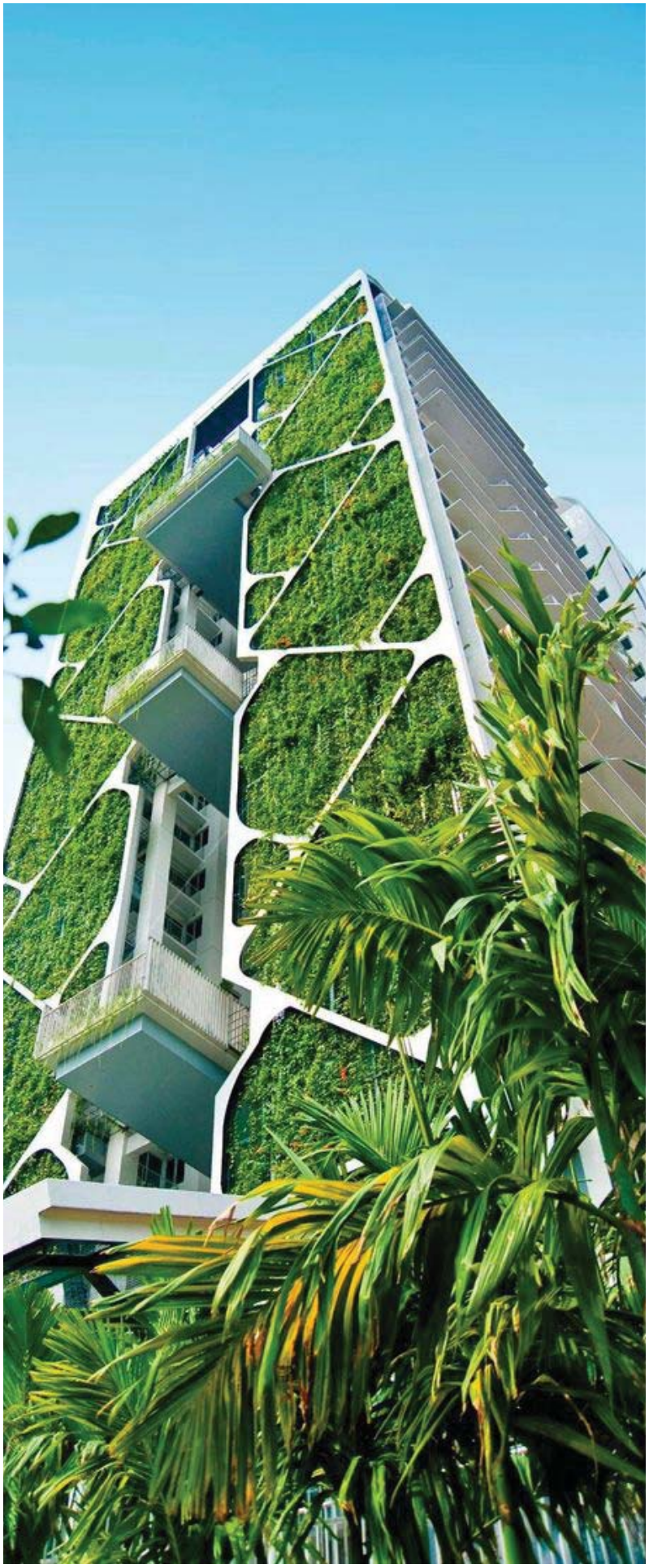
Katherine Lanski



TREE HOUSE

Architect: ADDP Architects
Year: 2012
Located in Singapore, between the Bukit Timah Nature Reserve and the Upper Pierce Reservoir. Singapore's climate is considered a tropical rain forest. It has a uniform temperature and pressure, no distinct seasons, and has high humidity levels. Its average temperature falls between 25 and 31 degrees Celsius, with up to 9 hours of sunshine.

The design of the Tree House contains four towers, each 24 stories high, encased in green facades that filter pollutants and carbon dioxide, reducing the buildings carbon footprint. The natural insulation of the green facades reduce the building's carbon footprint through the filtration of pollutants and carbon dioxide. It also removes greenhouse gas emissions to minimize heat absorption and lower the energy needed to cool indoor spaces. Green-tinted laminated windows use heat reducing technology keep homes cool. Lifts with variable voltage and variable frequency motor drives, sleep mode programming and motion sensored lighting also reduce the amount of energy consumed by this building.

Solar: Because the buildings stand alone, direct heat radiation could be a problem for this building but with the high tech windows and green facade, heat radiation is reduced within the building. The internal alcoves provide shading for windows, preventing direct solar radiation, as well.
Convection: Green facades provide a barrier between the exterior heat/humidity and interior spaces.
Evaporation: The green facades absorb water, (hopefully) pulling it away from the building.

Some downfalls to this building is that, although the facades help with heat radiation, it could also cause moisture in the building and heat radiation may still be a problem, due to the site, surroundings, and height of the building. I would suggest creating a larger cavity between the green facade and the building, as well as potentially adding more green facades to protect other faces of the building.