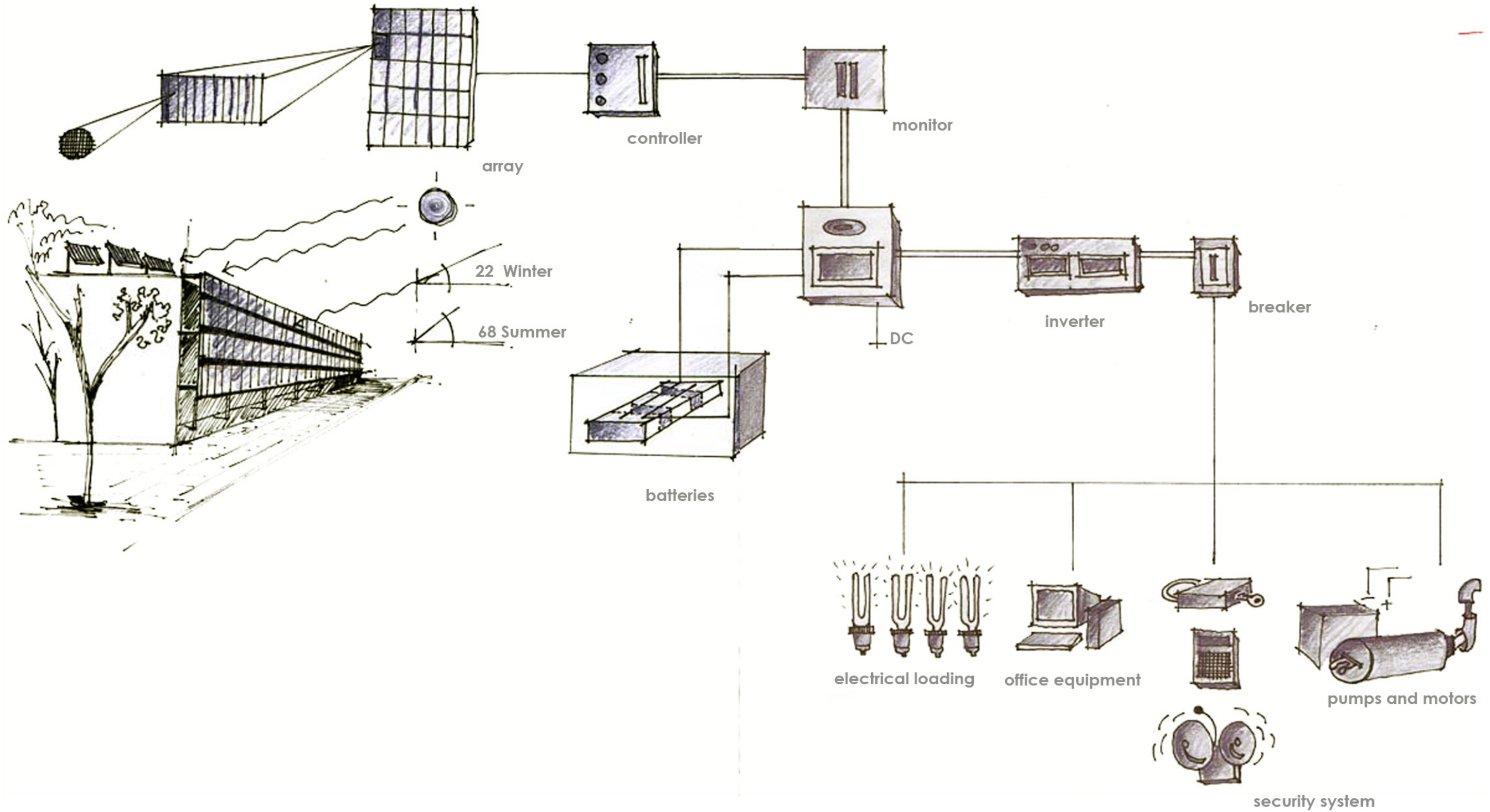
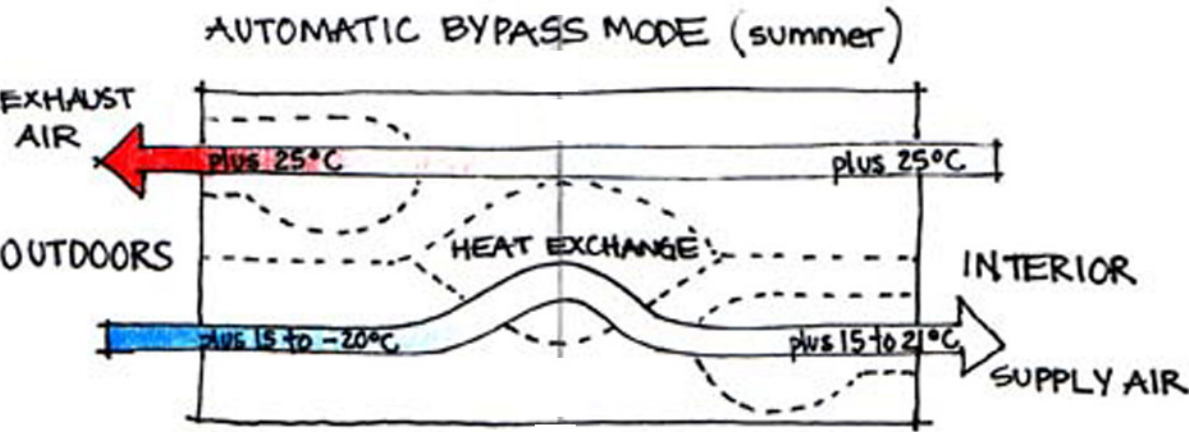
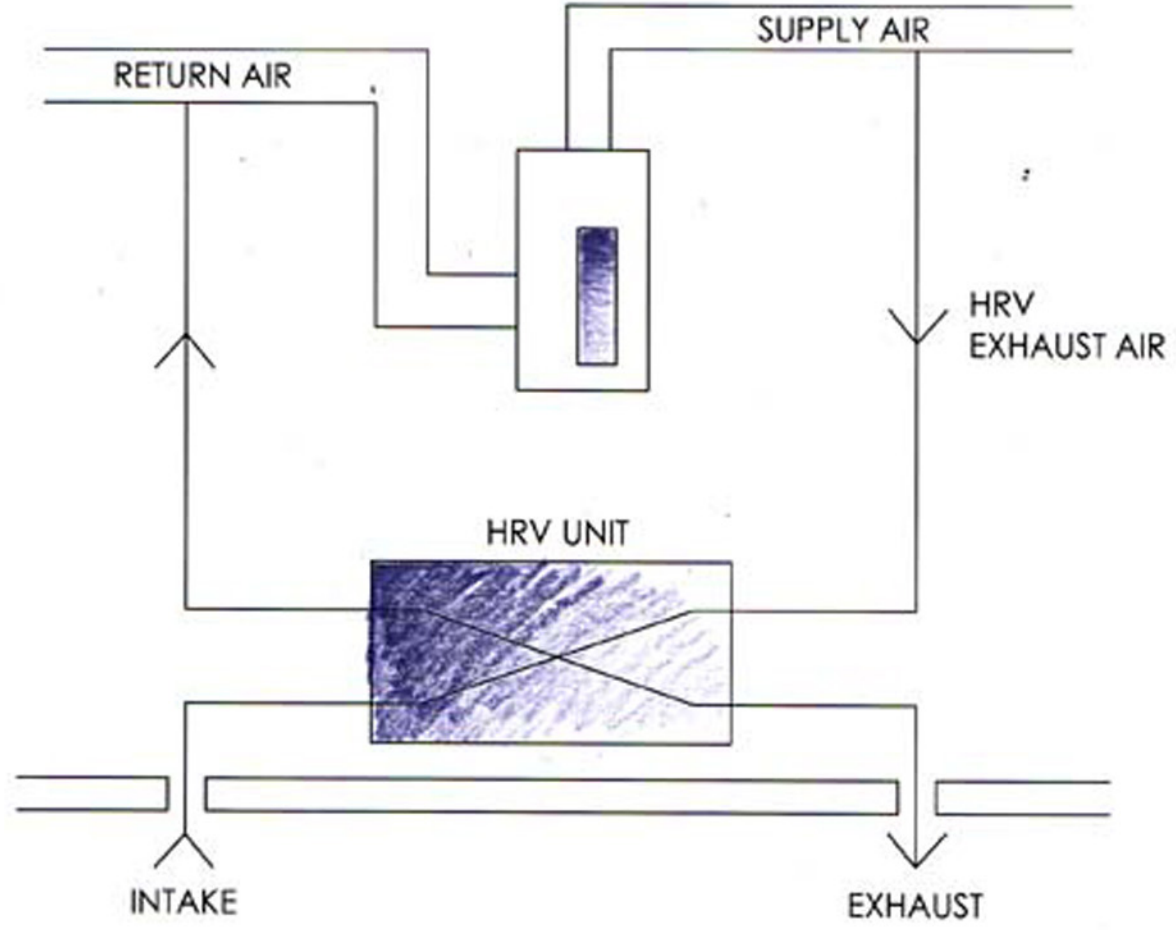
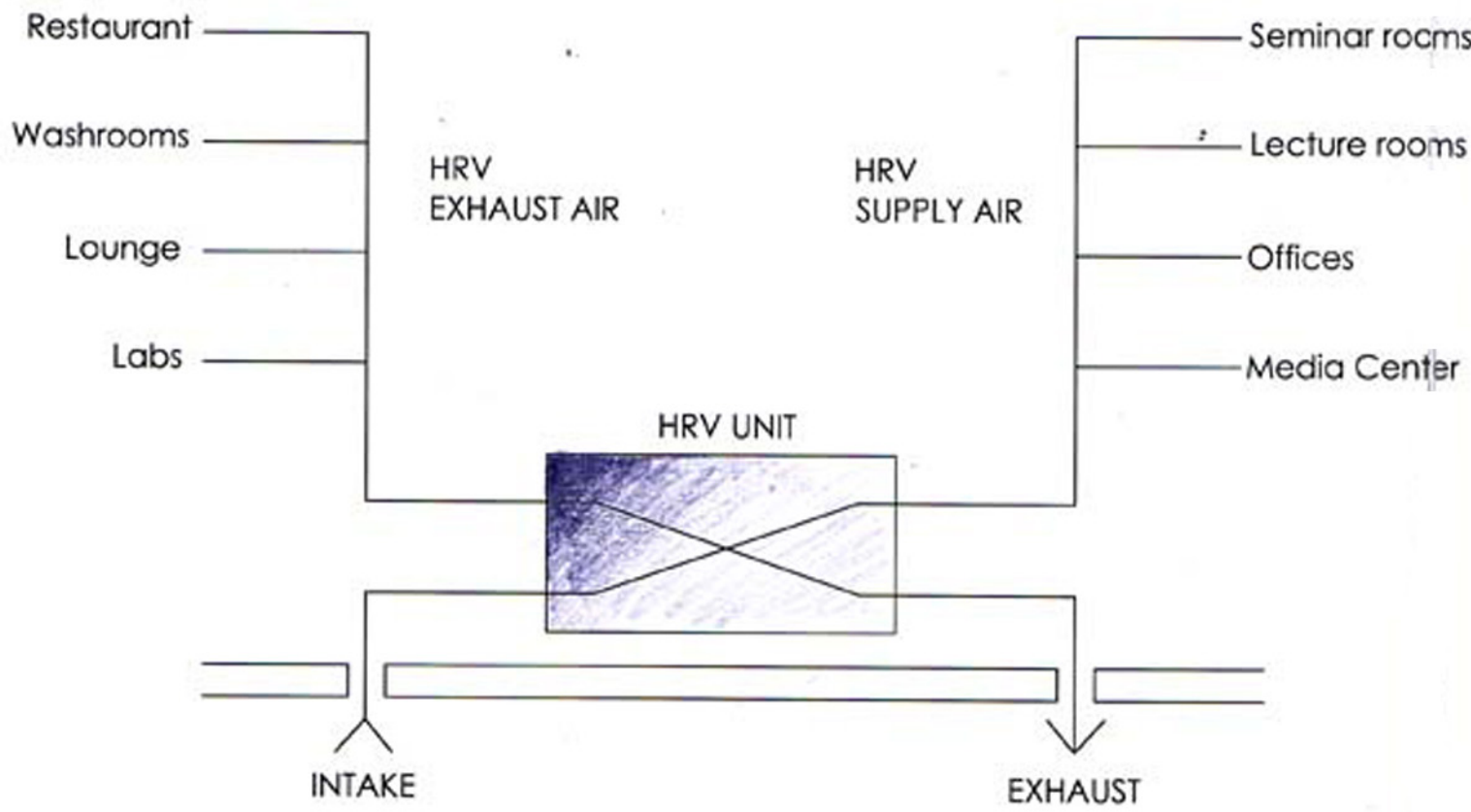
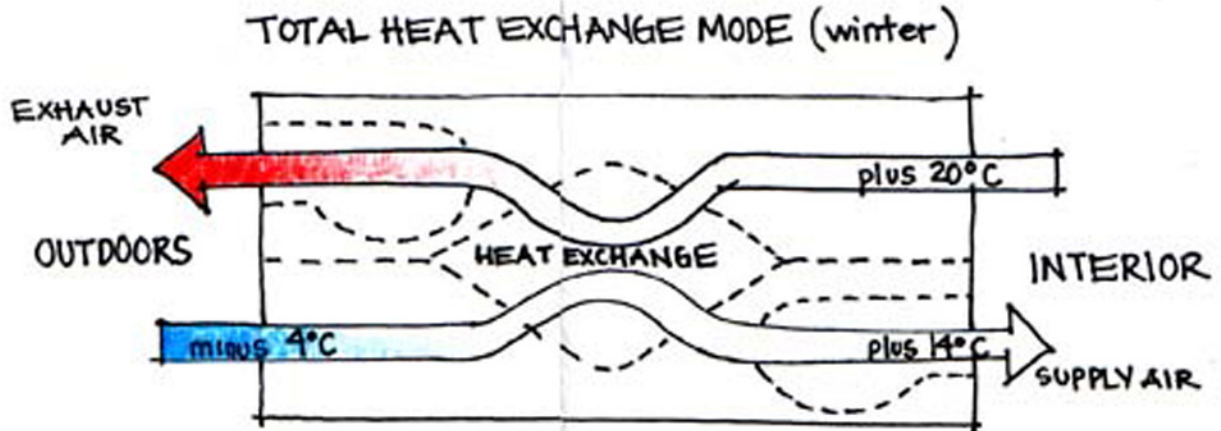


# PHOTOVOLTAIC SYSTEM



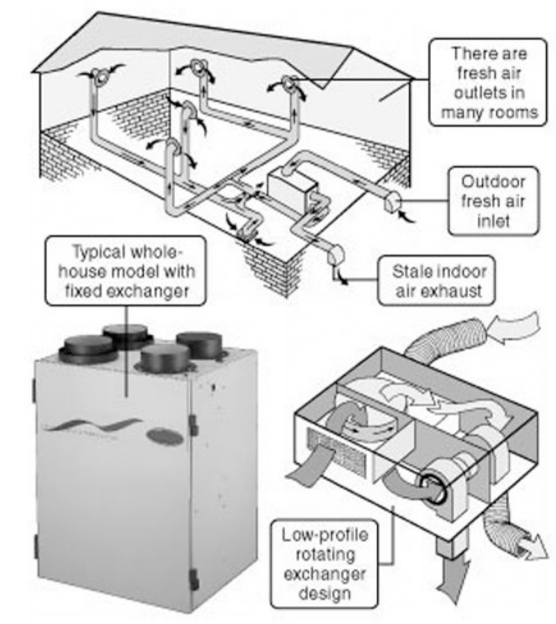
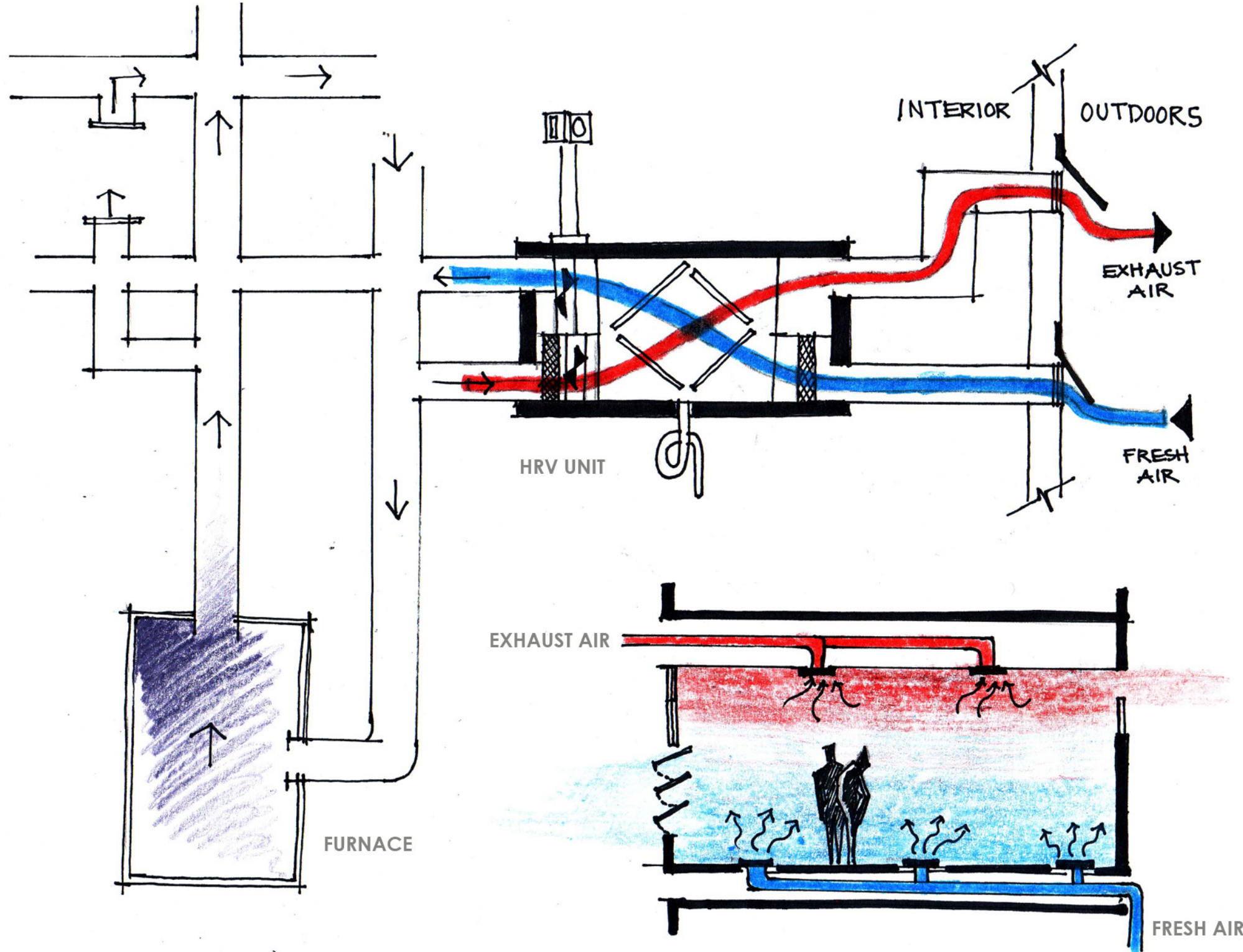
HEAT RECOVERY SYSTEM

\* Simplified cross-furnace (Daikin HRV)



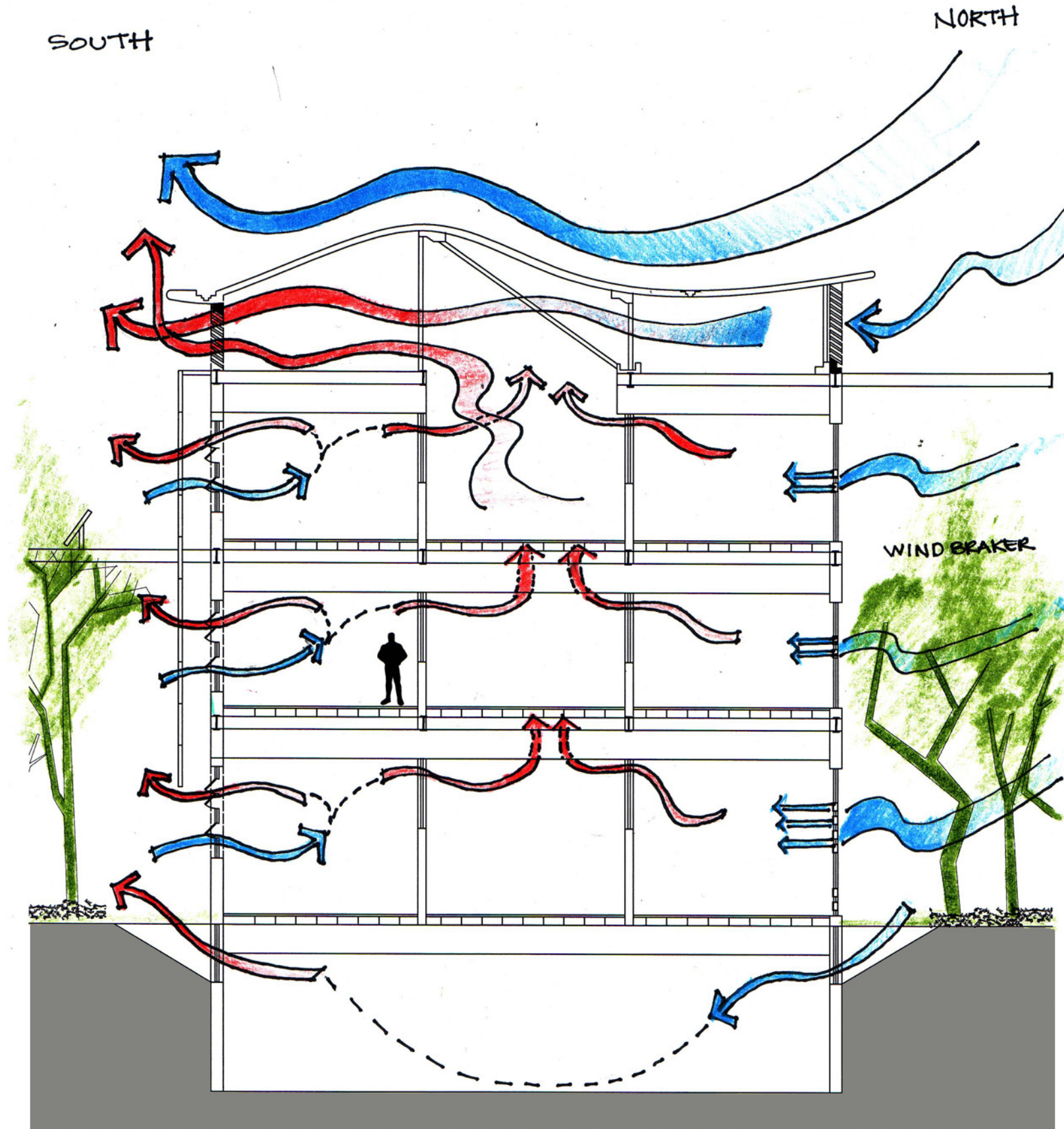
### HEAT RECOVERY SYSTEM

\* Simplified cross-furnace (Daikin HRV)

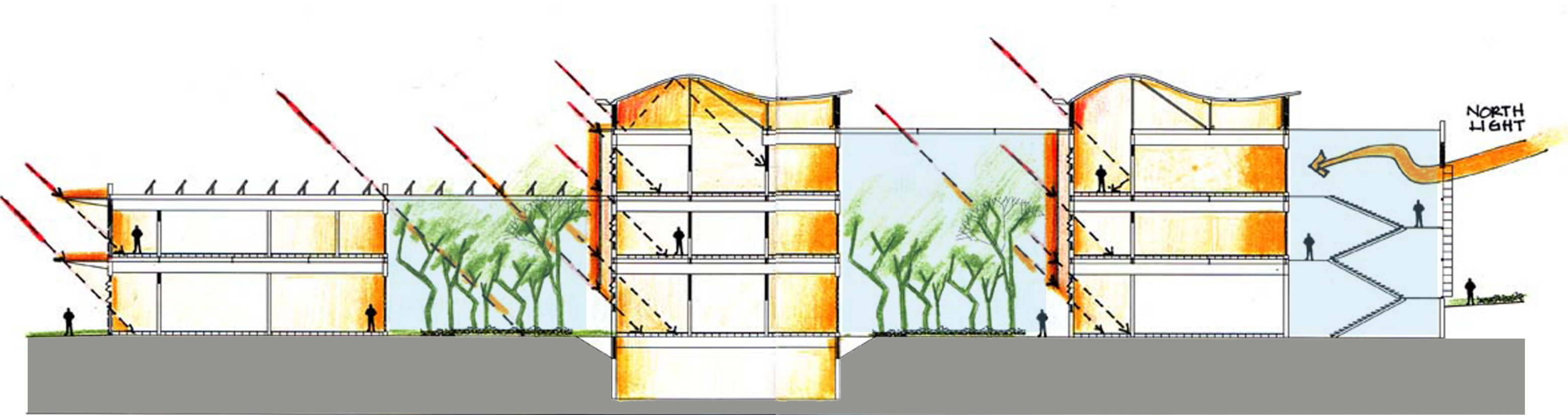


### PASSIVE SYSTEM

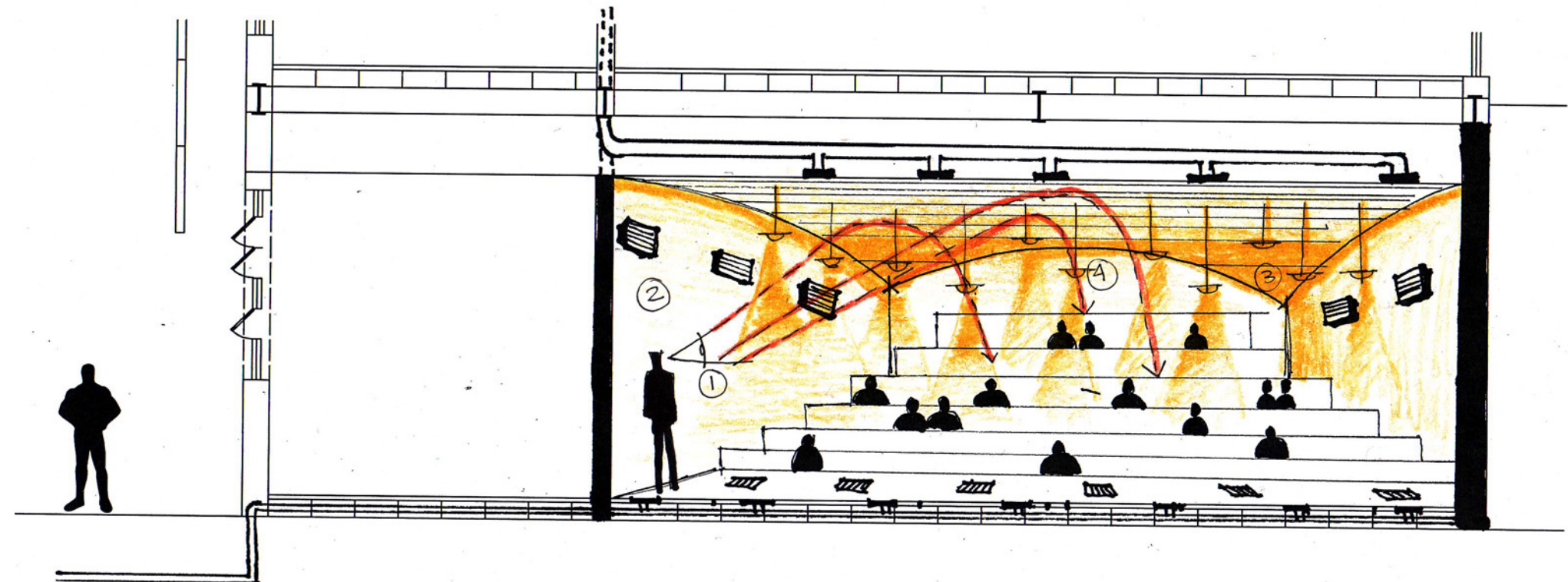
Vents exhaust air through atrium and utilize cooling north breezes



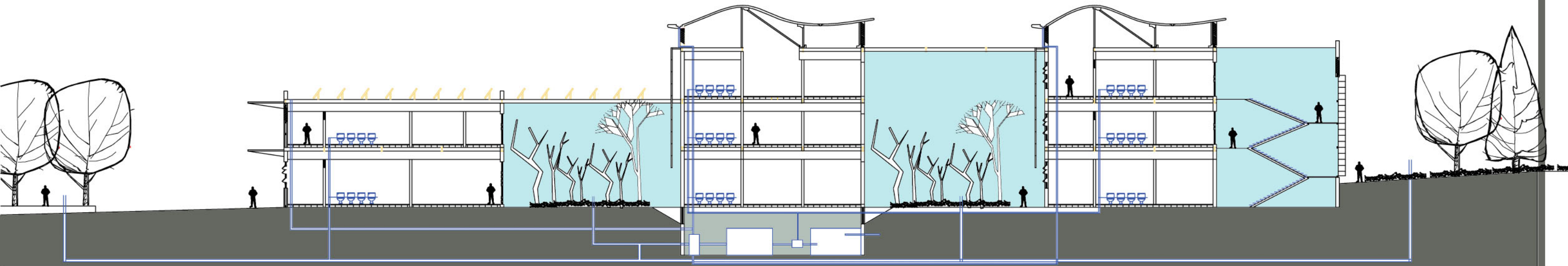
PASSIVE SYSTEM



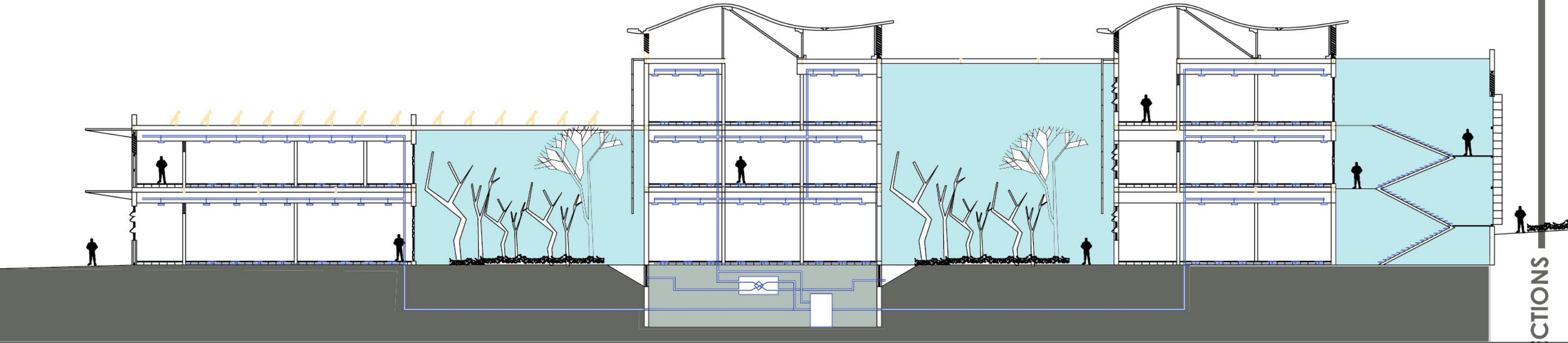
ACOUSTIC AND LIGHT CONDITIONS



Helen Othogile  
Avril Galindo  
Victor Uribe  
Refilwe Mompe  
Romelia Hernandez



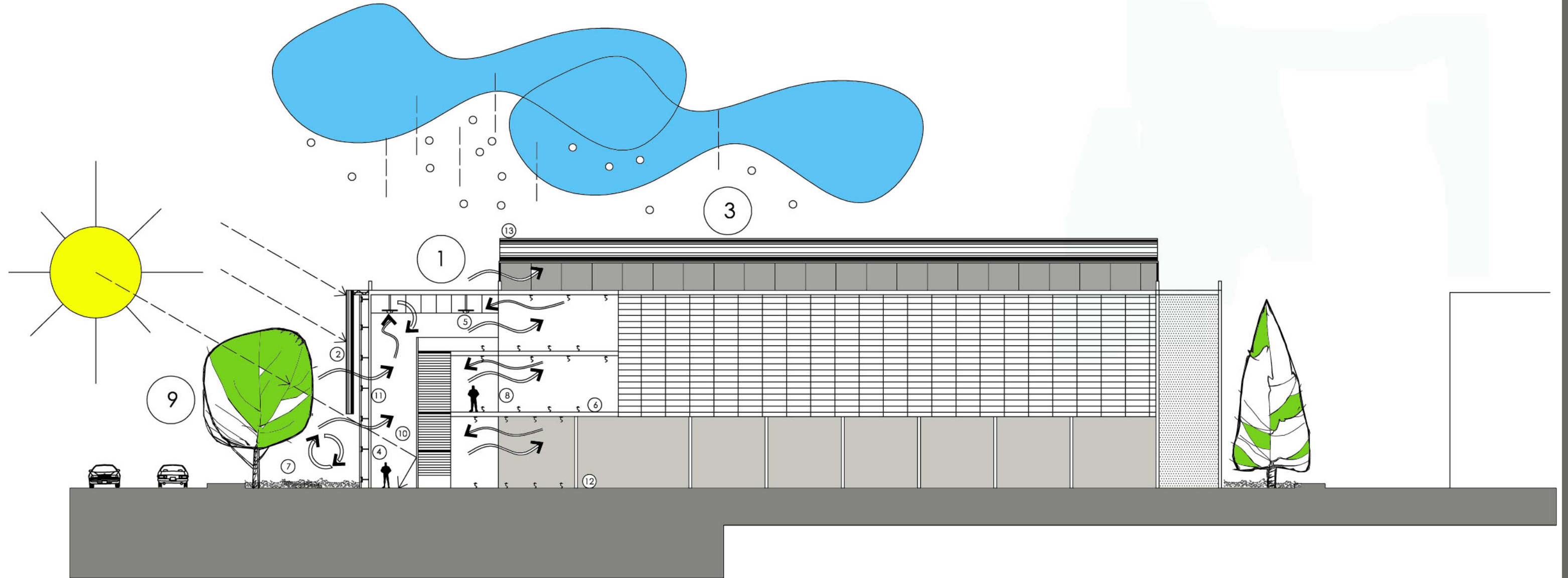
WATER SYSTEM



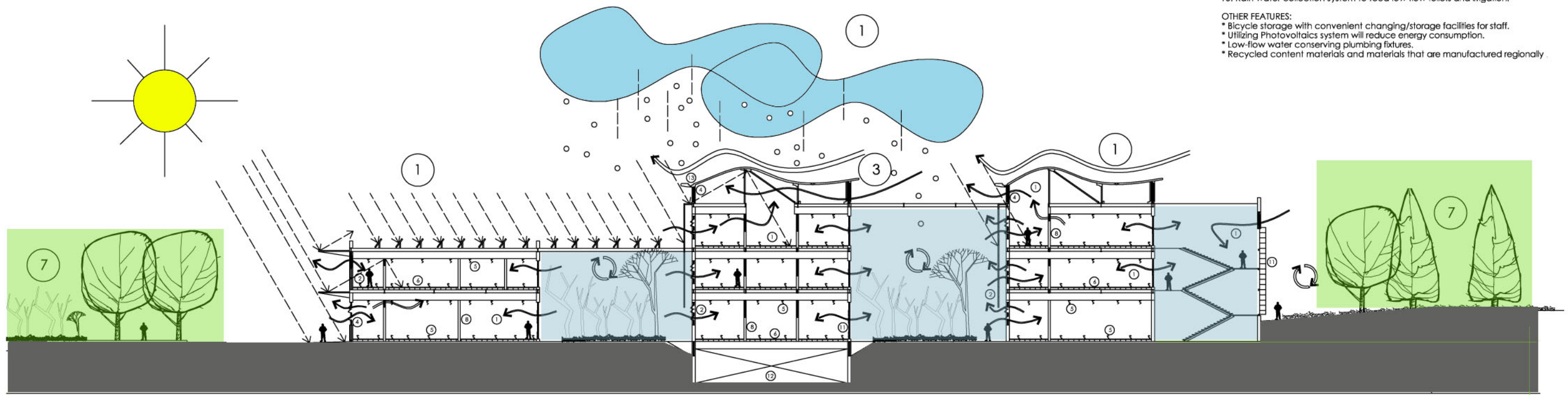
MECHANICAL VENTILATION SYSTEM (HRV)

SCHEMATIC SECTIONS

Helen Othogile  
Avril Galindo  
Victor Uribe  
Refilwe Mompe  
Romelia Hernandez



Helen Othogile  
 Avril Galindo  
 Victor Uribe  
 Refilwe Mompe  
 Romelia Hernandez



1. Vents exhaust air through atrium and utilize cooling nothern breezes
2. Maximizing controlled daylight (windows and louvers) will minimize the use of artificial light
3. Energy star labeled roof reflects radiant heat and drives north-west winds smoothly to the south.
4. Smaller windows and window shades on south and west facade reduces heat gain.
5. High efficiency fans (atrium), HRV system, and underfloor air supply reduce energy consumption and improve indoor air quality.
6. Raised access floor provides technology flexibility, and maintenance.
7. Water efficient landscaping.
8. Low volatile organic compound emitting materials such as adhesives, carpets and paints.
9. Trees block hot western sun, reduce heat gain and improve air quality.
10. Lobby is open and bright.
11. High performance, low emissivity glazing reduces heat gain. (low-e glass)
12. Concrete will contain high volume fly ash (a recycled industrial by-product).
13. Rain water collection system to feed low-flow toilets and irrigation.

- OTHER FEATURES:
- \* Bicycle storage with convenient changing/storage facilities for staff.
  - \* Utilizing Photovoltaics system will reduce energy consumption.
  - \* Low-flow water conserving plumbing fixtures.
  - \* Recycled content materials and materials that are manufactured regionally.





Materials for this project were selected based on the low impact:

- N o n toxic
- R ecycled and recyclable
- R enewable
- L o c a l
- S t a n d a r d sizes, modular
- C e r t i f i e d wood
- D u r a b l e and long lasting

### **Concrete**

Cement production is a major resource depleting and energy consuming process. There are also health risks in its manufacture and use. Improvements can be engineered by reducing the Portland cement element by the use of admixtures, by using industrial by-products, and by producing new concrete made from recycled concrete aggregates. In terms of the total energy equation of a building, concrete has high thermal mass and hence is beneficial when used in conjunction with passive solar design. In situ concrete is inherently inflexible and pre-cast concrete offers greater potential for recycling of structural members and framing elements.

**Wood**

Is the best insulator against heat and cold, which makes it the most energy-efficient material that can help keep home energy bills in check. Is the most affordable building material. The economy of wood construction is one of the many reasons why wood-frame construction has remained the preferred method for construction. Wood is easy to use and widely available. Its practicality and workability make construction simple and efficient for use in commercial applications, including multi-story projects. As the world's only renewable building material, wood can not only be recycled, but regenerated as well. What's more, trees provide benefits to the environment while they grow, taking in carbon dioxide and releasing oxygen.

**Insulation**

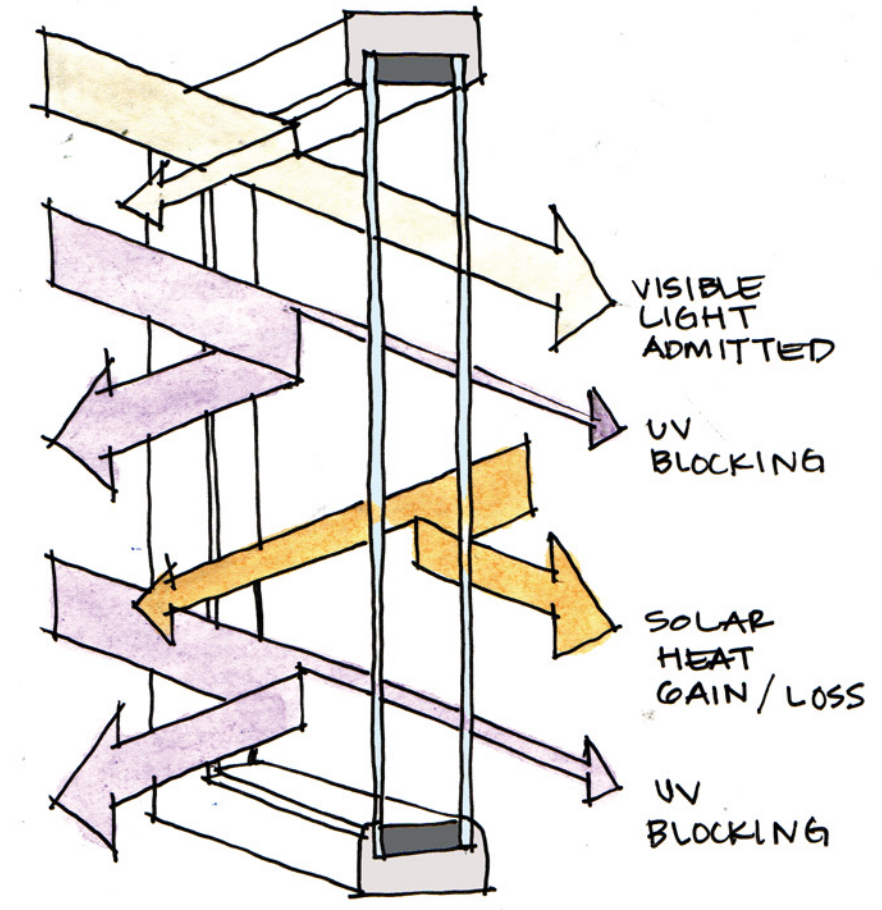
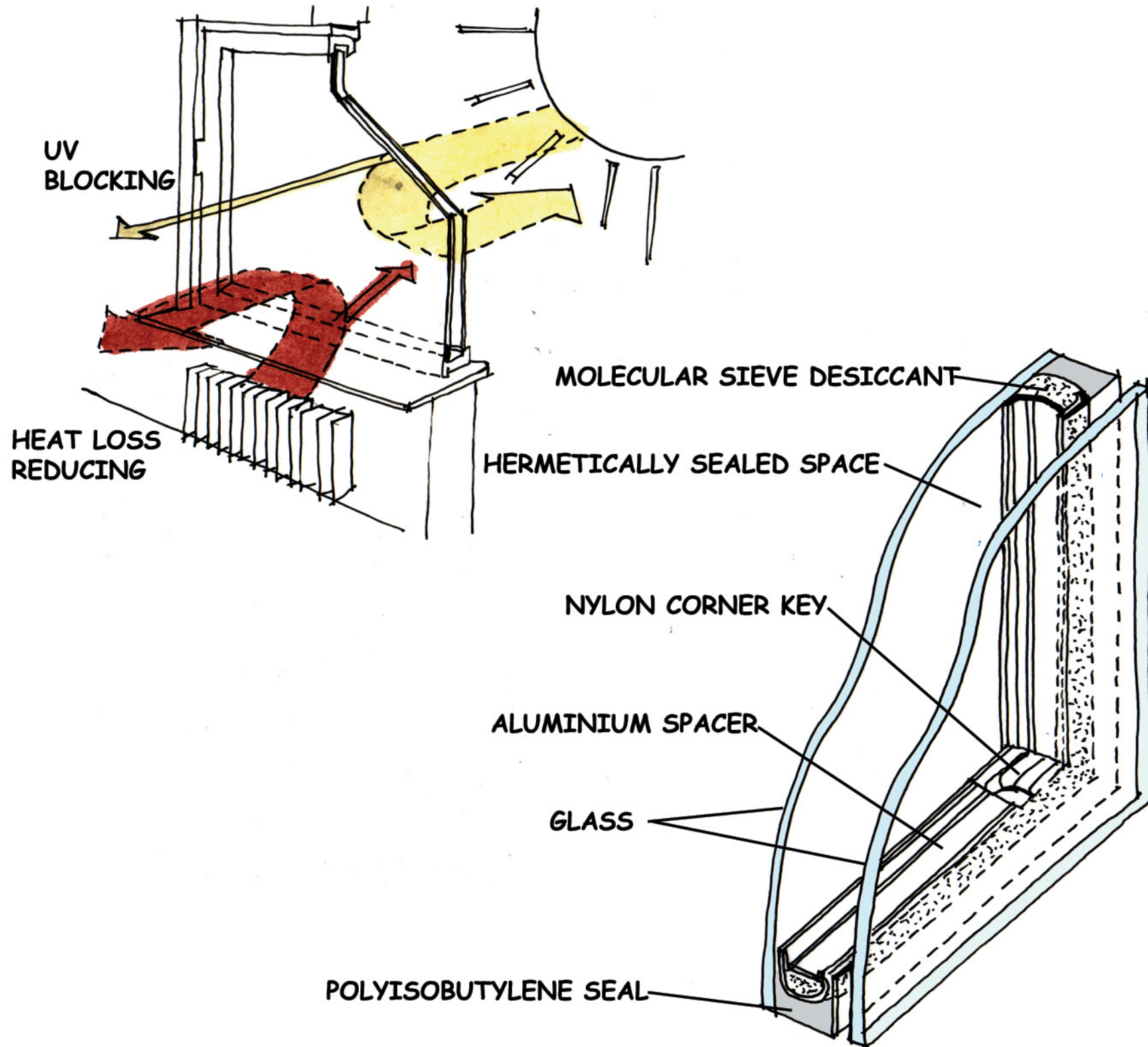
Well-insulated buildings conserve energy and are more comfortable. However, most insulation products are petroleum-based and some use CFCs or HCFCs in their manufacture. Man-made mineral fibres (such as glass fibre quilt insulation) are considered to be "green" but pose problems during installation with the inhalation of airborne fibres. Insulation a product poorly specifies can lead to Sick Building Syndrome but generally the energy saving benefits outweigh the disadvantages of insulation. Where possible use natural insulating materials (such as cork) or those made from recycled waste paper.

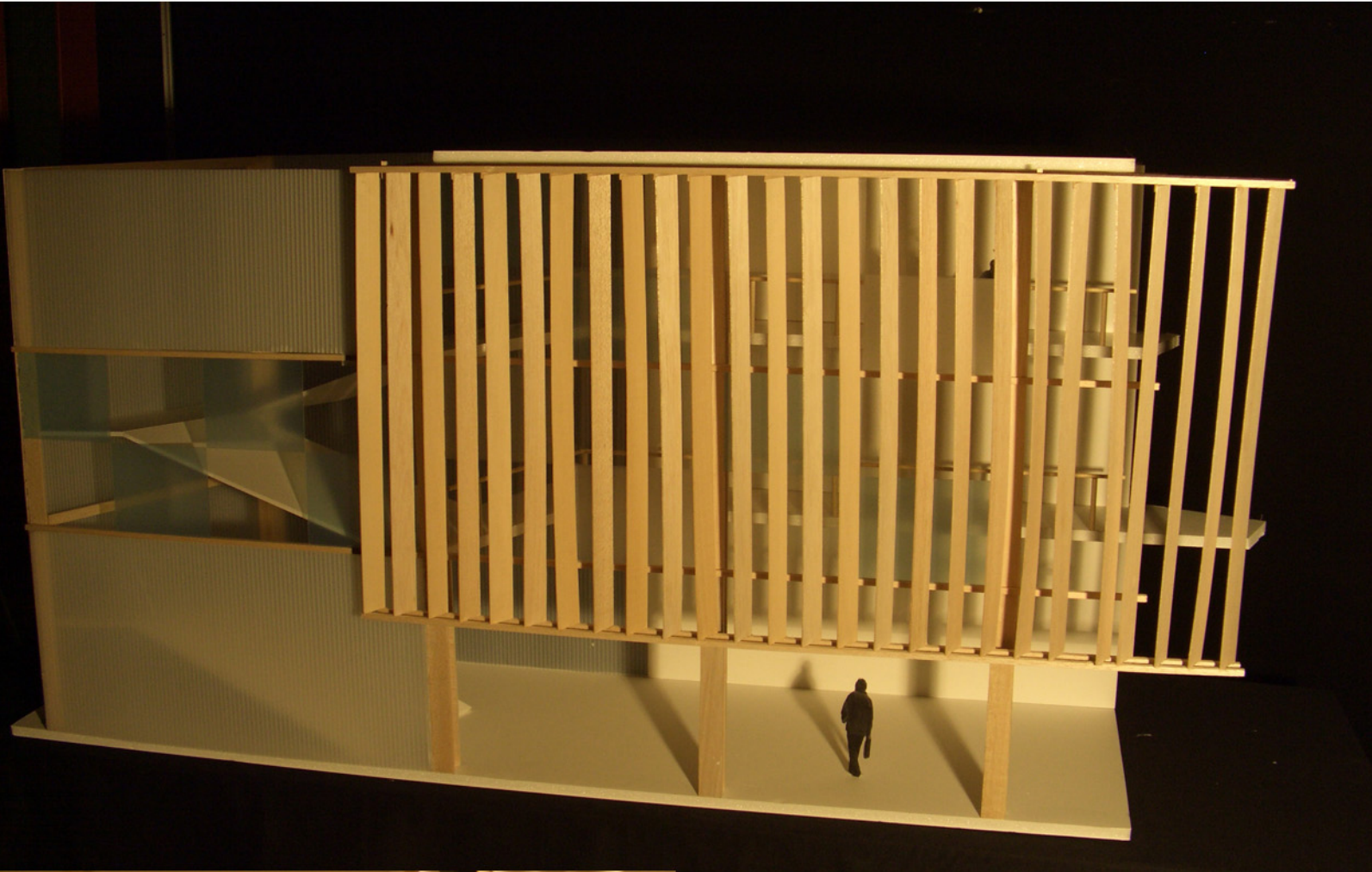
**Paint**

Many paints contain damaging environmental materials such as organic solvents, chromium, lead and cadmium compounds (the latter often ending as heavy metals in rivers). Although lead-free paints are readily available, they are often encountered in rehabilitation work where the removal of old lead paint poses health threats. Water-based paints are preferable. Synthetic resin paints can cause skin and respiratory difficulties. Good design can eliminate the use of paints to a degree, and many natural finishes are less harmful than painted finishes. The disposal of paints poses environmental problems.

**Floor finishes**

These are either derived from renewable sources such as linoleum, cork, wood block or timber boarded floors, or from non-renewable sources such as plastic-based synthetic fibre finishes, ceramics tiles or non-wool carpeted finishes. Consider the energy used in manufacture, atmospheric pollution at the factory, solvent release in the building. Ask whether floor finishes are required or whether the structural floor can also be the decorative finish.



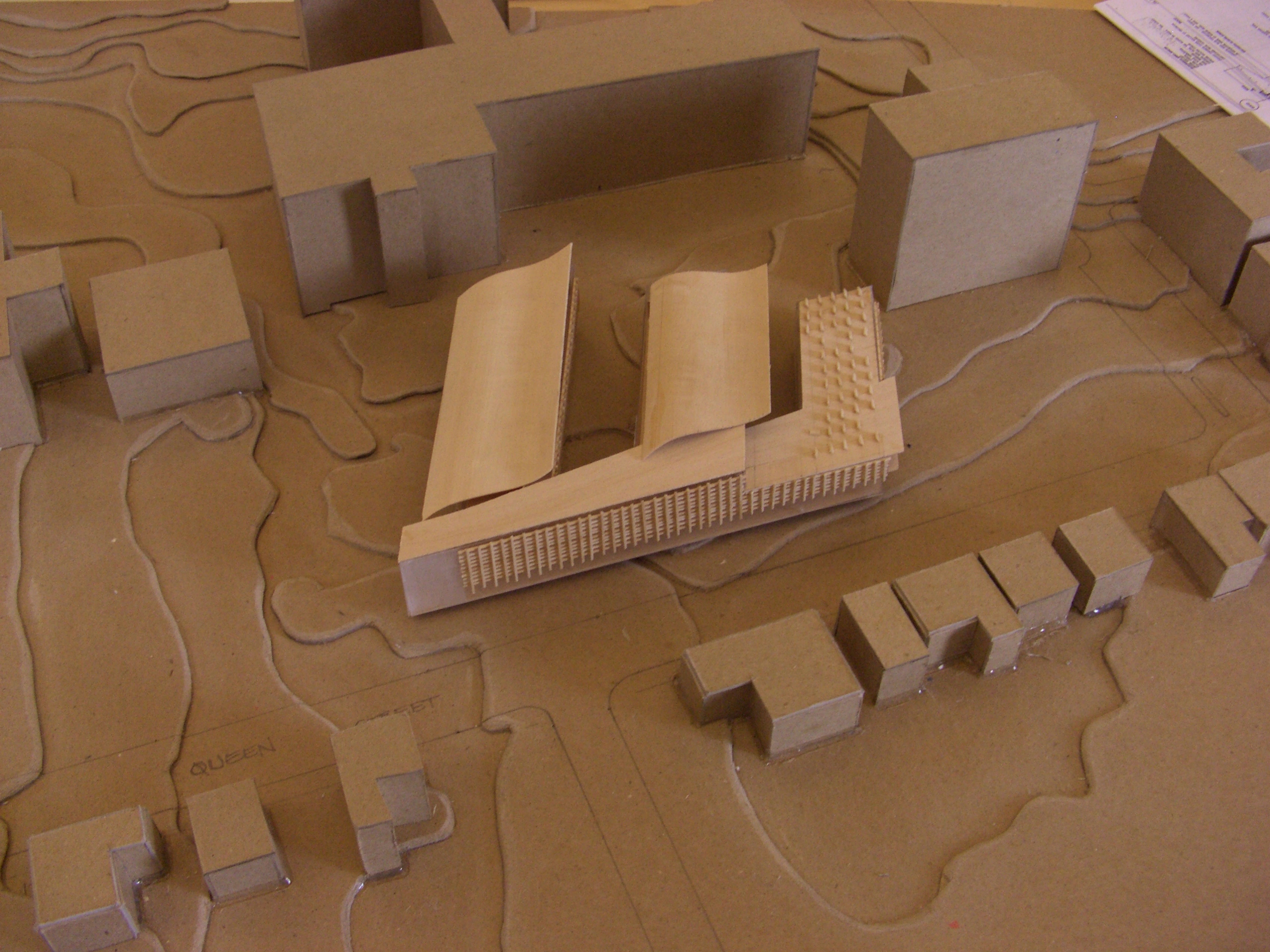


DAY



NIGHT





QUEEN

SET

