

Lighthouse Point , West Bay, Grand Cayman

“Living lightly on the planet” epitomizes the overriding goal of Lighthouse Point, Cayman's first eco-development, using green technologies to minimize the impact of development and use of natural resources on the environment, while creating an environmentally friendly, responsible and sustainable place for home owners and vacationers alike.

Solar and wind power greet you at nine new 2-bedroom oceanfront condominiums with a dive shop and café on site. Set in a rugged iron-shore landscape, this eco friendly development is surrounded by flora and fauna indigenous to the islands on the North West Point of Grand Cayman. It is a stunning example of old Caribbean architecture with unobstructed views of the sea from private balconies and snorkeling and diving right out the front door.

The ‘faux’ stone exterior blends naturally into the landscape, complemented by antique anchors, cannons and nautical features, including a Lighthouse, that blend in architectural reflections back to Cayman’s maritime and culture history of this seafaring nation.

As a 3-year member of the US Green Building Council, Lighthouse Point was built to platinum LEED standards, from conception through occupancy.



Design Excellence

Building the islands first eco-development to LEED standards while creating a category 5 hurricane structure and an aesthetically pleasing and healthy living environment created the ultimate challenge in this signature development by Jay Easterbrook.

It meant sourcing and importing new technologies, installation methods, significant supervision and on the job training for local subcontractors and workers, finding specialists in renewable energy and water management fields for expertise and innumerable months shopping for suppliers and materials that met the projects goals. Working with the CPA and BCU to insure that building codes were met, or at times adapted, to new technologies was a time consuming process.

However, once approvals were granted, construction was completed in just under 1 year, attesting to the selection and integration of all materials, processes and subcontractors selected.

Creativity & Innovation

Lighthouse Point was both an exciting and challenging development, bringing many new technologies to Cayman that were 'firsts'. Numerous US building and architectural, engineering conferences and trade shows were attended over a 2 year period to understand, source and select designs and materials that would meet the project goals.

As renewable energy was new in Cayman, sourcing materials that would meet Cayman building codes, and in certain instances the lack of a code, proved challenging.

One major innovation was introducing renewable energy, allowing the condos to operate (without HVAC), off the grid.

LIGHTHOUSE POINT

9 condos, dive shop, cafe

15,744 sq. feet - 3 stories
\$279/sq foot construction cost

STRUCTURE:

- ✓ 12" CMU block (5000psi rated)
- ✓ Span-crete floors
- ✓ 5000 psi pre-stressed concrete pilings
- ✓ Category 5 hurricane rating
- ✓ Earthquake provisions
- ✓ Elevated to handle tidal surge
- ✓ Maintenance free

INNOVATION:

- ✓ Solar arrays, battery storage system and inverters
- ✓ Wind turbine
- ✓ Gray water system
- ✓ Cistern plumbed to hose bibs
- ✓ Innovation fire suppression 4+ hr.
- ✓ Recycled concrete stone exterior
- ✓ 12" 5000psi CMU blocks for walls
- ✓ 20' 5000psi pre-stressed concrete pilings
- ✓ Gas bulk storage with metering to each condo
- ✓ Materials with environmental stewardship ratings overall

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Sustainability & Environmental

Lighthouse Point was designed and built using the key metrics from the US Green Building Council LEED guidance, including energy savings, water efficiency, CO₂ emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts. Some highlights:

ENERGY:

photovoltaic solar
wind turbine
propane
superior insulation
99.8% UV rated doors & windows
100% energy star rated appliances, fans, lights – 100% CF/LED lights

WATER:

grey water system
cistern
sewage treatment plant
water sense fixtures
storm water management system

CO₂:

renewable energy
hi recycled material content in and out
reuse of old products
whisper DC exhaust fans
natural lighting throughout
46% reflectivity standing seam roof

INDOOR QUALITY

16 SEER A/C R410-A refrigerant
interior blinds between windows/doors
dust and allergen reduction
solid wood interior
minimized maintenance or replacement
propane and gas for post storm living

RESOURCE STEWARDSHIP:

sustainable forestry solid wood interior walls and ceilings
environmental stewardship award for kitchen & bathroom cabinets and furniture
tile floors, recycled glass/concrete kitchen counters
recycled concrete exterior
reclaimed lights and artifacts
recycled plastic railings and balustrades
reuse of construction materials and packaging

LIGHTHOUSE POINT

ENVIRONMENTAL:

✓USGBC Member

✓Built to LEED guidelines

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Value

Lighthouse Point demonstrates to architects, engineers, builders and owners that self-sustainable, environmentally responsible projects are attainable and can be done in a cost effective manner, contributing to Cayman's overall carbon reduction.

Lighthouse Point has been the subject of numerous articles both locally and internationally that provide excellent PR and exposure not only for the project but for the Cayman Islands, as a leader in environmental initiatives. The project has pioneered many new technologies that have been successfully demonstrated in operation over the past year, paving the way for the next sustainable project.

As can be seen through sales and occupancy over a challenging year, the public has shown their support of environmental stewardship and looking at the long term cost of ownership.

Buildability

As can be seen throughout this brief, multiple goals were set for each component of the project. One example of many, the span-crete flooring system created value by saving 3 months construction time, supported the efficiencies of the project by providing enhanced structure, increased home security from storms, provided excellent sound insulation and supported the environmental initiative due to being recycled concrete plus reduced material use such as forms. Another example was the solar system, which supported carbon reduction and created long-term value for residents through reduced expenses, as well as being innovative in approach. Several initiatives may appear in multiple sections, each showing a different advantage to it.

All materials, processes and installation methodologies were selected prior to any building. Underground systems such as the sewage treatment plant and cistern had plumbing needs carried throughout the building. Power needs accommodated gas, DC power, AC power and the ability to transfer between renewable energy and the grid. Intricate design and planning proved to create efficient and collaborative building with multiple sub contractors working together at most times.

LIGHTHOUSE POINT

VALUE:

- ✓ Reducing carbon
- ✓ Pioneering new technologies
- ✓ Substantial exposure to the islands
- ✓ 100% occupancy

BUILDABILITY:

- ✓ Pre-selection created efficient construction
- ✓ 2-years planning; 1 year building
- ✓ complex systems were tracked and implemented



Cultural Response

Nestled in the West Bay community within minutes of most services, Lighthouse Point was built to blend in and to recognize the historical maritime ties of the country to the sea – both above water and below. The solid dark wood furnishings are reminiscent of a bygone era.

Resident health was considered through features such as stairs versus elevators, in-window blinds, hypo-allergenic soft goods and tile floors to reduce allergens, hi efficiency HVAC, providing access to ocean breezes, carbon reduction and offering a healthy outdoor lifestyle with patios, dock, snorkeling, diving, bikes and green space.

Public and resident safety features include a 4 hours fire rating, dual staircases, no sheetrock to eliminate mold, a Cat 5 rating, elevation of 22 feet above hi water mark and impact windows and doors to name a few.

LIGHTHOUSE POINT

CULTURE:

- ✓ Maritime History
- ✓ Underwater archeological site
- ✓ Resident safety features
- ✓ Outdoor living promoted
- ✓ Built to co-exist in the coastal region

BUILDING STRUCTURE

Category 5 hurricane rating reduces repairs and future material use, thereby reducing overall waste and carbon during the life of the development

Property insurance was reduced by 72% annually, saving owners money each year

Innovative construction used 'Spancrete' pre-cast concrete slabs which reduced construction time and contributed to Cat 5 rating as well as superior fire insulation and sound proofing of condos

Building on 20' tall 20" columns protects the condos from storm surge, offers excellent ocean views and the best access to ocean breezes

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No paint No stain No
drywall No varnish No grass to cut
= No Maintenance

Supporting environmental stewardship in design and building from initial development through product life

100% occupancy since opening with 7 condos sold, 2 long term rentals, Divetech dive shop and Treats café operating



Architectural, environmental and structural design provide on going value to owners

Virtually maintenance free exteriors reduce annual fees

Strata fee \$160/mo

Category 5 structure, fire rating and elevated design reduce insurance costs for ocean living

Insurance \$291/mo

Water reuse and renewable energy systems save on monthly utility expenses

Average cost \$100/mo

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SOLAR: Energy and Carbon reduction also equate to owner savings and self-sufficient living

Solar array for each condo supplies 100% of power needs except HVAC

100% Compact fluorescent / LED lighting inside and out

All energy star rated appliances and fans

14" concrete floors and 12" concrete walls provide superior insulation

Pella 99.8% UV rated double doors and windows reduce heat inside condos

16 SEER high efficiency HVAC with R410-A coolant minimizes cooling time

20 year warranty protects owners investment

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***BATTERY banks in each
condo supply night time
power to the condos***

Solar power generated all day is stored in battery banks to supply power at night time

3 days power (with no sun) is stored before the auto transfer switch performs a switch to the grid

3,000 cycle gel-sealed batteries designed for aircraft use offer approximately 8 years of life before replacement

High efficiency invertors covert 92% of DC power into AC power

Maintenance free, self-operating solar system makes it transparent to residents



PROPANE: Carbon free propane compliments the solar power plus provides continuous service during power outages

Gas stove

Gas dryer

Gas hot water on demand

Bulk storage with meters offer residents a low cost, carbon-free solution to electricity



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WIND TURBINE: Cayman's first wind turbine offsets carbon produced by air conditioning use plus reduces costs to owners

Wind turbine offsets cost and carbon for HVAC usage

Compliments the solar power for windy, cloudy days

Oceanside installation for optimal wind conditions

Hinged turbine allows the wind generator to be laid down in hurricanes to protect property



WATER CONSERVATION – water conservation not only saves water, but reduces fuel/carbon usage to produce clean water

Gray water system recycles water from all bathroom sinks and showers/bathtubs to toilets, reducing water usage by 30% from toilets alone

Water Sense toilets and fixtures reduce initial water consumption

State of the art sewage treatment system has zero discharge and the clean waste water is used for landscaping

Underground cistern captures rain water for outdoor use. The dive shop operates 100% from reclaimed water

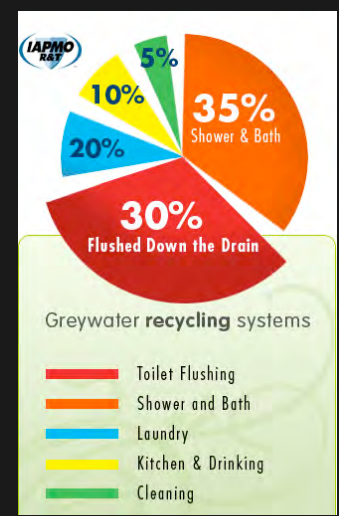


1 • City water supply showers, tubs, sinks

2 • This water, processed by the grey water system, supplies toilets

3 • Toilet water, processed by sewage treatment plant, irrigates vegetation

4 • Water is used 3 times before discharge



COASTAL DEVELOPMENT
*required special care to
 protect the marine resources
 for the future*

Four deep water injection wells
 minimize run off into the ocean
 during heavy rain

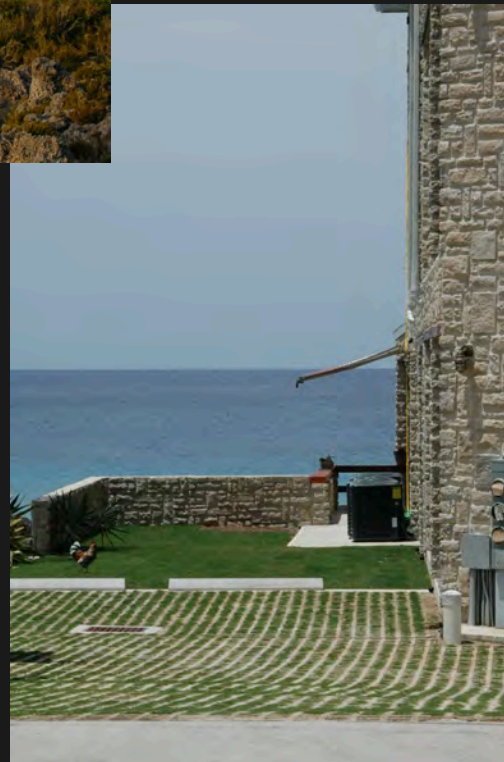
Grass pavers provide green
 space and absorb rain water

Sewage treatment plant has
 zero discharge

Rain water collection to the
 cistern reclaims rain and
 reduces water discharge

Dock for access over iron
 shore minimizes impact

Indigenous salt and drought
 tolerant flora , fauna and
 grass require minimal watering



EXTERIOR MATERIALS are reclaimed or recycled, to contribute to the preservation of natural resources

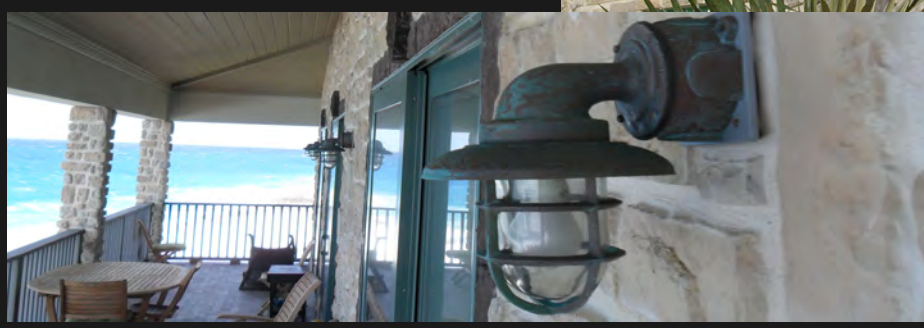
The exterior façade of Lighthouse Point is 100% recycled concrete, made into 'faux' stone for an antique look

All railings and balustrades are made from recycled plastic and composite materials that will not deteriorate or need painting/staining

The 68 exterior solid brass lights are old ship lights that were refurbished

The lens of the Lighthouse is a reclaimed lens from a West Palm Beach Lighthouse

Weather resistant products selected to withstand time, salt air and sun



***INTERIOR FINISHES used
'green' certified products***

Brick interior walls are old reclaimed brick

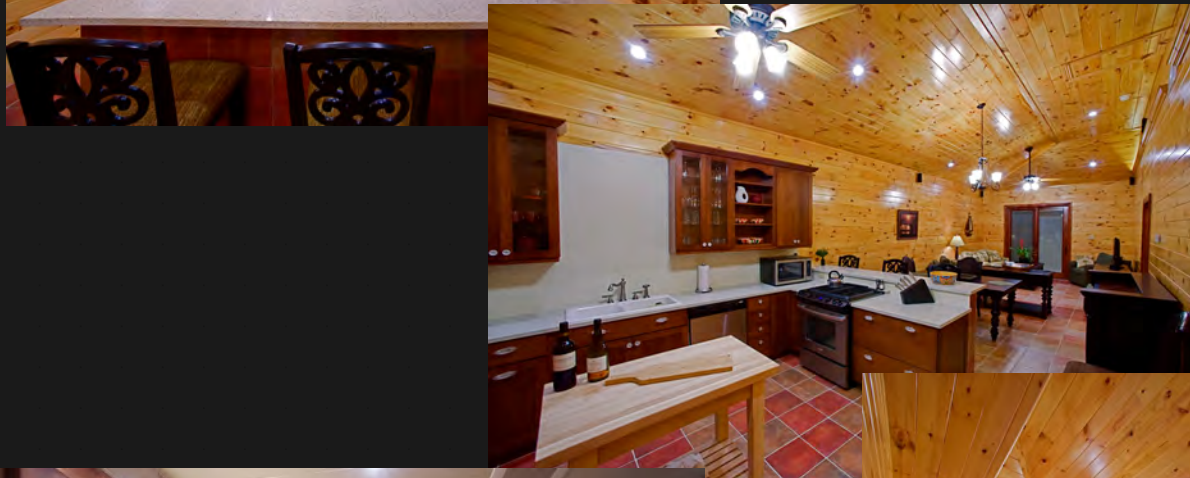
Solid wood walls and ceilings are certified 'sustainable forestry' and permanently sealed

Patio 'clay' tiles are recycled clay, hot fired to last and not break

Kitchen and vanity 100% wood cabinets with *Environmental Stewardship* award ratings

Solid stainless steel kitchen and bathroom fixtures

Kitchen counters made from recycled glass and concrete



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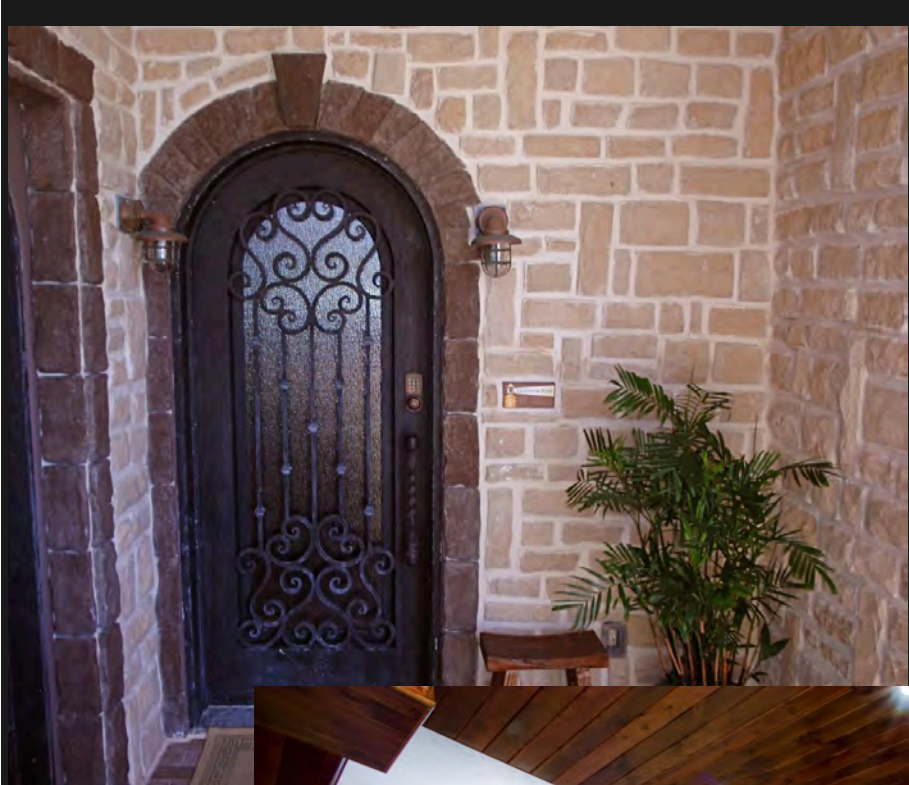
Taking advantage of the ocean breezes provides residents with HEALTHY LIFESTYLE CHOICES

Glass block features in bathrooms along with solatubes allow natural light penetration

Glass entrance doors with opening panels bring natural light and breezes into homes

Glass patio doors light up bedroom and living areas

Condo orientation of ENE / ESE take advantage of prevailing breezes



Incorporating a MARITIME THEME into the landscape and decor recognizes the seafaring history of the islands and its people

Reclaimed antique anchors, cannon, ship's bell, block & tackle other and nautical artifacts adorn the property

Stone lighthouse embedded in the wall plus a cupola lighthouse tops the building

Designated Grand Cayman archeological shipwreck site #33 by the National Trust, authentic shipwreck artifacts are found in the shallow waters off shore

A compass rose accurately depicts the directional orientation of the development



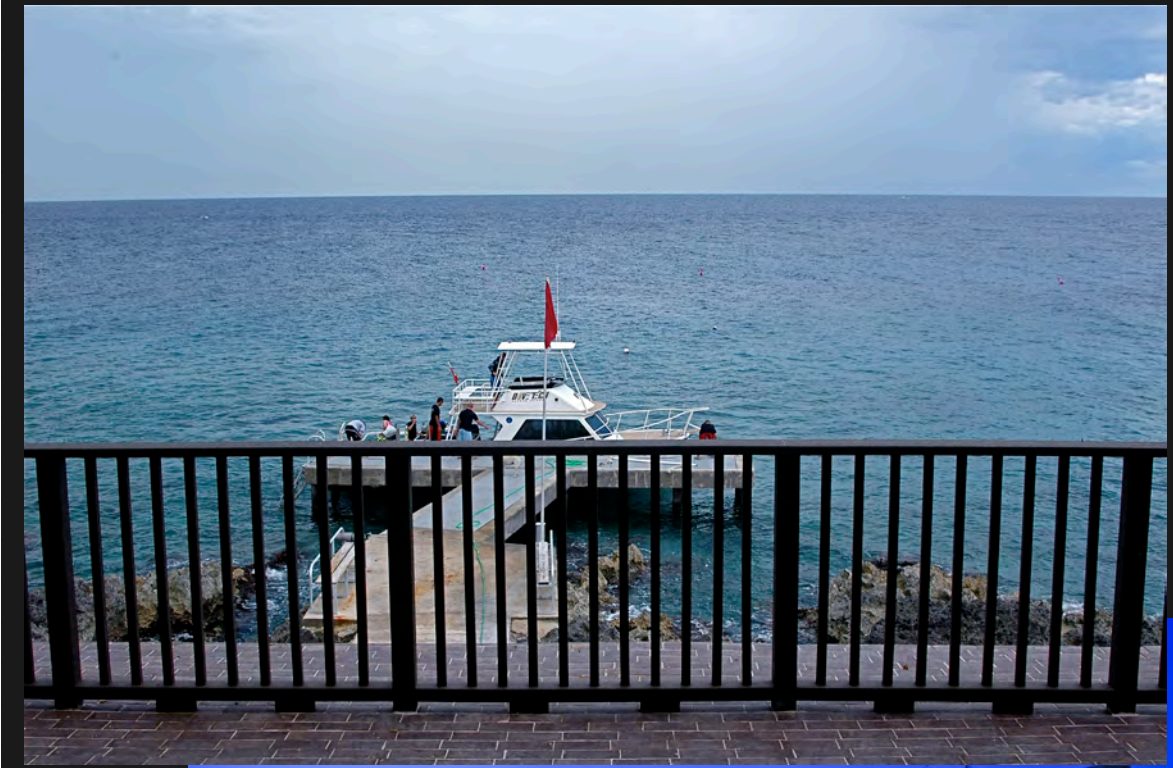
DOCK provides residents with easy water access

Pre-stressed 12,000 psi concrete pilings and 5,000 psi concrete beam dock with removable inserts maintains integrity during heavy seas

Solar lighting on the dock eliminates electrical safety problems while allowing safe night time usage

Aluminum custom built benches allow residents to enjoy the ocean views

Bollards on dock made from recycled scuba tanks



by CourtneyPlatt.com



RECYCLING center promotes reuse and recycling by residents

Double in-cabinet garbage bins make sorting cans and glass easy for residents

Outdoor bins are provided for glass, cans and batteries

Eco-cotton tote bags are provided to all condos for shopping

5-Gallon water coolers provide free refills for residents and visitors



New technology blends with history...



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