Passive Design
1. Natural ventilation
2. External blinds automated control with solar sensors
3. Improved IE value for glazing
4. Daylight sensor lighting control
5. Implement Passive House Standard envelopes
6. Coat roof [High CT]
7. Improved tightness

Active Design
1. Occupant lighting sensor
2. Air-side heat recovery system
3. Change season temperatures
4. Earth tube system

Resilience Features
20. Base isolator
21. Fire Venture Damper
22. Fire Resistant Ceiling & Exterior Wall
23. Fire Resistant Internal Wall
24. Fire-Rated insulating glazing

Energy Savings & Resilience Strategies
- Naturally conditioned: Hybrid ventilation system allows the occupants to utilize natural ventilation with operable windows to meet thermal comfort. Connecting & permeable design of both indoor and outdoor spaces also provide access to breezes.
- Daylighting: Combined with daylight sensors and automated blinds, the benefits of daylighting is optimized for the occupants while reducing glare.
- Passive House Standard Building Envelope: High degree of insulation reduces heat loss during winter and reduce heat gains during summer. High performance glazing also ensure comfortable and stable interior space temperature.
- Gym power generator: Energy is harnessed from activities performed in the gym.
- Base isolators: Superstructure is isolated from the foundation to reduce building displacement under seismic activities.
- Fire resistant internal wall: Drywall pre-fabricated with geopolymers technology and natural palm fiber provide excellent fire-resistance, acoustic and thermal insulation.
- Water-based Li-ion Battery: The source of backup power for 14 days, compact in size, safe, robust, produced and recycled by environmentally friendly means.

Model Description
The Net-Zero new City Hall has been designed to manifest the beauty and cruciulity of sustainability and resiliency amid the age of climate change and uncertainties, while being a welcoming and open communal space for the people of San Diego.

A 3-storey atrium provides ample space at the heart of the City Hall where green walls, skylight and natural breezes can be discovered. A spacious semi-outdoor area can be found on the 4th floor, where occupants can perform physical fitness activities overlooking the streets of San Diego.