

Ram Oakland Park – Residential CPTED Principles & Sustainable Design Features

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Project Description

The Oakland Park Residential project is a development with multi-family residential apartments in 2 and 5 story buildings. It is located at the SE corner of NE 6th Avenue on Oakland Park Boulevard. The building's features include 12 townhouses, 288 residential apartments, a pool, outdoor and indoor amenity space, and a publicly accessible greenway/waterfront promenade to enhance pedestrian experience. Below are the narratives for each principle of Crime Prevention Through Environmental Design (CPTED) and Sustainable Design Features (SDF).

CPTED Principle #1: Natural Surveillance

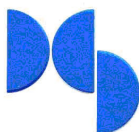
Natural surveillance of the property is achieved both publicly and privately. Public surveillance on the south and east side of the property is achieved via the greenway and waterway promenades respectively (North Fork Middle River), which is intended to be frequented by boaters and adjacent properties along the waterway and the upland portion of the greenway and waterfront promenade will be accessible to the public during daylight hours only. Views from the buildings oriented towards the canal, the street and the amenity areas allow the site multiple view corridors to the ground level.

At night street lamps will facilitate safe streets for vehicular and pedestrian use. A person is less likely to commit a crime if they think someone will observe the act. Lighting and landscape also play an important role in CPTED. Private surveillance is achieved via the windows and private balconies overlooking the adjacent sidewalks, street, and internal amenity areas of the project. Residents, as well as staff personnel, can easily observe the public street, access drives and interior amenity areas.

CPTED Principle #2: Physical/Natural Access Control

Natural and man-made access controls are essentially integrated into this project. First, there is only one main vehicle entrance to the development from NE 6th Avenue. The secondary vehicular access is through the commercial portion of the development and limited to resident access only. The main entrance is clearly defined with signage and pavement markings and will be well lit at night. This entrance has two defined drive aisles, one for visitors and one for residents as well as an exit drive aisle for both. Entry and exit points for the buildings leading to public areas, parking and amenities will also be monitored through active and passive video surveillance. Entry and exit doors will have vandal proof security lighting.

The pedestrian connection between commercial and residential sites is gated, and accessible through keycard to residents and a call box for visitor access. CPTED utilizes the use of walkways, fences, lighting, signage and landscape to clearly guide people and vehicles to and from the proper entrances. The goal with this CPTED principle is not necessarily to keep intruders out, but to direct the flow of people while decreasing the opportunity for crime. The waterfront promenade will be accessible to the public during daylight hours only and will be fenced and gated so that during sunset to sunrise proper security measures will be implemented to not allow access after hours.



CPTED Principle #3: Territorial Reinforcement

Territorial reinforcement is achieved by creating or extending a "sphere of influence" by utilizing physical designs such as fencing, pavement treatments, landscaping and signage that enable users of an area to develop a sense of proprietorship over the property. As part of this design, a decorative fence is proposed around the private areas of the residential project. It is the goal of this CPTED principle, that public areas are clearly distinguished from private ones so that potential trespassers perceive this control and are thereby discouraged.

CPTED Principle #4: Maintenance

Maintenance is a key component in this complex. The owner/operators will strive to maintain the physical appearance of the property. The "Broken Window Theory" suggests that one "broken window" or nuisance, if allowed to exist, will lead to others and ultimately to the decline of an entire neighborhood. Neglected and poorly maintained properties are breeding grounds for criminal activity. Maintenance of common areas, including utilities, amenities and landscaping will support the development's appearance. The entire development emphasizes. A formal CPTED based maintenance plan will help preserve property value and make it a safer place.

CPTED Principle #5: Activity Support

Activity support is created by increased use of a built environment for safe activities with the intent of increasing the risk of detection of criminal and undesirable activities. Amenity areas will create support for the residential area. Natural Surveillance by the intended users is casual and there is no specific plan for people to watch out for criminal activity.

CPTED Principle #6: Signage

Signage is used to welcome residents and guests to the site. Proposed signage will also direct residents and guests throughout the site. Signage may also be used to discourage activities such as loitering and soliciting.

CPTED Principle #7: Perimeter Lighting

The photometric lighting plan reveals that there is adequate security for the site and parking areas, without the effects of light trespass or light pollution. On the residential property light levels are 0.5-footcandle (FC) or greater. The parking lot has lighting level ranges as needed in the areas for security. Twenty foot high light poles using an LED light source are proposed for the parking lot. The LED light source will provide a uniform quantity and quality of energy efficient lighting. The color index in LED exterior lights is high and will support excellent color rendition and human visibility sightlines. The photometric light plan shows a uniform level of lighting that supports natural and video surveillance. The cutoffs stop light trespass and light pollution.



SDF Principle #1 Reduce Heat Island Effect

Urban heat islands are a result of modifying natural vegetation with non-reflective impervious surface. Heat Islands increase energy consumption, elevate emissions of air pollutants and Greenhouse gasses, compromise human health and comfort, and impair water quality by increasing areas that are significantly warmer than the surrounding rural areas. The current design approach uses three strategies to reduce the negative impacts of heat islands. First, all of the building roof materials shall be Energy Star certified products. Energy Star reflective roof products can help reduce energy bills by up to 50 percent and reduce peak cooling demand by up to 15 percent (EPA). In addition to providing the buildings with increased energy efficiency, Energy Star, or cool roofs, reflect sunlight and heat away from the buildings and stay up to 50 – 60 degrees cooler than traditional roof products. Second, all non-asphalt hardscape, pavers and concrete is designed with light colored hardscape that achieves a minimum of 30% solar reflectance. Light colored hardscape absorbs less heat energy during the day making the ground temperature cooler than non-reflective materials. In addition, light colored hardscape will re-emit less heat during the evening than a darker counterpart helping to keep the microclimate around the buildings cooler which reduces the demand for air conditioning. Light pavers are also an integrated part of CPTED as they reflect more light in the evenings assisting with safety. Third, tree selection is focused on providing both tree canopy as well as location-appropriate durability against wind events.

Based on current design, heat island reduction totals for this project are estimated as follows:

Mature Tree Canopy:	59,137 SF
Reflective Hardscape (pavers):	16,100 SF
Reflective Roof:	78,569 SF
Vegetated Open Space	128,297 SF
TOTAL	282,103 SF

Total Residential Site: 402,059 SF

The design approach, through deliberate combination of shade, vegetation, and reflective materials, enables the site to meet or exceed maximum tier scoring under National Green Building Standard (and LEED) for reduced heat island effect.

SDF Principle #2 Water Conservation

Water is one of the most valuable resources both globally and locally. The design approach includes reducing both interior and exterior water use over Chapter 604.4 of the Florida Building Code, Plumbing. Additionally, these water conservation measures reduce the overall demand on the local government infrastructure. The design strategies reduce water demand by a minimum of 47% for exterior and 35% for interior water uses effectively reducing, by minimum 35%, the usage volume stated in the "Proposed Use" column of the City of Oakland Park Community Development Department Application for a Concurrency Review Service Demand Analysis.



Exterior Water Use Reduction

The landscape design focuses on implementing the nine (9) principles of Florida Friendly Landscaping. These principles include right plant right place, water efficiently, fertilize appropriately, mulch, attract wildlife manage pests responsibly, recycle yard waste, and reduce stormwater runoff. Plants are selected with high and moderate drought tolerance to first reduce the demand for water. A combination of low trajectory spray heads and bubblers are used to direct water application appropriately. By using the right plant right place principle, the need for fertilizers and pesticides are significantly reduced helping to improve overall water quality. The site design uses advanced irrigation controls, soil moisture sensors, which reduce irrigation demand by 47% (IFAS) over traditional irrigation controls based on timers and rain sensors.

Interior Water Use Reduction

All townhome, apartment, and common areas are designed with low flow WaterSense fixtures. A water-use baseline budget compared to the implemented water use reduction strategies yield a 35% interior water use reduction for the residential portion of the project as compared to the allowed water use per Chapter 604.4 Florida Building Code, Plumbing.

SDF Principle #3 Renewable Energy

The community pool is designed to use solar pool heat in lieu of a fossil fuel-based heat source. Replacing the traditional pool heater with a solar pool heater results in an annual reduction of 10,132 pounds of greenhouse gas emissions. In addition, solar lighting and USB charging ports will be incorporated at the bus shelter on Oakland Park Boulevard.

SDF Principle #4 Natural Areas and Low Impact Development (LID) Techniques

The project is designed to complement natural features such as the large preserved mangrove stand. Mangroves are extremely beneficial providing natural habitat and nesting areas, assisting with reducing erosion and protecting water quality. On-site, the design includes vegetation that supports both butterflies and bees. Bioswales are also included to expand the LID techniques used on this project assisting in improving the natural environment.

SDF Principle #5 Health and Human Experience

In the wake of the recent global pandemic, the design team acknowledged the benefit of connecting with nature and having opportunities for outdoor places of respite while being able to adequately social distance. As such, the public access walkway on the eastern property boarder is eight (8) feet wide which allow individuals to safely access the boardwalk and riverfront plaza. The boardwalk is designed twelve (12) feet wide allowing for multiple individuals and families to enjoy the waterfront while safely distancing. Hand sanitizer stations are located adjacent to the bike racks and benches, areas that would commonly be shared by multiple individuals



SDF Principle #6 Third Party Certified Green Buildings

Each residential building is pursuing certification by the National Association of Homebuilders National Green Building Standard (NGBS). The NGBS Multifamily certification program requires that each project achieve a minimum performance in each of the following categories:

1. Lot Design, Preparation and Development
2. Resource Efficiency
3. Energy Efficiency
4. Water Efficiency
5. Indoor Environmental Quality
6. Operations, Maintenance & Building Owner Education

The project sustainability consultant documents and submits each building for third party certification with the Home Innovation Research Labs for verification. A copy of the project baseline checklist is available upon request.

SDF Principle #7 Education and Signage

As part of the ongoing effort to connect residents with nature, the design team has located educational signage throughout the riverfront plaza and boardwalk. The education signage relays the importance of mangroves, bioswales and habitat-friendly gardens, water conservation and energy conservation.

SDF Principle #8 Third Party Certified Land Development

The project site is pursuing certification using the National Association of Homebuilders National Green Land Development program. The NGBS Land Development certification program requires that each project achieve a minimum performance in each of the following categories:

1. Site Design and Development
2. Site Selection
3. Project Team, Mission Statement and Goals
4. Site Design
5. Site Development and Construction
6. Innovative Practices

This program ensures that the design and construction team are educated and implement sustainable design principles throughout the horizontal portion of the land development.



Sustainable Design Elements:

In addition to the above, the project shall feasibly incorporate elements listed below in the building and site:

Site & Landscape related Design Elements:

- Lockable Bike racks/storage, public transportation access
- Public plazas
- Greenway and waterfront promenade
- Two (2) dual-head electric vehicles charging stations ("EVCS") (servicing four (4) vehicles simultaneously)
- Minimum ten (10) "EVSC-ready" locations to meet future demand
- Ride share dedicated parking spaces (ie. Uber. Lyft, etc..)
- Transit plaza with a pull off area for a future City of Oakland Park trolley stop or small private school bus pick up area with parking spaces.
- Drought tolerant as well as native plant material

Building Related Sustainable Design Elements:

- SEER 16 AC equipment or better
- Energy efficient rated appliances
- Energy efficient rated exhaust fans
- Use non-HCFC refrigerants
- Interior Lighting to be LED fixtures
- Exterior light fixtures to be Dark sky compliant
- Interior Lighting fixtures to be ENERGY STAR rated or fitted with fluorescent bulbs with the ENERGY STAR label or LED fixtures
- Energy efficient qualified ceiling fans
- Low-flow toilets, bathtubs/showers and faucets

