COUNCIL HOUSE 2 DesignInc - Melbourne, Australia

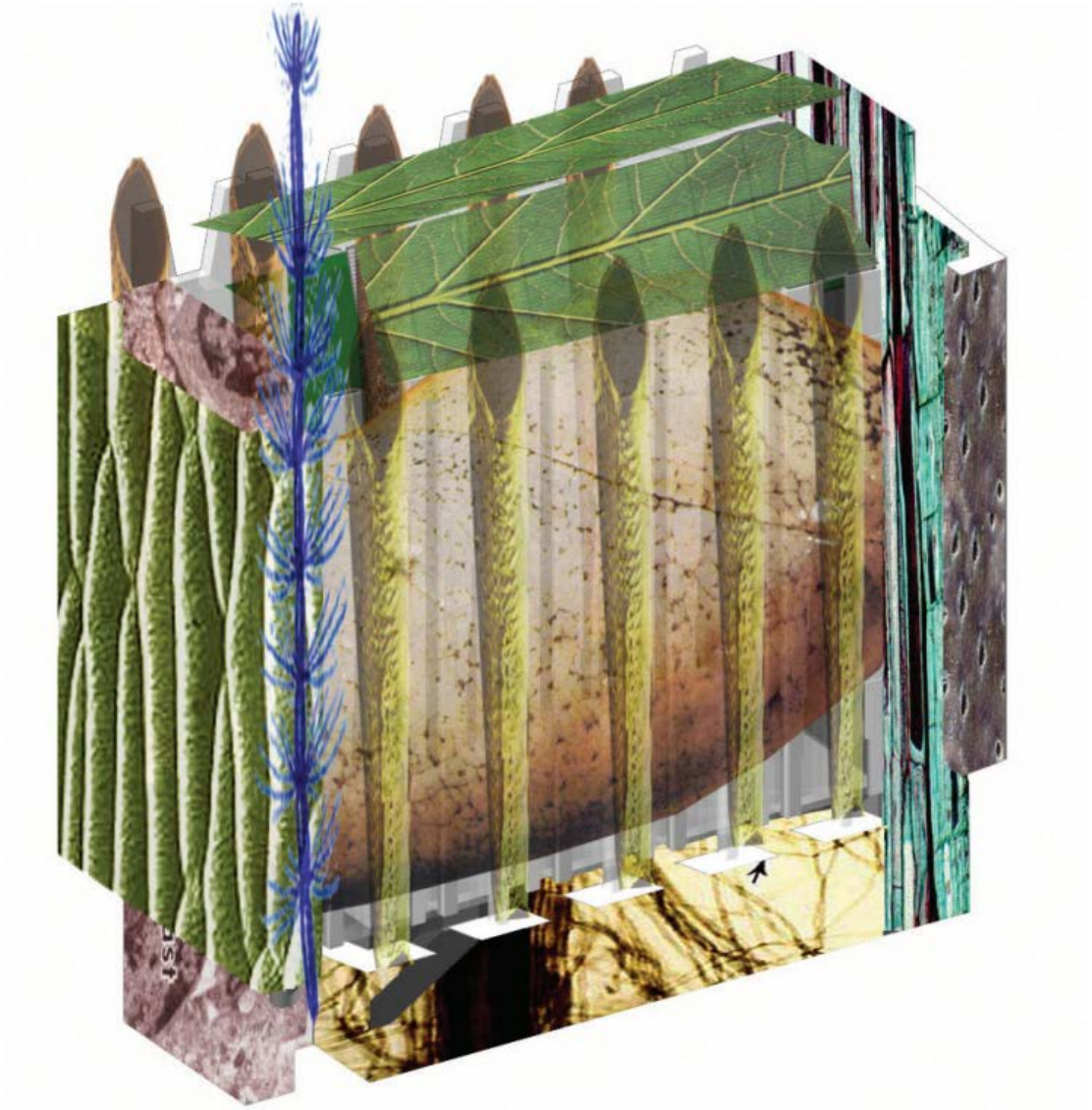
JOSE CUELLAR CASE STUDY

ARCH 510 - PROFESSOR NANCY YEN-WEN CHENG FALL 2017

Design Approach

The Council House 2 aims to promote sustainability in design.

- address current issues in the built form
- incorporate biological processes
- provide a functioning environment
- achieve a financial success



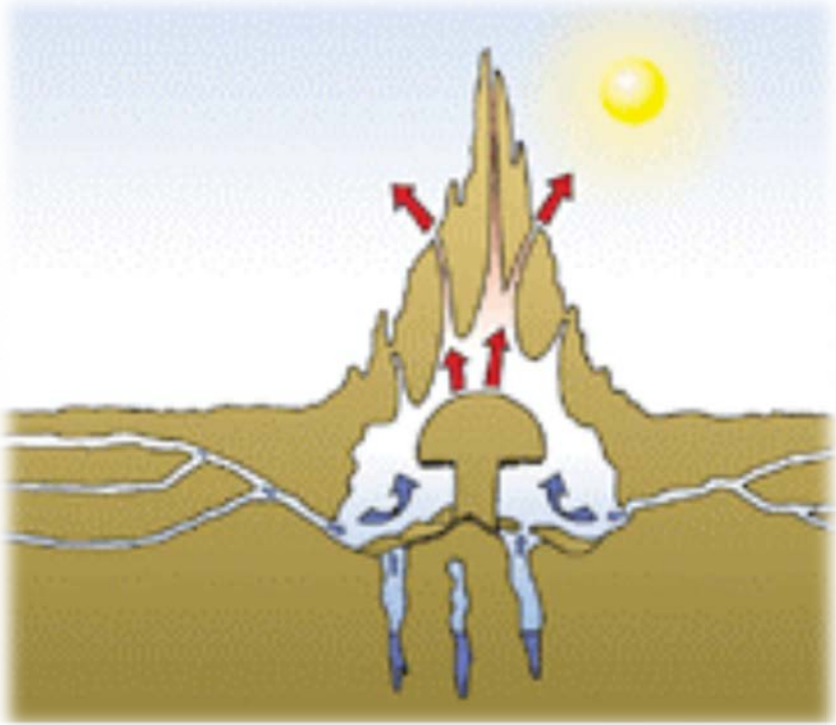
Biomimicry : Process

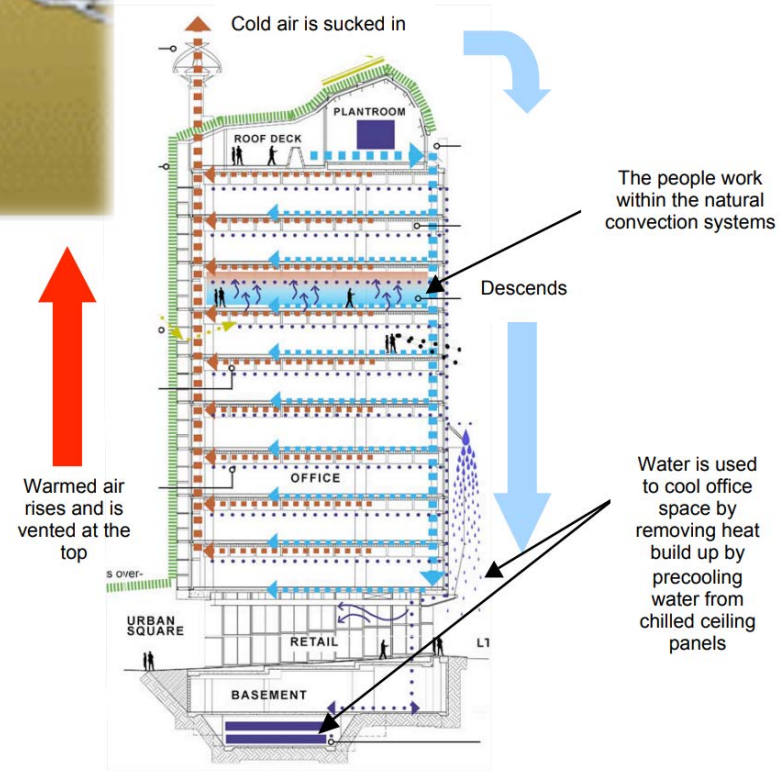
Termite Mounds

In collaboration with Mike Pearce designer of the Eastgate Center

Use of ventilation to aid in the cooling

- Expelling the hot air from above and introducing cool air from below





>> “About Council House 2.” About Council House 2 - City of Melbourne, www.melbourne.vic.gov.au/building-and-development/sustainable-building/council-house-2/Pages/about-council-house-2.aspx. Accessed 3 Oct. 2017.

Passive Cooling and Ventilation

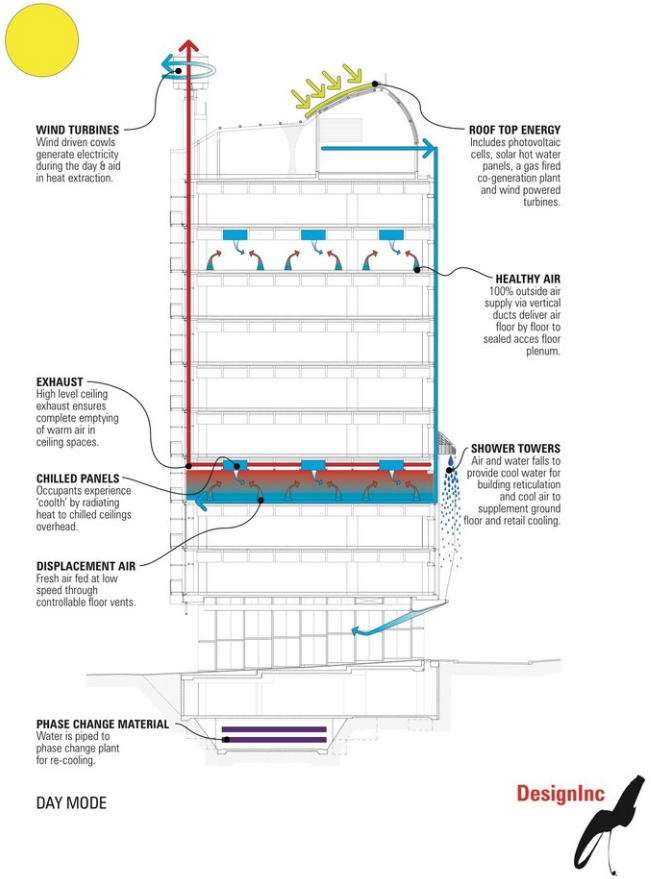
Cooling

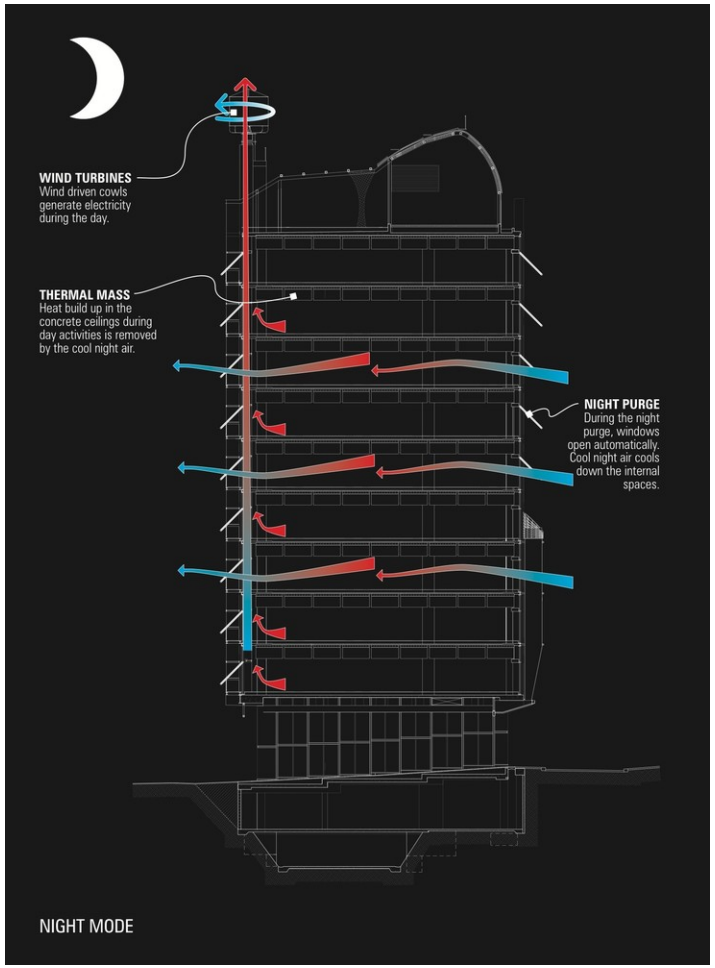
- Concrete ceilings behave like soil in termite mound
- Warmth is purged at night through automatic process

Ventilation

- Builidng circulates new air , rather than reusing the same air like an AC
- Hot air exhaust is used to power turbines to generate more passive energy

>> "CH2 Melbourne City Council House 2 / DesignInc." ArchDaily, 29 June 2013, www.archdaily.com/395131/ch2-melbourne-city-council-house-2-designinc. Accessed 2 Oct. 2017.





Biomimicry : System

DESIGNING THE SKIN

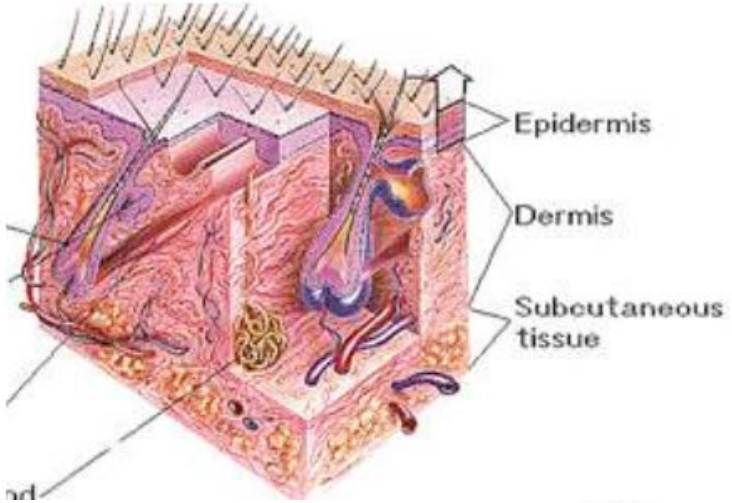
Inspiration from the layers of the skin

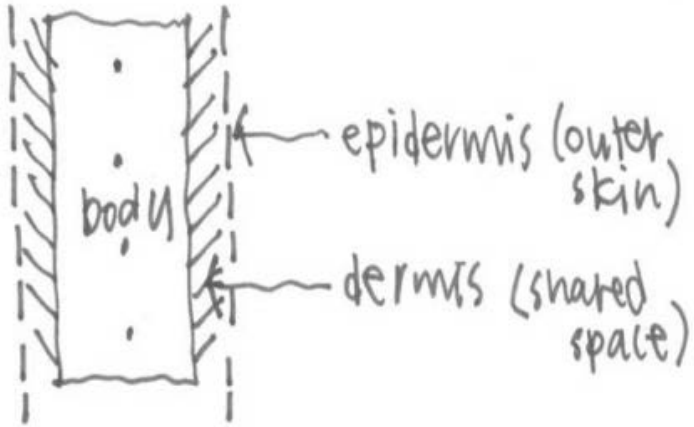
DERMIS – inner layer of skin

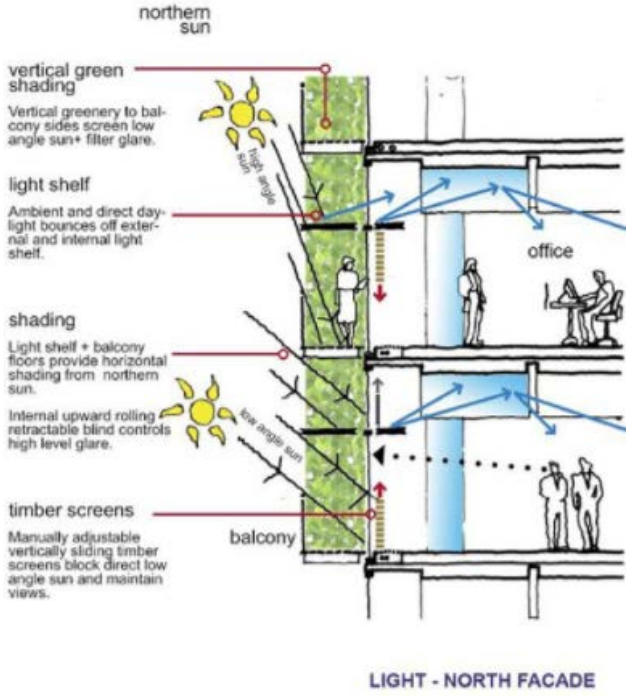
- **Provides a space for several functions to occur**
  - mechanical systems
  - vertical circulation
  - balconies

EPIDERMIS – outer layer of skin

- **An exterior façade that creates a habitable microclimate**
  - Façade responds to sun location by adjusting and moving with it







LIGHT - NORTH FACADE

>> Council House 2 Building. Melbourne, www.mickpearce.com/CH2.html. Accessed 3 Oct. 2017.

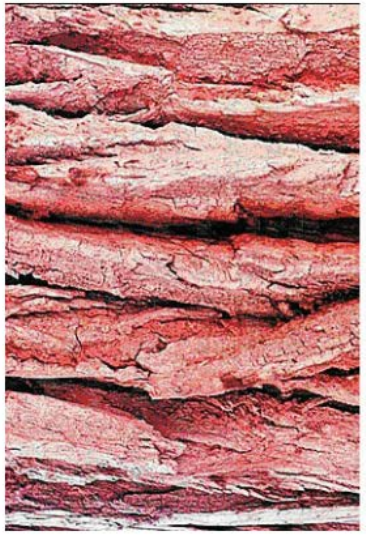
Biomimicry : Form

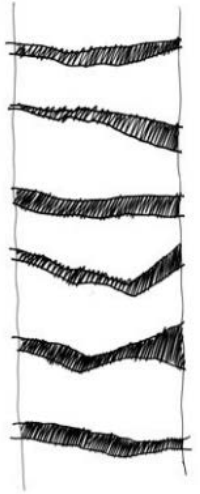
Taking Inspiration from Nature

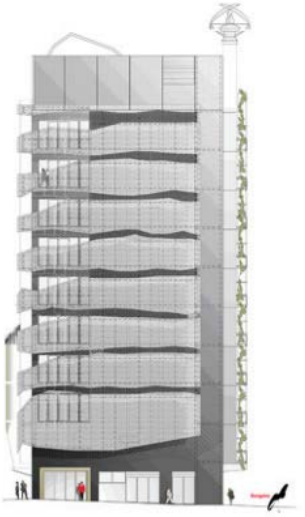
Looking at Trees for inspiration
- Tree bark protects and contains the processes of a tree

CH2 Façade
- Becomes a protective screen
- Houses service core and toilets

Design is modeled after the form of the tree bark







>> "CH2." ArchitectureAU, architectureau.com/articles/ch2/. Accessed 2 Oct. 2017.

Reflection

LEARNING OBJECTIVE:

This experiment in trying incorporate biomimetic strategies allowed me to understand Biomimicry and Sustainability. I developed abilities in research and analysis, as well as better critical understanding of the topic.

I succeeded in finding a case study that addressed climatological issues and resolved them through design and would like to further refine my ability to design using sustainable and biological techniques.

From looking at architectural and engineering examples , and analyzing the design process and goals I learned that these aspects of the approach were useful.