



# New Genesis Apartments

452 South Main Street • Los Angeles, CA 90013



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## LEED for Homes

### *What is LEED?*

The U.S. Green Building Council (USGBC) is a non-profit organization that advocates for sustainable or “green” design that minimizes impacts on the natural environment. It is primarily interested in improving the energy and cost efficiency of the built environment. The USGBC has developed the LEED (Leadership in Energy and Environmental Design) rating and certification systems, which encourage designers to employ sustainable strategies in their work to meet desired environmental standards.

### *What is LEED for Homes?*

LEED for Homes is the certification system for new residential projects. It evaluates the building and developer’s performance in the following 8 categories:

- Innovation & Design Process
- Location & Linkages
- Sustainable Sites
- Water Efficiency
- Energy & Atmosphere
- Materials & Resources
- Indoor Environmental Quality
- Awareness & Education

Points are assigned to each category and the final level of certification is determined by the total number of points earned out of a potential 136 points. The potential levels of certification for Affordable Housing project are as follows: platinum (80-136), gold (65-79), silver (50-64), and certified (35-49).

The New Genesis Apartments has received a platinum certification.

## Green Amenities at New Genesis

### *Storm Water Management*

#### *Storm Water Dry Well*

The site is equipped with a dry well to manage almost all (98%) of the storm water on site. The system collects runoff from impervious surfaces, such as the roof and concrete walkways, through a drainage system that disperses the water deep below ground. The well is located in the center of the courtyard.



New Genesis Dry Well

The dry well recharges the groundwater system, which is typically depleted due to potable water usage (i.e. sink and shower water). Since the well disburse water back into the environment, we cannot use it for dumping any other substances because that could be harmful to existing waterways. The replenishing system reduces discharges to the local storm water management system and retains water runoff on-site, which helps ease the burden on the city's water treatment system.

#### *Erosion Control*

During construction, erosion control measures were implemented to minimize the impacts on surrounding sites due to storm water runoff. Sand bags were installed and maintained along the perimeter of the project site to retain soil while allowing the passage of excess water. Pumps were utilized to control water discharge from the site.



These measures prevented exposed soil from entering and clogging the drainage system.

*Solar Electric Power*

A photovoltaic (PV) system has been installed on the roof to convert solar energy from the sun into usable electricity for the building. Solar power is also beneficial to the environment because unlike coal and natural gas, solar does not cause any air pollution and does not require consumption of a limited natural resource. Solar is more efficient because it is generated locally and does not suffer the typical energy losses due to transport that occur with power plant energy production. The PV system at New Genesis is located on the top of the roof.



New Genesis Photovoltaic Panels

*Solar Thermal Water Heating*

A solar thermal system absorbs heat from the sun and preheats cold water before it is heated by a conventional water heater, which is powered by gas or coal-generated electricity. By pre-heating the water using sunlight, less energy is required to heat the water with the conventional water heater.

Like the PV panels, the solar absorbing panels are also located on the roof of the building.



New Genesis Solar Thermal Panels

### *Electric Car Charging Station*

To accommodate electric vehicles, SRHT has installed a charging station in the garage. This allows residents or employees to charge their vehicle while in the building, which conveniently reduces trips to larger charging stations.



AeroVironment Charging Station

### *Energy Recovery Ventilation (ERV)*

Depending on the outdoor temperature, the ERV system uses exhaust air to heat or cool the intake air to match the interior temperature. This occurs through a heat exchange between the inward and outward air flows. ERV also cleans the air so that the dirty indoor air is replaced with fresh outdoor air. Since the building has a central ventilation system, the air quality can be maintained for all of the units.

The ERV system provides pretreatment for the incoming air so that less energy is needed to heat or cool the airflows, which reduces energy costs. This process requires less equipment than conventional heating/cooling systems, so there are also savings in purchase and maintenance costs.

### *Construction Methods*

The construction process has the potential to be harmful to human health and the environment, but our general contractor used sustainable strategies and materials to ensure that these impacts are mitigated. The following programs were developed to ensure environmental diligence:

#### *Waste Management Plan*

The contractor developed a waste management plan with the goal of recycling or salvaging for reuse at least 75% of the material waste generated on-site. They designated recycling containers to sort the waste materials so that the recyclables could be properly disposed. The general contractor also reviewed the program with subcontractors so that each work crew was

responsible for their own waste prevention and recycling. Performance was monitored throughout the duration of the project.

#### *Indoor Air Quality Management Plan*

The contractor also created an indoor air quality management plan to prevent contamination of the heating, ventilation, and air conditioning (HVAC) system during construction. Once the HVAC was installed, the permanent ducts were sealed to prevent anything (i.e. dust) from entering the system during the rest of construction. Just prior to occupancy, the contractor performed a 48-hour flush of the system to ensure that there would be no harmful airborne particles once the system began operating.

#### *Construction Materials*

Permanent materials with lower impacts on human health and the environment were used as much as possible throughout the building process.

#### *Low VOC Materials*

Some building components emit volatile organic compounds (VOCs), which are harmful gases given off by solids or liquids. Paints and carpets typically emit a significant amount of VOCs, so low VOC versions of these products were specifically used in the building to improve the indoor air quality.

#### *Materials with Recycled Content*

Recycled building materials are produced using less energy and fewer natural resources than the standard versions of the same product. This reduces the amount of waste generated in the industry and can prove to be more cost-efficient. Building components that were manufactured using recycled materials include the following:

- Aluminum window framing
- Roof, floor, wall insulation
- Topping slab (fly ash)
- Doors

#### *Locally Extracted, Processed, and Manufactured Materials*

The transportation needed to deliver building materials to a site typically requires significant energy consumption and also generates pollution. To reduce these environmental impacts of material production, the contractor selected building products that were fabricated locally, such as:

- Aggregate for the foundation
- Gypsum board for the walls and ceilings
- Doors
- Window framing

#### *High Albedo and High reflectance Materials*

Large surfaces with exposure to the sun, such as walkways and the roof, tend to generate the heat island effect, which is where a structure absorbs energy from the sunlight and consequently heats up the building. This not only creates an uncomfortable environment for residents, but then requires extra energy to cool the building. Light-colored, highly reflective materials were used to deflect the sun's heat, reducing the building's energy consumption and the air pollution associated with cooling systems.





High Albedo Materials Used for Walkways and Exterior Walls

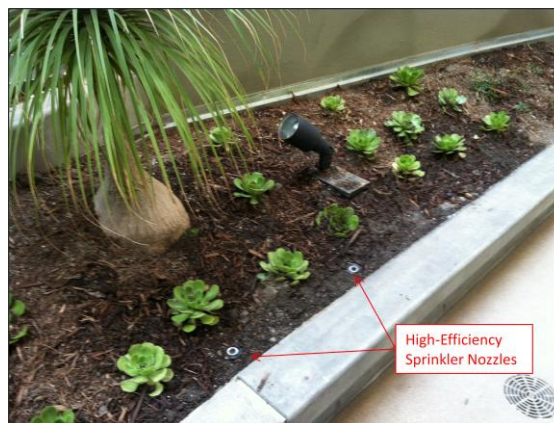
### *Design for Pest Control*

The building materials for the 1<sup>st</sup> floor have been limited to concrete and masonry, with all cracks and connections sealed to discourage pests such as insects and rodents from entering the building. This design approach reduces access to wood, which typically attracts these pests, and provides a non-toxic solution for pest control that is not harmful to residents.

### *Landscaping*

The landscaping has incorporated non-invasive plants that are not harmful to existing plant life within the area. The majority of these plants are drought tolerant and therefore reduce the daily water requirement for the building's landscaping.

The efficiency of both the plants and the sprinkler system reduces the required amount of irrigation and allows for significant water conservation across the site.



High-Efficiency Sprinklers

## Green Amenities in the Apartment

### High-Efficiency Fixtures & Appliances

#### Water Conservation

As shown below, the household fixtures and appliances in New Genesis Apartments exceed high-efficiency water standards:

Fixture	High-Efficiency Standard	Actual Performance
Toilet	≤ 1.3 gal/flush	1.28 gal/flush
Faucet	≤ 2 gal/min	1.5 gal/min
Shower	≤ 2 gal/min	1.5 gal/min
Dishwasher	≤ 6 gal/cycle	5.8 gal/cycle
Clothes Washer	Modified Energy Factor ≥ 2.0 Water Factor < 5.5	Modified Energy Factor = 2.46 Water Factor = 3.83

#### Energy Conservation

Energy Star is a program where the Environmental Protection Agency (EPA) evaluates products for energy performance so that we can reduce greenhouse gas emissions and energy costs by purchasing efficient appliances. The apartment is equipped with a refrigerator and dishwasher that exceed the federal energy standards.



Energy Star Appliances

#### Lighting

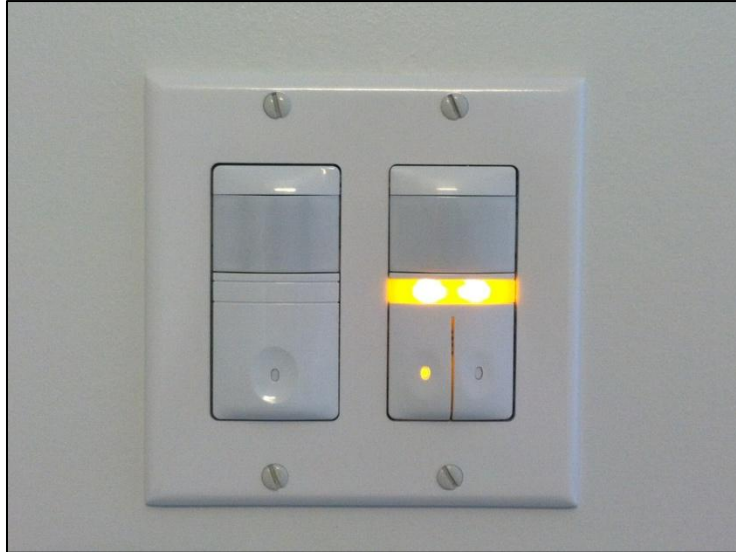
##### Bulbs

The overhead lights contain compact fluorescent light (CFL) bulbs that consume 75% less energy than a standard light bulb. They also produce less heat than standard bulbs, which makes them safer to handle. CFLs provide cost savings in both bulb replacement and energy usage.



*Switches*

The light switches are equipped with sensors that detect motion and shut off automatically if nobody is in the room. This prevents excess energy usage when someone forgets to shut off the lights.



Light Switches

*Overall Building Performance*

The building has been designed to exceed the baseline energy performance standard by at least 33.8%.