KMD & STEVENS

San Francisco Public Utilities Commission Headquarters

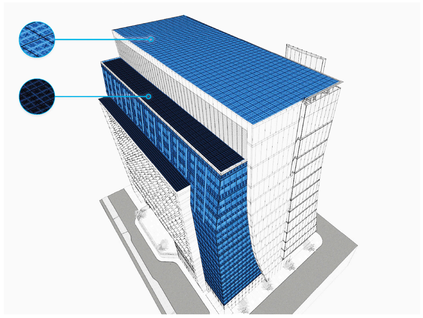
San Francisco, CA Date: June 2012 Size: 277,500 s.f. - 13 stories Climate Zone: 3 Cost (excluding land): $146.5 Million

SUSTAINABLE STRATEGIES:

1. Photovoltaics (PV cells)
2. Wind Turbine Power
3. Water Recyling Plant
4. Grey Water Reuse
5. Maximized, High Performance Glazing
6. Enhanced Ventilation and Air Circulation

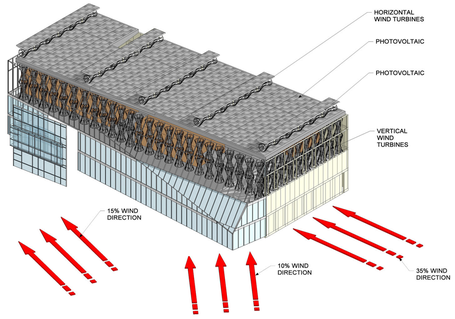
PV Cells:

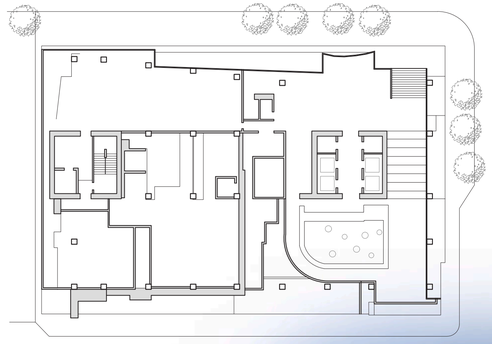
- 691 panels on roof and some PV cells are embedded in glass itself.
- 164-KW expected to fulfill 7% of energy need.

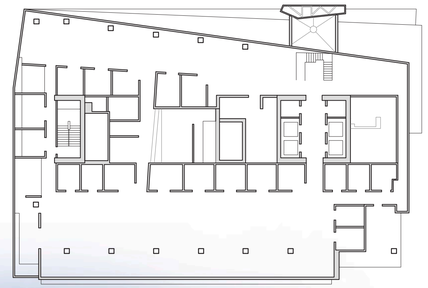


Wind Turbines:

- integrated into the building skin on the north facade.
- Expected to generate 4.8 KW per hour.

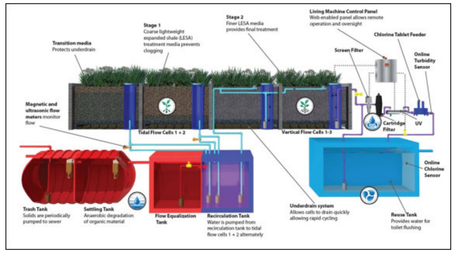






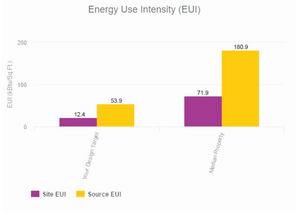
Living Machine:

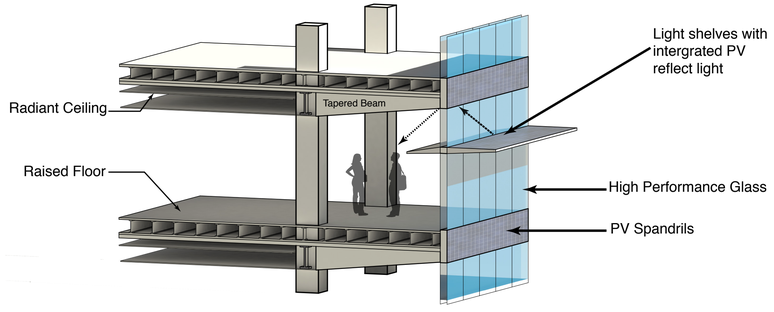
- System to treat and reuse wastewater
- Small footprint
- Treatment cell is incorporated into the lower lobby of the building.
- The remaining wetland cells are incorporated into the city sidewalk on Polk and Golden Gate Streets.
- Materials and plantings for both interior and exterior wetland cells integrated with site and building aesthetic
- Treats all waste water generated by building's employees and produces water to flush toilets and for off-site irrigation.
- Treats 5000 gallons of waste water per day.
- Saves 750,000 gallons per year.
- 70% reduced water use in the building and 40% reduced potable water use in the building.
- Provides 900,000 gallons per year for uses off-site.



OTHER STRATEGIES:

- HORIZONTAL FINS: on south facade to block direct sinlight and deflect it to the ceiling.
- DOUBLE GLAZED
- RAISED FLOOR: to supply air at floor level for more efficient cooling.





METRICS:

- Total pEUI: 41 kBTU/sf/yr
- Net pEUI: 38 kBTU/sf/yr

PERFORMANCE:

Unfortunatelly, the building did not perform as expected.

- Wind turbines failed after a year and did not produce as much energy as predicted.
- PV inverter room was too small and overheated easily, hence a cooling system needed to be installed.
- Water Treatement Facility released noxious fumes, hence roof vents needed to be extended and an odor control unit was installed.

MRVDV

Sky Village

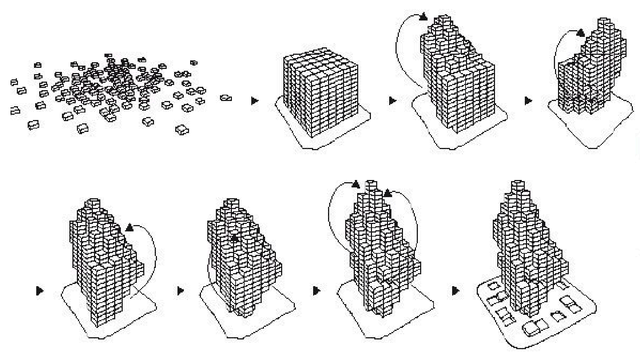
Rødovre, Denmark

CONCEPT:

- A new approach for designing a mixed-use tower
- 3-core concrete structure with steel framing cantilevering off
- Offers a variety of rooftop garden options
- Based on a 7.8x7.8 meter grid which conforms to parking, housing and office module

SUSTAINABLE STRATEGIES:

- Cube-design feature allows for many different configurations depending on specific climate and orientation
- Greywater recycling
- 40% recycled concrete
- Pixel design allows for more efficient daylighting and shading where needed



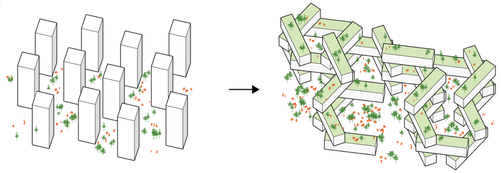
OMA

The Interlace

Singapore

CONCEPT:

"An expansive interconnected network of living and communal spaces integrated with the natural environment" which promotes social interaction and respond to economic need for affordable housing.



SUSTAINABLE STRATEGIES:

- More green area than the unbuilt site.
- Evapourative Cooling through strategically positioning water bodies.
- Natural Ventilation and Daylight even to subbterranean level.
- Economic efficiency through the use of common cores attaching multiple blocks for reducing circulation space.
- Suffiecient Daylight in units.
- Comfortable outdoor conditions by thethrough utilizing the shadowed courtyards created but the staking of blocks.
- Solar Panels.