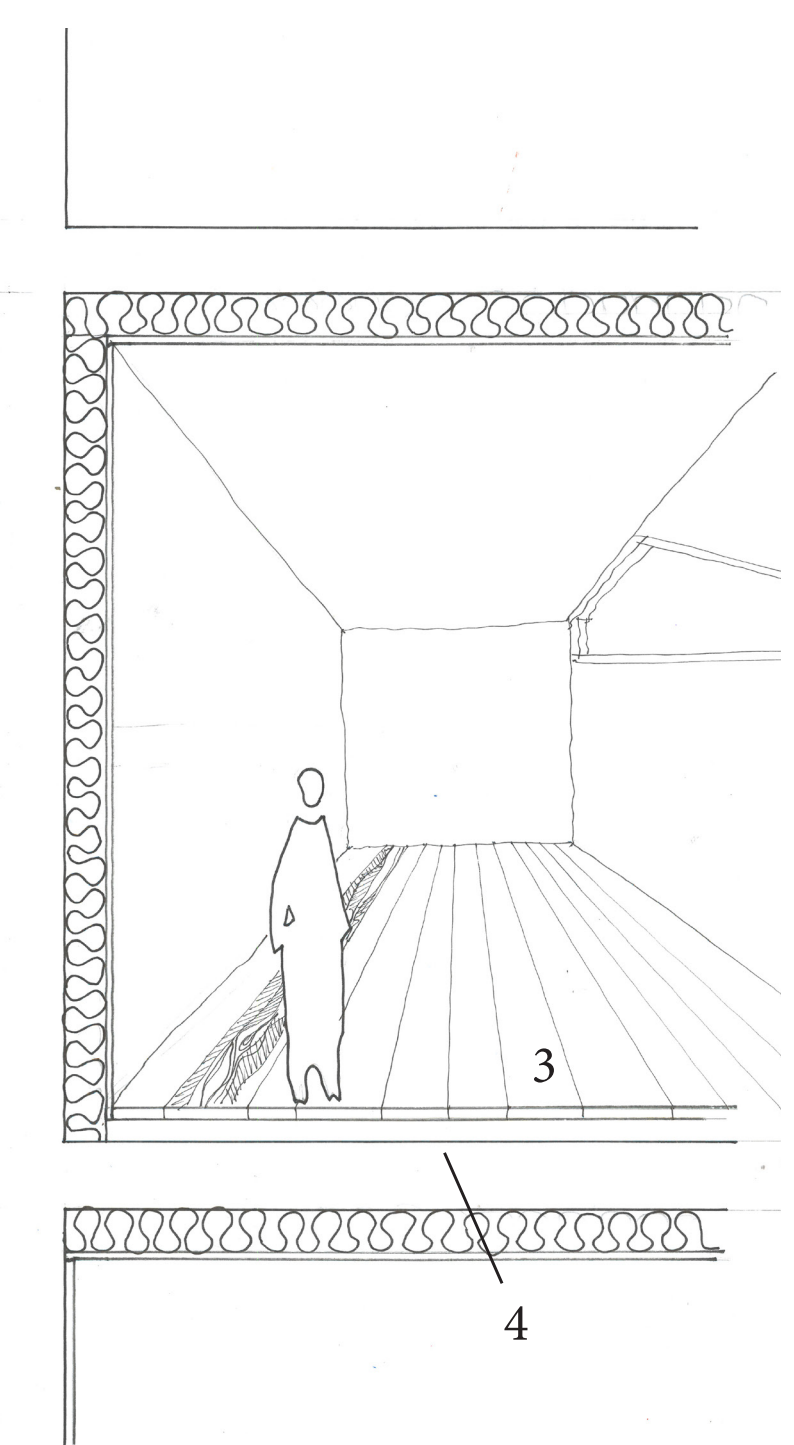
Fire evacuation strategy

- WAY TO EXIT
- FIRE EXTINGUISHERS



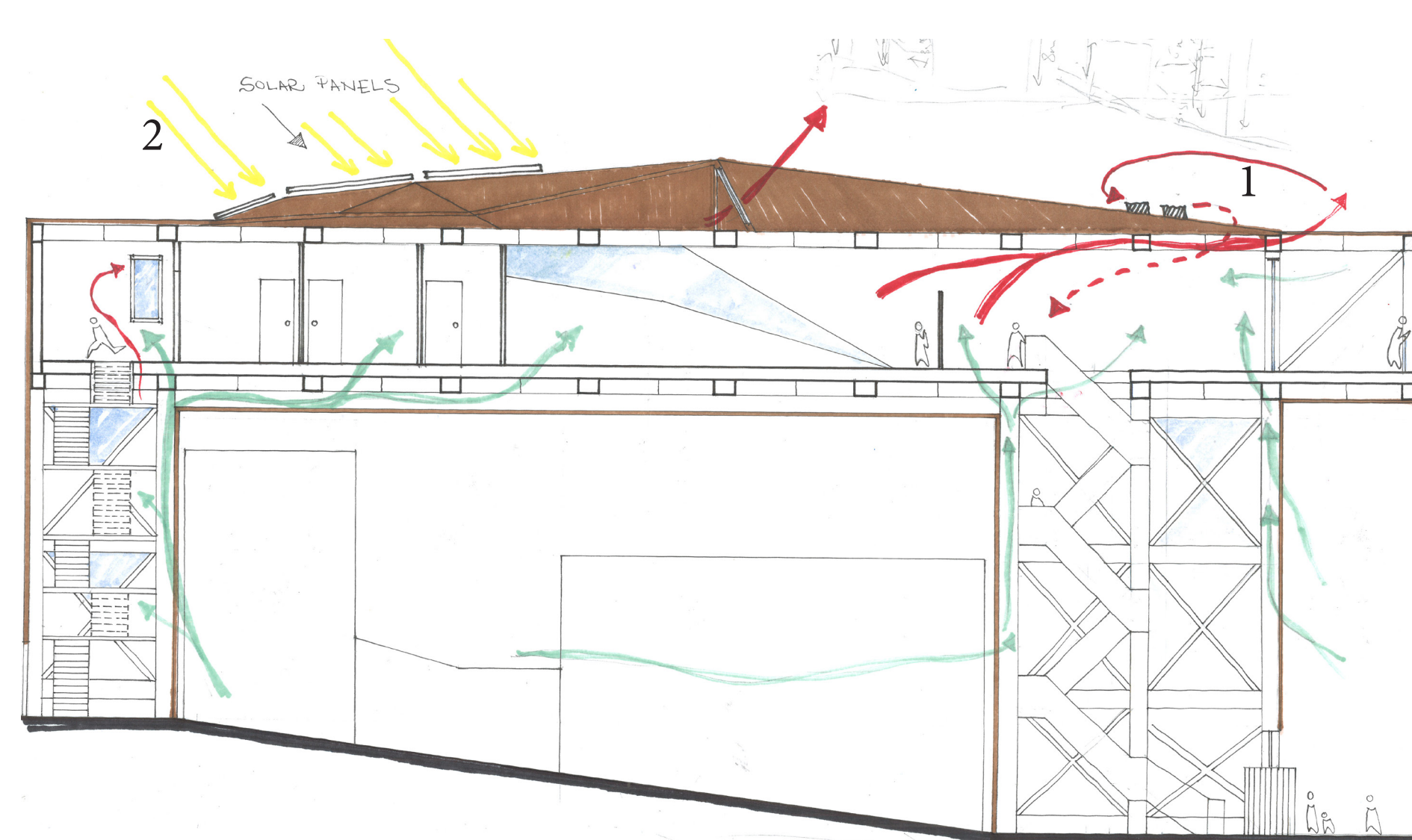
TECHNICAL SECTION

The thin concrete slab on the gallery floors (3) provides thermal mass that will help to regulate temperatures. The slab will absorb heat when it is hot in the gallery, conducting it internally and releasing it to the cooler air outside. When the weather is cold, the slab will prevent rapid drops in temperature by omitting heat stored back into the gallery space. Foam insulation boards (4) are used on walls of the gallery and in the ceilings as marked in the diagrams, to prevent heat from escaping through the metal walls (5).

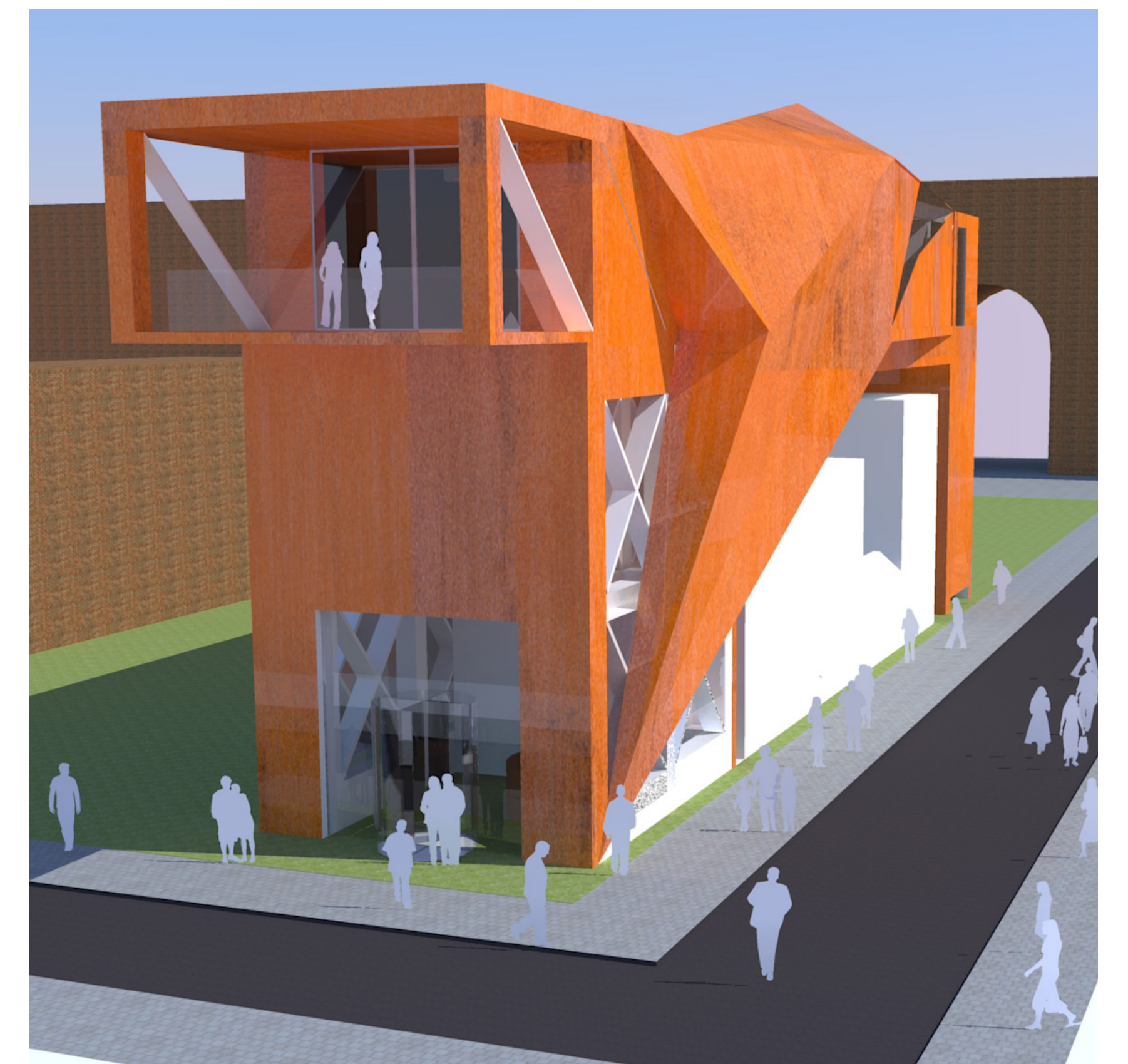


VENTILATION AND COOLING STRATEGY

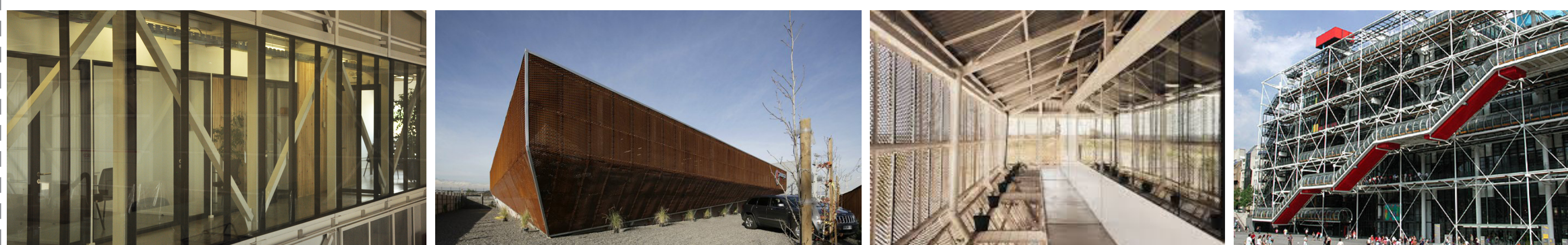
When the weather is very cold, heat is recycled, as warmth from the stale air leaving the gallery is passed by a coil heat exchanger, heating the incoming fresh air that enters the space. The power from the photovoltaic solar panels (2) on the roof will be used for the pumping system in the heat exchanger, and to power fans that re-direct the heat back into the space.



The passive stack effect has been utilised for ventilation in the gallery space. Fresh air at the lower level of the gallery is pulled in through vents due to pressure difference to the air inside. This fresh air is circulated around the gallery, and heated by people and amenities in the space. As the air heats, it rises and is fed through wind cowls in the roof. The wind cowls (1) are used to filter out stale air, while a coil heat exchanger at the base warms incoming air and feeds it back into the gallery when the weather is cold, as an additional heat source. Stale air heats incoming air in the winter, and cools incoming air when it is hotter in the summer. When the gallery needs extra lighting at times of poor daylight, high efficiency LED lighting will be used. The lighting system will be controlled by sensors that detect movement and natural daylight levels, allowing the lights to be dimmed when there is a greater amount of natural sunlight coming through the windows.



PRECEDENCE IMAGES



MATERIALS



CONSTRUCTION SEQUENCE

- Phase 1**
Auger bored piles are drilled and cast in-situ. This type of pile has been chosen as it is quick, economical, and will cause less vibration than other piles, reducing the likelihood of the foundations disrupting the other buildings on the site.
- Phase 2**
The pre-cast column sections are erected from the ground floor up. Horizontal bracing is drilled into place at each column joint, and diagonal bracing is fixed in place.
- Phase 3**
The main gallery truss is assembled. Floor beams on the gallery floor and first floor are drilled into place. The gallery is built as a cantilevered frame from both the North and South columns, during which time 250 tonne crane support is used.
- Phase 4**
When the cantilevered ends of the unsupported section have been joined, support is removed and aluminium frames for cladding and insulation are attached directly to the steel structure. Steel floor deck is fitted and concrete slab is poured.
- Phase 5**
Glass cladding, foam insulation and waterproofing panels attached to frames to make the structure watertight quickly. Then weathered steel cladding is fitted.

