



# MAINSTREET DESIGN STANDARDS



## ACKNOWLEDGMENTS

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## INTRODUCTION

The work presented in this document is guided by the view that there is a tremendous opportunity for the development of new downtown in Coconut Creek. Coconut Creek is widely recognized as a well-planned community with a unique environmental consciousness. The City has a progressive planning approach to creating a unique life-style for its residents and businesses with beautiful parks (more than any other city in Broward County), an extensive greenways program and the implementation of hybrid transportation technologies. At the time of this writing, however, the City lacks a centralized downtown area that can serve as the heart of the community, providing opportunities for residents to live, work, shop and play.

These standards are the result of a master planning process beginning in 2002, during which the City leaders placed a high degree of importance on the values of the City's residents and property owners. Numerous meetings were held to receive input from community stakeholders to help guide the master planning process. These standards are the result of that process and therefore, embody the values of the community as a whole.

One of the greatest values of the Coconut Creek community is a desire for sustainability. Sustainability is a value that achieves balance between resources used and resources created. While it includes, and is often associated with, the implementation of recycling programs, efforts to minimize the consumption of energy resources and incorporate green building practices, sustainability encompasses much more than that. The concept of sustainability includes the fact that the community is a community of people and that the buildings are a component of an infrastructure network that allows the community to live comfortably within a compact environment over time. It also includes economic sustainability, the creation of buildings with long life spans and the opportunity for reuse, and that investment in these buildings can provide the returns necessary to support it.

Principle

***Sustainable: The condition of being able to meet the needs of present generations without compromising those needs for future generations. Achieving a balance among extraction and renewal and environmental inputs and outputs, as to cause no overall net environmental burden or deficit.***

INTENT

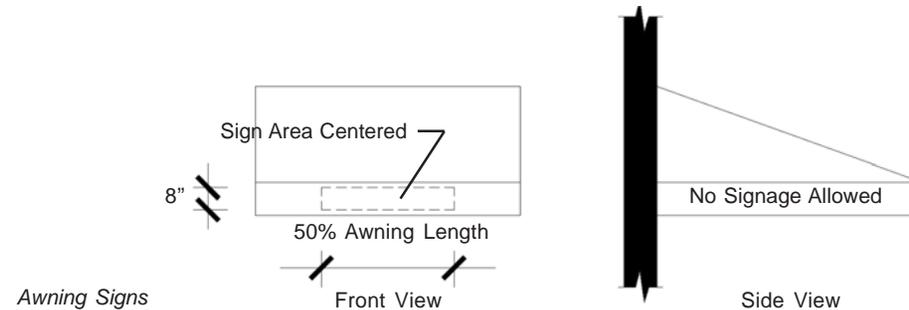


The intent of the MainStreet District is to provide for the development of a sustainable, mixed-use downtown environment that embodies the uniqueness of Coconut Creek and will serve as a local and regional destination for the City’s residents and nearby communities. The district promotes the development of a pedestrian oriented, mixed-use community organized around substantial, centralized and contiguous recreational open space. The efficient development of land resources, compact development of a variety of housing choices, flexibility in use and design, and green building and planning techniques are fundamental criteria of the district development.

In support of the city’s progressive environmental consciousness, these standards provide for the environmentally sensitive development of buildings, open spaces and water bodies. Furthermore, these standards recognize and encourage the use of green development practices established by the U.S. Green Building Council and the Florida Green Building Coalition, Inc. These organizations promote the design, construction and operation of buildings that are environmentally responsible, profitable, and healthy places the live and work. Both organizations provide standards for green development and a means for certification within their respective programs. This certification is a minimum requirement within the District.

Concerning building uses and overall buildable area, the creation of substantial open space, the development of mixed-use structures and the implementation of green building techniques are encouraged by providing greater development opportunities than that which existed prior to adoption of these standards. The standards provide floor area ratios, residential densities, allowable building heights and appropriate development block sizes. Yard and setback areas are minimal and are required to be developed as an integral part of the overall pedestrian streetscape. Ground floor build-to lines are provided in order to establish a continuous building frontage that enhances and provides spatial definition for the urban streetscape.

These design standards supplement the City of Coconut Creek Land Development Code (LDC) and are incorporated by reference. When the standards do not provide guidance on specific zoning issues the LDC provisions shall apply. District development shall not be contrary to or inconsistent with the comprehensive plan.

8.12 (cont.)  
Signage

## Requirements



- **Unless otherwise provided herein, refer to the City's Land Development Code for number and size of signs, as follows:**
  - Residential Uses: Sec. 13-458 (d)*
  - Commercial and Office Uses: 13-458 (e)*
- **In addition to ground or monument signs allowed for places of worship or community facilities, there shall be no more than 4 ground or monument signs within the District. Such signs shall be limited to overall district announcement as a whole and should not advertise individual establishments.**
- **Signs shall be generally oriented and scaled for the pedestrian.**
- **Lettering styles shall be limited to 2 per sign.**
- **Signs shall not obscure windows or other architectural features including window trim/moulding, grillework, piers, pilasters and other detail features.**
- **Wall-mounted signs on facias above storefront windows shall be sized to fit within friezes, lintels, spandrels and other similar features. Such signs shall be generally centered over storefronts and/or primary entrances.**
- **Electrical transformer boxes, raceways and conduits shall be concealed from public view. Raceways shall be mounted internally behind the finished exterior wall.**
- **Signage on awnings shall be limited to the front valance drop. Such signage shall be centered, shall not exceed 50% of the front length of the awning and letters shall not exceed 8" in height. The vertical dimension of the valance drop should not exceed 12".**
- **Signage illumination shall not spill over or produce glare for nearby residential uses or adjacent roadways.**
- **Hanging and projecting signs:**
  - *shall be limited to one sign per storefront or building use;*
  - *shall provide a minimum vertical clearance of 8 feet from the top surface of the sidewalk;*
  - *shall not project more than 42" from the building facade;*
  - *shall be double faced and mounted at a 90 degree angle to the primary building facade; and*
  - *shall be limited to 15 square feet per sign face.*

8.13  
Lighting

Architectural lighting should be utilized to highlight landscaping, signage, and special architectural features. Lighting should be used to create shadows and depth and highlight important architectural elements and building materials such as colored glass and perforated metal. Lighting in store windows should be used to encourage window shopping and other evening activities when stores are typically closed, but should not remain on throughout the night.

Exterior lighting shall be designed as an integral part of the building and landscape design. Lighting should generally be designed to include cut-offs to minimize the negative effects of lighting of the sky and should be located so as to minimize the impact of lighting upon adjacent buildings and properties, especially residential uses. In general, the location of lighting should respond to the anticipated use and not exceed the amount of illumination required by users. Illumination over an entire area or use of overly bright lighting is strongly discouraged. Lighting for pedestrian safety should illuminate changes in grade, path intersections and other areas along paths which, if left unlit, would cause the user to feel insecure.

Recommended minimum levels of illumination along pedestrian paths between destinations is 0.5 foot-candles. At pedestrian destination points such as entryways, plazas and courtyards, lighting levels should typically achieve illumination of 1 foot-candle. The placement of light standards, whether for street lights or garden lights, should not interfere with pedestrian movement.

## Principles

- ***Whenever possible, light second story windows to imply human presence and counter the appearance of desertion.***
- ***Decorative lighting shall be used to illuminate signs and uplighting to illuminate landscaping. Glare shields shall be used to reduce light spillover into pedestrian and vehicular areas and to reduce light pollution.***
- ***Use sconces and other architectural lighting to illuminate building entrances with warm light.***
- ***Illuminate signs, entrances, window displays and interiors at varying levels of brightness.***

## Reference

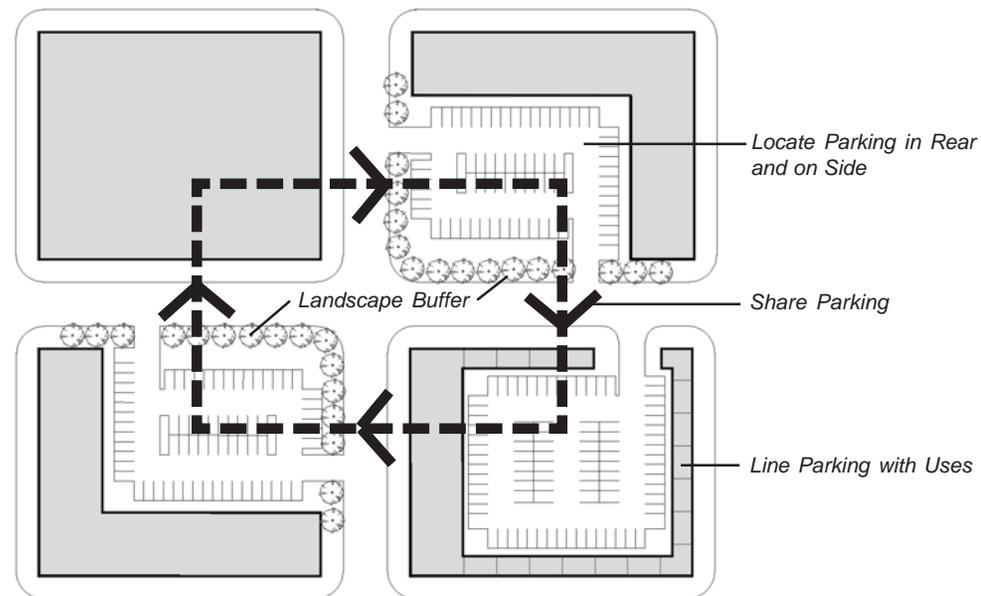
**9.6: Light Pollution**

8.14  
Parking8.14.1  
Shared Parking

Parking garages are generally a necessary component of compact development. Unfortunately, they are sometimes developed at the detriment of pedestrian oriented street-level activity and multi-uses per block. It is important that their design be handled with care. The district encourages screening garages from public view by incorporating street level uses, lining edges along important streets with uses, and incorporating architectural or landscape screening elements on upper levels. Surface lots should be handled with the same level of care.

Additionally, because the District streetscapes provide on-street parking and promotes the use of alternative transportation modes, District parking requirements are generally reduced from those found in the City Land Development Code.

Because the MainStreet Project is focused on creating a pedestrian oriented environment, the development blocks are sized to provide an ease of pedestrian movement and to encourage residents and patrons to walk. These smaller blocks are sometimes problematic for large retailers, especially in meeting their standard parking requirements. Large retailers, typically associated with suburban development, are accustomed to developing on large parcels of land where their parking requirements can be met with surface lots. For this reason, the district encourages the sharing of parking facilities among adjacent development blocks.



8.14.1 (cont.)  
Shared Parking

In addition, the district promotes the overall reduction in parking requirements, for mixed-use developments, through the application of a shared parking analysis. Such analysis should utilize standardized data and follow the procedures of the Urban Land Institute Shared Parking Report, ITE Shared Parking Guidelines, or similar recognized procedures. These procedures account for mixed-uses that have different parking demand patterns and peaks and are able to use the same parking spaces throughout the day.

Requirements



**Shared Parking**

- **Utilize shared parking when possible.**  
*Shared parking for residential units must be located within 300' of dwelling unit entrances they serve.*  
*Shared spaces for other uses must be located within 500' of the principle building entrances, except that up to 20% of the spaces may be located between 500' and 1,000'.*

**Parking Requirements (see Sub-District MS-P for special requirements)**

- **Commercial/Office/Retail/Restaurant/Entertainment Uses: 3 spaces per 1000 square feet of gross leasable area**
- **Residential Uses: 1.5 spaces per dwelling unit**
- **Parking for all other uses and for the disabled shall be as provided in Section 13-398 of the City's Land Development Code.**
- **For all uses, perpendicular parking spaces shall not be less than 9'-0" in width and 18' in length.**
- **For all uses, parallel parking spaces shall not be less than 8' in width and 20' in length.**

**Parking Screens**

- **Screen parking garages and lots from public view. Blank, unarticulated walls shall not be permitted for parking garage facades that are not lined with uses. Such facades shall have architectural treatments designed to be compatible with adjacent buildings. Ramps, stairwells and any other portion of a garage should be buffered with the use of decorative grilles and screens, landscaping, and other varied materials.**
- **Parking garages and lots on commercial streets:**  
*Shall not front commercial streets.*  
*Pedestrian oriented uses are required at street level.*  
*Upper levels shall be lined with uses such as residential or office.*
- **Parking garages and lots on residential streets:**  
*Lining with active uses is required along residential canals. It is encouraged on other residential streets.*  
*When garages and lots are not lined with uses, they shall be screened through the use of architectural treatment or landscape buffers.*

8.15  
Service Areas and Refuse

To minimize the impact of service areas and site-related infrastructure on the aesthetic character of the MainStreet District, service areas, garbage receptacles, utility meters and mechanical and electrical equipment should be screened from public view and located for convenient access by service vehicles. Trash collection should be designed for from a side street, alleyway or parking area, to avoid collection trucks needing to maneuver in busy roadways.

Screening of these areas should be integrated into the overall building and landscape design. Trash enclosures shall be integrated to minimize visibility and accommodate truck access. Enclosures shall be constructed of durable materials and the color, texture, and architectural detailing shall be consistent with the overall site and building design. All structural screening should be supplemented with landscaping. Roofs of enclosures should be designed to complement the project buildings' roof style and colors.

Lighting of outdoor service, loading and storage areas should be the minimum necessary for security purposes and should be designed and directed so as not to create glare or lighting impacts at the street or on surrounding properties. A minimum one foot-candle at ground level should be designed and located as low to the ground as possible.

Requirements	<ul style="list-style-type: none"> <li>• <b><i>Service areas, garbage receptacles, utility meters, mechanical and electrical equipment shall be screened from public view.</i></b></li> <li>• <b><i>Lighting levels shall be one foot-candle and shall be located to avoid light pollution.</i></b></li> </ul>
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Reference **9.6: Light Pollution**

8.16  
Attached Housing

Attached residential buildings should be oriented to the street and/or canals (in the case of higher densities and taller buildings, they should be oriented to take advantage of open space vistas). This includes common main entrances, individual entrances and front doors, and windows of major interior rooms. Front entrances and common lobbies should be well lit and easily accessed from the street with walkways

Off-street parking should be located in the rear or on the side of buildings and should not occur between buildings and the street. When parking is not provided within a common lot or garage, it shall be provided by an enclosed garage or screened parking area and accessed from a rear alleyway. Garages and accessory structures shall have a minimum setback of 5'.

Individual units within large buildings should be articulated through roof forms, front porches or stoops, overall massing, and material details/changes.



## SUSTAINABLE AND GREEN COMPONENTS 9

### SUSTAINABLE AND GREEN COMPONENTS

*“Sustainability” is the ability of a system to maintain itself with only the sunlight, air and water naturally entering its boundaries. It does not exfiltrate waste or deplete resources of adjacent systems. This is a very ideal standard which is a good goal but impossible to meet in the truest form of the definition.*

*“Green” is an adjective modifier used to indicate that a project has achieved certain characteristics that indicate it has minimized its consumption of natural resources in comparison to the average project. While this is not as noble of a concept as Sustainability, it is more achievable in the current market.*

Environmental Resources in South Florida are being consumed at an exponential rate. Anyone with a basic understanding of the American economy, (supply/demand), can see that as the demand for resources increases and the supply decreases, costs will rise. The building industry is the nation’s largest manufacturing activity, representing more than 50 percent of the nation’s wealth. In addition, buildings account for one-sixth of the world’s freshwater withdrawals, one-quarter of its wood harvest, and two-fifths of its material and energy flows. Outside of the project boundaries, buildings impact stormwater systems, air quality, and transportation patterns of communities. It is Coconut Creek’s desire to conserve our supply of natural resources and to minimize the demand for these resources. By setting these goals of sustainability, the City is taking steps to build value into the properties (durability, low operation and maintenance costs and high salvage value), the residents (better quality of environment, desirable amenities), the companies (higher productivity per employee, lower operating costs, lower employee recruiting costs) and the community (need less infrastructure, less overhead required to manage, deplete less finite resources and help investors attract other buyers).

It has been demonstrated by the 2004 “Costing Green: A Comprehensive Database and Budgeting Methodology” study by Davis Langdon Adamson, that producing a Green building is not more expensive than a non-green building. Their study included classrooms, office buildings, multi-level parking structures, theaters, sport facilities and other types of structures. It included modifiers for geographic location and rural vs. urban considerations. The study compares 138 buildings – 93 non-LEED and 45 LEED seeking. The end analysis shows no statistical deviation between the LEED and non-LEED samples.

#### Requirements

- ***All Buildings in the MainStreet District shall be at a minimum, Certified by the FGBC Florida Green Building or LEED certified by the USGBC United States Green Building Council. Amendments to the FGBC and LEED requirements will be enforced at the time of site plan review.***

**SUSTAINABLE AND GREEN COMPONENTS 9**9.1  
Education Campaign

In order to create a Green Community, the City must take an active role of leadership. This leadership must include both setting the standards for Sustainability and making any new public buildings on this site Sustainable. The City must teach, model and encourage the desired performance, so that the private development can respond appropriately.

The education effort involves several different approaches in order to unify the community. First the definition of Sustainability must be consistent throughout the community. This is accomplished through public policy. All tangible benefits pertaining to all stakeholders need to be defined and communicated in order to effectively promote sustainable building on a large scale. Definition must be given to Sustainable Development of the community at large vs. the very focused goals of creating a Sustainable Building. The education must be simple and consistent in order to minimize cost and unproductive opposition. By educating the community on the achievability of the expectations the City will lessen developer risk and facilitate development.

The first goal is to create a definition a green building for this project. Parts of the definition could include references to voluntary consensus based standards such as USGBC's LEED and FGBC's Green Commercial Building Standard Version 1.0. In addition, the Green Building goals must be defined as well as Green Community and Site goals. These community and site goals could include basic land use, transportation programs to minimize traffic concerns, and infrastructure investments such as greywater systems for irrigation, high efficiency central cooling plants.

The second goal is to create a community awareness of the benefits of this program. When the community unifies as stakeholders of the system, the implementation and maintenance of the program will require less "policing".

Finally, current codes and ordinances should be reviewed to determine if there are any policies in place which inhibit green practices

These efforts will subtly move sustainable building efforts to the point where they become common, everyday practice in the Coconut Creek MainStreet Development. The following recommendations will streamline the process of getting the implementation started.

The first recommendation is for the City to adopt a sustainable building policy for all new City funded construction projects in the area to be LEED certified by the US Green Building Council.

**SUSTAINABLE AND GREEN COMPONENTS 9**9.1 (cont.)  
Education Campaign

Once a common foundation has been established by the Standard, the City should review codes, regulations and other requirements that pertain to the building industry. The purpose of this would be two-fold: 1) To identify codes that are perceived barriers to sustainable building and clarify that they are not real barriers; 2) To identify, evaluate and recommend appropriate changes to codes which conflict with sustainable building. For example, the use of greywater is currently not allowed for water closets. This should be studied and possibly modified in order to allow more potential green efforts.

In addition to ensuring that regulations do not impede sustainable building efforts, the City could provide the industry with the tools to put sustainable building ideas into action. One method is to create an area on the City's website with useful information such as a Resource Center to make information more accessible to those conducting research on green building products, technologies and practices. A wealth of information about sustainable building already exists but is scattered among hundreds of companies, agencies and other organizations throughout the world. One-stop-shopping for this information is an item that is strongly recommended.

Education and outreach is also key to getting sustainable building into the mainstream. Workshops, seminars, and other education of City staff (e.g. building inspectors) and industry professionals need to continue and expand. For many, this education will be an introduction to sustainable building ideas, while for others it will provide the latest information to continually do better.

Marketing sustainable programs is vital to their success. The marketing campaign should create a "brand" or identity for sustainable building to incorporate this concept into everyday life for the building industry and the general public. As part of the marketing effort, the City should recognize, reward and publicize outstanding projects.

Finally, to keep pace with constantly changing technologies and regulations, and to continually raise the bar, the Standard's performance guidelines should be evaluated and modified on a biennial basis. At some point, sustainable building may become so mainstream that the Standards will not be necessary. In addition, if the other City initiatives, such as the educational program, are successfully implemented, they too should be assessed biennially to determine whether they should continue, be modified, or replaced with new initiatives. Again, once sustainable building becomes more accepted and practiced, many of the City programs may be retired.

**SUSTAINABLE AND GREEN COMPONENTS 9**9.2  
Recycling/  
Waste Management

*Recycling is a LEED prerequisite*

Recycling is a system of collecting, sorting, and processing solid waste and other discarded materials for use as raw materials in the manufacture of new products. As indicated by the three arrows on a recycling symbol, recycling is a three-step process that includes:

- Collecting and separating materials,
- Manufacturing and reprocessing, and
- Purchasing of recycled content products.

Coconut Creek citizens are generating trash every day. American businesses generate enough paper to circle the earth 20 times. Recycling materials, instead of landfilling them, extends local landfill life, preserves natural resources, reduces pollution, and saves energy.

Broward County has the 3<sup>rd</sup> highest cost for waste disposal in the state. The current rate is \$13.25/cuyd, and is reviewed annually in September. Most communities are able to produce large enough volumes of recyclable materials to minimize or offset the additional Cost of adding the recycling service. This additional Cost is offset not only by the revenue received from recycled materials but also from the reduction in waste disposal Costs as volumes are diverted from landfilling to recycling.

## SUSTAINABLE AND GREEN COMPONENTS 9

### 9.2.1 Commercial Recycling

Business owners provide on-site recycling opportunities to their employees in much the same way that the City could provide this opportunity to single-family homes through curbside recycling. As is the case with the City's curbside program, the participation of each employee/tenant is voluntary. The business shall recycle a minimum of two materials listed below or other non-listed materials that are approved by the City's Public Works Department at (954) 973-6780 or All-Service Refuse (954) 583-1830:

- Aluminum cans
- Tin/Steel cans
- Glass bottles
- Plastic containers
- Newspaper
- Corrugated cardboard
- Mixed office paper

The City reserves the authority to add or delete other materials to the above list.

#### Requirements

- ***Institute a Commercial and Multi-Family Recycling requirement that all multi-family communities with 100 or more units and businesses with 100 employees or more, or buildings with an aggregate of at least 100 employees that have a single garbage collection service, shall establish an on-site recycling program and recycle a minimum of two designated materials listed above.***
- ***Businesses shall recycle a minimum of 2 materials.***
- ***All business owners in the MainStreet area must provide a Recycling Plan to the City of Coconut Creek within 14 days of beginning operations.***

## SUSTAINABLE AND GREEN COMPONENTS 9

### 9.2.2 Home Recycling

The production as well as the disposal of everything we throw away has a cost, both for the consumer and the environment. Raw materials and energy had to be used to make the products - some from renewable sources and some not. This is just the first cost. The second cost is the price of going to landfills. And there is a less considered third price of potential land, air, and water pollution from the toxins our garbage often contains. Landfill space is quickly vanishing. Pollution levels are increasing. Reduction, reuse, *and* recycling on everyone's part can positively impact our resources and environment.

Using recycled content (as opposed to new/raw) materials provides approximately 50% energy savings and 85% reduction in industrial air pollution. And using recycled materials can also conserve approximately 50% in industrial water use and reduces industrial water pollution by about 40%. This also reduces demand on our virgin/raw materials and resources. For example recycled paper can reduce the demand for virgin wood pulp by approximately 40%, as well as realize reductions in energy and water use, and air and water pollution.

The easiest, least expensive, and safest ways to reduce these impacts are to produce less, use less, reuse more, and recycle everything we can. Of the millions of tons of garbage Americans produce each year it is estimated that more than 70% of it could be recycled. For example, Americans spend more on food packaging in a given year than American farmers receive in net income. Buying bulk items and products with little or no packaging, sometimes called *precycling*, can reduce what goes into the waste stream in the first place.

The City currently offers a recycling program, with curbside pick-up of newspaper and co-mingled items (paper, glass and plastic) for single-family homes.

The most common things Americans throw away are glass, aluminum, paper, and kitchen and yard waste (often called organic waste). The importance of recycling becomes apparent when we think of just a few of the impacts. For instance, the energy saved by recycling one glass bottle will light a 100-watt bulb for four hours. An aluminum can in a landfill wastes as much energy as it would if you filled it half-way with gasoline and poured it out - and it will still not be decomposed after 500 years. If everyone in the U.S. recycled just 1/10 of their newsprint, we would save the equivalent of 25,000,000 trees each year. Composting organic waste is not only good for soils, this waste accounts for about 70% of the average American's garbage.

The County accepts household quantities of home chemicals for disposal and recycling. The Center is open at selected published times to collect materials such as paint, motor oil, garden chemicals, pesticides, and cleaning chemicals. The facility is not designed to accept waste from businesses. To use the facility you must be a resident of the County.

Benefits from participation in the recycling program include lower waste collection costs.

## SUSTAINABLE AND GREEN COMPONENTS 9

### 9.3 Stormwater Management

#### 9.3.1 Pervious Materials (LEED Sustainable Site Credit 6)



It is preferred that new development in the District will limit disruption of natural water flows by minimizing storm water run-off, increasing on-site filtration and reducing contaminants.

Flash flood conditions reveal that impervious surfaces such as asphalt and concrete add dramatically to stormwater runoff problems: erosion, pollution of surface waters, and downstream flooding. For most high traffic road surfaces, impervious asphalt and concrete pavement are the best options. But for parking areas, low-use driveways, utility access roads, pedestrian walkways, fire lanes, and highway shoulders, there are many advantages to materials that can absorb surface water rather than shedding it. Also, in keeping with the “cool communities” effort to reduce heat absorbing and radiating surfaces, pervious materials are a smart choice over concrete and asphalt surfaces. These products can cost from 10 to 40 percent more than asphalt surfaces on a first cost basis. The cost is mitigated when additional costs of processing stormwater runoff are factored into the comparison.

In communities similar to Coconut Creek, the public response has been good; more product exposure is needed. Pervious paving areas facilitate groundwater recharge. Pervious paving can accept runoff from roofs and adjacent parking areas and allow it to infiltrate the ground. It can also reduce the need for curbs and gutters as drainage features. Materials such as gravel, crushed stone, open paving blocks or pervious paving blocks minimize runoff and increase filtration for driveways, parking areas, walkways, and patios. Some pervious paving options can retain turf and carry autos and trucks evenly without creating tracks or other signs of heavy traffic wear.

Many pervious surfaces that receive vehicle traffic require a clay-type roadbase subgrade. The roadbase material could slow water percolation in heavy rains and cause over-saturation above it, leading to puddles or runoff. It is best to select a pervious paving material that can use the most porous sub-base. Care should be taken during installation to minimize excessive soil compaction. Additionally, a turf-covered pervious surface can be problematic for high-heeled shoes, and can stay wetter after rains because of grass heights. A compromise approach is to retain a small impervious walkway next to vehicle loading and unloading areas.

Pervious materials may cost more than asphalt, possibly less than concrete. However, higher costs can be recovered in areas with underground utilities because pervious materials are easier to remove and replace than asphalt. Pavement replacement is simplified, and expensive measures such as asphalt cutting and patching are eliminated.

#### Requirements

- **Use pervious materials for small, low-use parking areas, low-use driveways, utility access roads, pedestrian walkways, fire lanes and highway shoulders when feasible.**
- **Use pavers, blocks and soil stabilization products with recycled content.**
- **Utilize aquascaping as a fundamental component of water feature design.**

**SUSTAINABLE AND GREEN COMPONENTS 9**

9.3.1 (cont.)  
*Pervious Materials:  
 Installation*



9.3.1 (cont.)  
*Pervious Materials:  
 Grass Requirements*



9.3.2  
*Aquascaping*

Pervious paving will function best with a similarly porous subgrade. This can be difficult given the soils in many areas and the compaction that may occur during the construction process. Contractors will need to take special precautions to prevent excessive compaction of the soil during the installation process.

Sediment should be prevented from filling the pore spaces of the paving blocks during and after installation or the pervious nature of the finished product will be diminished.

Certain systems interlock and thereby avoid ruts, cracking, or settling in heavily traveled spots. The interlocking feature allows for use by heavy equipment such as fire trucks and other emergency vehicles.

Some pervious paved areas may use interlocking pavers that have open spaces, which allow grass to grow in the openings. This creates a surface combining good load-bearing capacity and large pervious openings.

A sub-base consisting only of sand and gravel will have less ability to support grass roots growing into it. This restricts the grass root zone primarily to the topsoil directly above the sub-base, and can be subject to more rapid drying out in drought conditions. Including soil in the mixture of sand and/or gravel will permit better growing conditions for the grass.

Cultivation of grass in interlocking pavers will be most successful in medium to low traffic areas.

Paving systems that have distinct ridges above the soil level can prevent the crown of the plants from being crushed.

Proper maintenance of permeable paving includes periodic vacuuming of the paving with street-sweeping equipment to remove sediment buildup.

Aquascaping shall be incorporated as a fundamental component of water feature design. Aquascaping is the practice of using aquatic plants to landscape in and around water. While it's main purpose is to beautify, it also serves to catch, trap and filter pollutants within water runoff, aides in controlling erosion of water body banks and also helps to deter the spread of invasive non-native plants. Aquascaping can attract wildlife and increase wildlife habitat in urban areas. Aquascaping shall incorporate a wide range of native plants. Non-native species are prohibited. Given that canals are intended to act as urban streetscapes, aquascaping is not required.

## SUSTAINABLE AND GREEN COMPONENTS 9

### 9.4 Reduced Site Disturbance (LEED Sustainable Site Credit 5)

The MainStreet District seeks to preserve and create communal greenspace and water bodies that contain indigenous flora/fauna. In addition to managing stormwater runoff, it is recommended that compliance with LEED Sustainable Site Credit 5 be required.

#### 9.4.1 *Site Protection*

Preserving the natural elements of the site is important. In Green Building projects, the site is considered first and evaluated for all characteristics. The site has a crucial role in future performance of the building and enjoyment of occupants. Preserving native vegetation can greatly reduce water and pesticide use, and large existing trees add to property value. A recent study determined that one city's urban forest contributes \$133,600,000 annually in real benefits. These benefits affect air quality, stormwater runoff mitigation, and direct energy savings from trees.

The protection of trees and shrubs can provide wind and solar protection for on-site buildings. Using indigenous vegetation also reduces the amount of energy and water needed to grow and transport materials. By maintaining habitat for native species a crucial environmental balance can be preserved.

Keeping natural grades undisturbed can minimize erosion and water pollution. There are several ways to minimize the adverse environmental impacts related to site work.

General climatic data (temperature, humidity and wind patterns) should be analyzed in conjunction with specific site elements (i.e. topography, vegetation, water conditions on-site, existing built forms, natural drainage patterns) in the selection of building location, orientation, form, envelope construction, and size and location of apertures.

Consideration should be given to mapping the individual elements discussed above on overlays to get a composite view of their effects for making design decisions.

Planned Green Space measures are being considered to promote wildlife habitat and tree preservation.

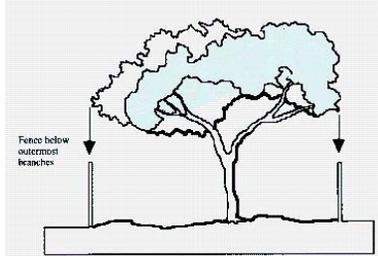
#### Requirements

- ***Comply with LEED Sustainable Site Credit 5.***

## SUSTAINABLE AND GREEN COMPONENTS 9

### 9.4.2

#### Tree Protection



The existing cypress dome shall be protected. Much of the site is tomato farmland and does not have trees. Existing trees in the other areas need to be examined for quality, health and native vs. invasive species. Usually, existing trees should be viewed as valuable natural and aesthetic resources that are not readily renewable. They provide substantial shading values since a large part of Florida cooling loads is due to solar radiation. Not only do they reduce cooling loads, but they reduce the heat-sink impact on paved areas. A survey of the existing trees could be required prior to development with an instruction to relocate or to be protected during construction.

If a tree is to be protected during construction, provide tree protection in compliance with the existing Coconut Creek requirements.

### 9.4.3

#### Earth Work



Topsoil is a valuable living ecosystem that should not become mixed with subsoil or other materials. If topsoil is stripped during construction, it should be stockpiled for reuse on the site. Bare topsoil should never be allowed to wash off the site. Topsoil should be piled carefully, clear of all pollutants. The foot of the pile should be diked to prevent erosion and creepage. Slopes should be covered with mulch or seeded with annual grasses if a growth season is likely to occur during the life of the stockpile.

Recycled concrete should be considered for use as backfill material. In addition, recycled concrete is an acceptable substitute for quarried stone aggregate in nearly all site applications. It can be used as subgrade or base course for roads, embankments, and retaining structures.

Site slope modification should be avoided in order to reduce soil erosion and increase infiltration. When modifying drainage, preference should be given to sheet flow rather than concentrated flow. Provide swales and temporary on-site areas, so that rainwater and roof run-off can be absorbed on-site.

#### Requirements

- **Protect the existing cypress dome.**
- **Protect existing trees in compliance with Coconut Creek requirements.**
- **Stockpile and reuse existing topsoil.**
- **Use recycled concrete as a backfill material and as subgrade to the extent possible.**

## SUSTAINABLE AND GREEN COMPONENTS 9

### 9.5 Alternative Transportation (LEED Sustainable Site Credit 4)

The US currently has an estimated 200 million of the 520 million cars worldwide. Reducing the use of private automobiles saves energy and avoids environmental problems (air pollution, oil extraction and petroleum refining). Parking lots have a negative impact by increasing stormwater run-off and heat island effects. The new development will seek to minimize pollution and land development impacts from automobile use.

Bicycling and Walking exposes people to the community, encouraging interaction among neighbors and allowing for enjoyment of the area in ways that are not possible from cars.

#### 9.5.1 Mass Transit



Hybrid Bus lines will be extended into the MainStreet development. It is our understanding that the previous electric busses operated by the city are difficult to maintain since the manufacturer has become extinct. Broward County has loaned the City several traditional busses for temporary use. It is the intent to purchase new hybrid busses from a more reliable manufacturer. Hybrid Vehicle refueling stations should be placed within the MainStreet development for the busses and also to facilitate private electric vehicle usage.

#### 9.5.2 Bicycle and Canoes/Kayaks



Bicycle securing stations and Bicycle paths will be planned throughout the MainStreet area. Business Owners/Developers are required to provide bicycle securing points (as streetscape components) and encouraged to provide changing/shower facilities for use by cyclists. The current intention is to provide bicycle paths and Kayak waterways to increase small-scale access to the core of the MainStreet.



#### Requirements

- **Provide electric vehicle refueling stations as defined by LEED.**
- **Provide bicycle racks as defined by LEED.**
- **Provide hybrid bus service to future rapid transit developed along State Road 7.**

## SUSTAINABLE AND GREEN COMPONENTS 9

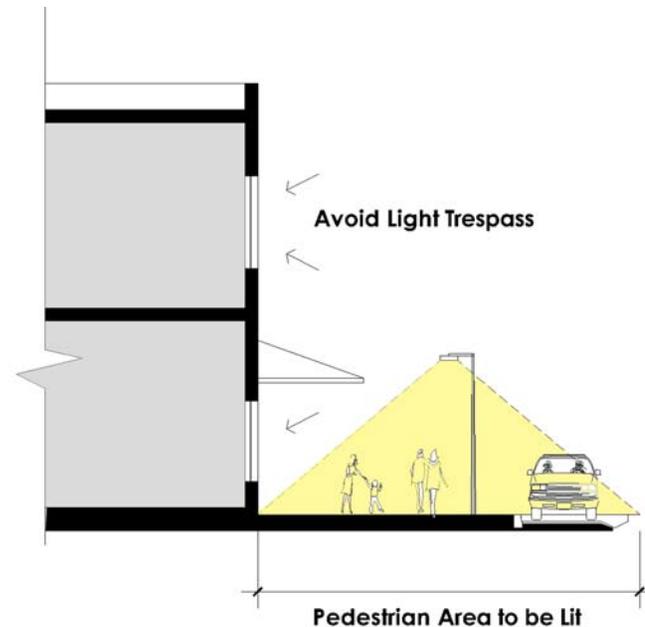
### 9.6 Light Pollution (LEED Sustainable Site Credit 8)



The District seeks to eliminate light trespass from building sites and improve the night sky access. It also reduces the development impact on nocturnal environments. Reduced light pollution creates substantial energy savings over the lifetime of the building.

Street lighting should maintain safe light levels while avoiding off-site lighting and night sky pollution.

New developments shall meet LEED Sustainable Site Credit 8 by not exceeding the Illuminating Engineering Society of North America (IESNA) footcandle level requirements as stated in the Recommended Practice Manual; Lighting for Exterior Environments, AND designing interior and exterior lighting such that zero direct-beam illumination leaves the building site. This requirement shall not take precedence over other City interests, such as security, wayfinding, etc.



#### Requirements

- **Comply with LEED Sustainable Site Credit 8.**
- **Provide “full-cutoff” luminaires.**
- **Keep light poles low and space more closely.**
- **Focus light downward.**

## SUSTAINABLE AND GREEN COMPONENTS 9

### 9.7 Reduce Heat Islands (LEED Sustainable Site Credit 7)

The goal of this recommendation is to reduce heat islands and minimize the impact on microclimate and human and wildlife habitat. Traditional dark non-reflective surfaces for parking lots, roofs, walkways and other surfaces absorb solar radiation and radiate it back to surrounding areas. In some urban areas, this has contributed to artificially elevating the ambient temperature by 10 degrees. This increases local HVAC equipment cooling energy consumption. This effect can be mitigated through the use of shading and the use of light colored materials that reflect the solar radiation.

As discussed in the building section of these Standards, it is strongly recommended that “green” roofs be incorporated in the district. The use of green roofs will play a large role in reducing stormwater runoff and heat islands.

Public Sidewalks shall comply with the LEED requirements for this credit. New developments providing sidewalk/walkway connections to the public walkways must meet the standards provided in the Standards.

Public structures shall meet LEED Sustainable Site Credit 7.1 and 7.2. It is encouraged that new developments provide light colored roofing in accordance with the LEED credit.

Under building parking is also encouraged in certain applications.

#### Requirements

- **Public Structures shall comply with LEED Sustainable Site Credit 7.1 and 7.2.**

#### **Greenroofs shall provide the following:**

- **Use light colored/high albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30% of the site’s non-roof impervious surfaces, including parking lots, walkways, plazas, etc.**
- **Place a minimum of 50% of parking spaces covered by parking structures.**
- **Use an open-grid pavement system (less than 50% impervious) for a minimum of 50% of the parking lot area.**

#### **In addition, provide one of the following:**

- **Use ENERGY STAR compliant and high emissivity roofing (at least 0.9) for a minimum of 75% of the roof surface.**
- **Provide a green (vegetated) roof for at least 50% of the roof area. Combinations of high albedo and green roof can be used providing they collectively cover 75% of the roof area.**

**SUSTAINABLE AND GREEN COMPONENTS 9**9.8  
Water Conservation

The presence of water to sustain life is critical. People can live without electricity and fossil fuels, but they cannot live without water. 97% of all the Earth's water is in the oceans, 2% is frozen at the polar caps, and 1% sustains animal/plant life on land. A community that can conserve water will be well positioned for adapting to the future.

Water is the only utility that the City administers. It is anticipated that in general Utility Rates for potable water are expected to escalate in the coming years as a result of over consumption and finite resources. Each year brings more drought and although South Florida has one of the highest annual rainfall rates in the country at over 60 inches per year, most of that is received in one or two unwanted short burst periods.

Native Landscapes have lower irrigation requirements and tend to attract native wildlife, including birds, mammals, insects, creating a site that is integrated with the natural surroundings. This will be a departure from the existing usage. Native plantings require less fertilizer and fewer pesticides, thus impacting water quality.

It is the intention is to provide Native plantings and Water Efficient Landscaping in public Greenspace areas. The intention is to limit the use of potable water for irrigation. At the current time a quantity has not been determined, but the intention would be to use Recycled Site Water for Irrigation of the community plantings.

Public Buildings and restrooms will employ the use of Innovative Wastewater technologies such as low flow fixtures and waterless fixtures where possible. Current Codes do not allow for the use of greywater or blackwater systems. Lower water usage will result in lower water connection fees.

There is reclaimed water available at the local water plant. This reclaimed water is suitable for irrigation and possibly "HVAC process" purposes only. Research will need to be performed to determine the cost of extending supply lines to the site. There is a study currently underway to analyze some of these possibilities.

## Requirements

- ***Comply with LEED Water Efficiency Credit 1.***

## SUSTAINABLE AND GREEN COMPONENTS 9

9.9 Building Requirements As previously stated, all buildings in the MainStreet District are required, as a minimum, to be certified by the Florida Green Building Coalition (FGBC) or LEED certified by the United States Green Building Council (USGBC).

9.9.1 Sustainable Site Sustainability starts at the project site. The essence of Sustainability is that only the water, air, energy, and other elements entering a site are consumed by the site. While this is somewhat unattainable, there are reasonable steps which can be taken to minimize the negative impact of one site onto another. The goal is to minimize this impact when the building is sited, constructed and operated. This will preserve as much of the natural ecosystem as possible on an ongoing basis.

9.9.2 Materials and Resources The goal of these requirements is to reduce waste. Proper use of resources minimizes waste, requiring less landfill space and minimizes the need to extract additional resources from the lithosphere for use in the biosphere. Additional goals include using local resources so that transportation costs are lowered by minimizing the need for fossil fuel powered transportation in delivery.

### Principles

- **Control Erosion to reduce negative impacts on water and air quality.**
- **Maintain a high density in the MainStreet area to foster the urban development goals. Plan for a minimum density of 60,000 square feet per acre.**
- **Reduce the development of land into parking lots. Parking behind, on the side and underneath buildings is required. Land usage shall primarily be either for buildings or greenspace.**
- **Encourage the use of Local Materials. Using locally harvested and locally manufactured materials reduces the impact of transporting the goods and improves the local economy.**
- **Increase Resource reuse and Construction waste management. The majority of the site has no existing development to reuse. Before construction begins develop a waste management plan. Divert and recycle a minimum of 75% of waste material by weight.**
- **Encourage the use of Materials with Recycled content. Reduce the amount of materials removed from the lithosphere and placed into the biosphere. By using materials with recycled content, there is less need to extract more resources for manufacturing.**

### Reference

**9.3: Stormwater Management; 9.5: Alternative Transportation; 9.6: Light Pollution; 9.7: Heat Islands**

## SUSTAINABLE AND GREEN COMPONENTS 9

### 9.9.3 Water Efficiency

Water is the critical resource of the future. As stated in the Water Conservation section, water is the only utility that the City administers. It is anticipated that in general utility rates for potable water are expected to escalate in the coming years as a result of over consumption and finite resources.

The City will bear the cost of increasing the water production capacity of its plants at some future date when the community's demands exceed the capacity. To minimize the costs encumbered in this situation, it is recommended that fairly simple water conservation techniques be implemented on a large scale.

#### Principles

- **Encourage the installation of waterless urinals. This technology is low tech and very common. Primary draw backs are attributed to smells associated with the lack of cleaning the surrounding area. Research has shown that there are many successful installations, including the “Miami Dolphins” Stadium.**
- **Encourage the installation of fixtures that reduce the use of potable water. Install Fixtures that meet LEED Water Efficiency Credit 3, by reducing the aggregate water use of the facility by 20% less than the baseline building, after meeting the Energy Policy Act of 1992 “fixture performance” requirements.**
- **Encourage the installation of technologies to reduce potable water demand. Use Infrared occupancy sensors and metering technologies accomplish these goals.**
- **Encourage the installation of Innovative Wastewater Technologies that will reduce the use of potable water for sewage conveyance. Innovative Wastewater Technologies in compliance with LEED Water Efficiency Credit 2, or use reclaimed water for sewage conveyance or cooling tower make-up.**
- **Discourage the Use of Ventless Clothes Dryers. This technology has two drawbacks for South Florida. 1) A portion of the water removed from clothes in the dryer is introduced into the interior space. South Florida already struggles with a continual challenge of de-humidifying ambient air to prevent mold/mildew problems inside buildings. Introducing moisture into the space will further aggravate the problem. 2) The “recirculated air” that carries the moisture away from the clothes is cooled by potable water. This process causes the entrained water to condense and be removed by down a drain. This is problematic in that this is a tremendous waste of potable water. The reason is because the average potable water temperature in South Florida is substantially higher than the rest of the country, so that it will take more than the design flow rate to effectively cool the device.**

**SUSTAINABLE AND GREEN COMPONENTS 9****9.9.4**  
*Energy Conservation*

Buildings in the United States consume greater than 30% of the total energy load and about 60% of the nations electricity. Currently, on a large scale, Energy is derived from either fossil fuels such as oil and coal, natural gas, nuclear fission, or hydroelectric generators. In Florida, most power plants are coal fired, with a few nuclear plants such as Turkey Point in the Miami area. There are dangers associated with nuclear power as well as coal fired plants. Coal fired utilities produce at least one third of total emissions of nitrogen oxides, (a major contributor of smog), and 2/3rds of all emissions of Sulfur Dioxide, a key element in Acid Rain. The combustion of coal to produce electricity is the largest generator of fine particles in the United States. These fine particles penetrate deep into the lungs of humans and cause cancer and respiratory illnesses.

One definition of Potential Energy is defined as mass x gravity x height ( $U=mgh$ ). Hydroelectric Power is generated by converting the potential energy of water at a high elevation, (One side of the dam), into electricity when it travels through the turbines as it changes elevation and trickles out the other side of the dam. Since there is very little elevation change across the state, there is very little opportunity for hydroelectric power.

Solar power is still more expensive than traditional power. Because it is difficult to mass-produce, it is more effective on smaller continuous loads. Technology to use solar power for water heating and remote site lighting is very common, and should be used when applicable.

As a result of the difficulty in finding simple energy sources, it is a better approach to focus our efforts on conserving energy. The following recommendations focus on energy conservation for buildings in the MainStreet area, such that impact to our current utilities are minimized, resources are not over consumed and future operational costs are minimized so that value is built into the community.

9.9.4 (cont.)  
Energy Conservation

Requirements

- **Commissioning is encouraged for all buildings. This is a process that ensures that all building systems perform interactively according to the contract documents. While each component purchased can be viewed as a commodity that has been tested thoroughly at the manufacturer's plant, the combination of systems for each building is unique. The benefits of fine-tuning the systems at start-up are that the energy savings are maximized, and the maintenance costs are minimized. It is estimated that commissioning increases energy efficiency by 5 to 10%. (On a 50,000 sq. ft. building, this could equal ~ \$5,000 per year). Commissioning should be in compliance with LEED Prerequisite 1.**
- **Maximize Overall Building Efficiency. Buildings must exceed the minimum level of energy efficiency of the Florida or Building code, or ASHRAE Standard 90.1, whichever is more stringent by 10% Calculation method shall comply with LEED Energy and Atmosphere Credit 1.**
- **Conserve Energy by installing energy efficient HVAC equipment. This can be accomplished by exceeding the Florida Energy Code minimum efficiency by 20% for residential electric driven Air conditioning equipment. Another method is to exceed the ASHRAE 90.1 standard by 20%.**
- **Conserve Energy by installing energy efficient office equipment Use Energy Star equipment to reduce plug loads. Equipment includes Copiers, Computers and refrigerators.**
- **Reduce Ozone depletion. This is accomplished by installing equipment that contain Zero CFC refrigerants.**

## SUSTAINABLE AND GREEN COMPONENTS 9

9.9.5  
*Indoor Air Quality*

On average, Americans spend 80% to 90% of their time indoors. As a result the quality of the indoor environment has a significant impact on the health, productivity and quality of life of people.

Mold and Mildew lawsuits are commonplace in the Broward County area. The most common or publicized instances are schools, courthouses and condominiums. The three major components of a mold outbreak are food, water and time. With the substantial amount of water vapor present in the ambient South Florida air, it only takes condensation at the wrong place to have a problem. Minimizing the food sources and proper building design to address water vapor are effective steps to reduce the risk of mold/mildew issues in a building.

In addition to mold and mildew problems other issues affecting Indoor Environmental Quality are the proper control of contaminants and ventilation effectiveness. Materials and construction sequencing can be implemented to minimize contaminants in the indoor environment. Once contaminants are introduced into the indoor environment, there are HVAC solutions that can be implemented to treat the problems.

Aside from contaminants, there are design issues that can lend to the more emotional well being of the occupants. These design concepts include daylighting/views, temperature control for occupants, acoustic design and illumination issues. The following recommendations are simple steps that will build value into new construction by providing a quality indoor environment for citizens.

## SUSTAINABLE AND GREEN COMPONENTS 9

### 9.9.5 (cont.)

#### Requirements

- **Provide a Construction IAQ Management Plan. Develop an Indoor Air Quality (IAQ) Management Plan for the construction and preoccupancy phases of the building. Performance shall comply with LEED Environmental Quality Credit 3. 1 and 3.2. The intent is to minimize building contamination prior to occupation. HVAC systems are particularly prone to contamination from particulate matter generated during construction activities. Proper measures during construction and a flush-out of the building prior to occupancy can minimize these effects.**
- **No Smoking. Provide zero exposure of non-smokers to Environmental Tobacco Smoke. Performance shall comply with LEED Environmental Quality Prerequisite 2.**
- **Provide CO2 Monitoring. This inexpensive sensor can be incorporated into a ventilation control system to modulate outdoor air intake to provide an indoor air quality level with no more than 530 parts per million of carbon dioxide at any time. When the occupant load in the building is low, the CO2 sensor can modulate the outside air volume down to save energy, as long as the building does not develop a negative pressure state.**
- **Use Low Emitting Materials. Met or exceed VOC limits for adhesives, sealants, paints, composite wood products and carpet systems. Provide materials that comply with LEED Environmental Quality Credit 4.**
- **Control Indoor Chemicals and Pollutant Sources. Provide permanent entryway systems to capture dirt/contaminants and prevent them from entering the buildings. Isolate rooms with chemical processes such as copying/print rooms and janitor's closets. Extend the walls surrounding these rooms to the structural deck and provide exhaust to prevent re-entrainment of these contaminants into the indoor environment. Locate Fresh Air intakes away from pollution sources, dumpsters, exhaust fans, etc.**
- **Provide for a thermally comfortable environment. Provide an environment that supports the productive and healthy performance of the building occupants. Building shall comply with ASHRAE Standard 55-1992, Addenda 1995. Provide permanent temperature and humidity sensors in the building that allow the HVAC system to control the environment to maintain a level of comfort.**
- **Provide for a visually comfortable environment. Provide an environment that supports a connection between the indoor and outdoor environments through the introduction of sunlight and views into the occupied areas of the building. A large portion of the Coconut Creek sense of place is derived from the outdoor environment. To encourage occupants to interact/appreciate the outdoor environment, new buildings shall meet the LEED Environmental Quality Credit 8 for daylighting and views. The views provide a better quality of environment. Daylighting will provide connection to the natural cycles of the sun and lower energy costs by reducing the dependence on artificial lighting.**

## DEFINITIONS

**Albedo:** The ratio of reflected light to the total amount falling on a surface. A high albedo indicates high reflectance properties.

**Arcade:** An architectural element composed of arches, evenly spaced in a continuous row that forms a semi-enclosed corridor. It provides continuous shade for the pedestrian.

**Awnings:** An element attached to the building facade, which provides shade at ground level.

**Bike Lane:** The area of the right of way dedicated exclusively to bicycle traffic. Unless otherwise noted, all bike lanes shall be four (4) feet wide.

**Bridge:** See Pedestrian Bridge

**Buffer:** Surface parking lots shall have a buffer consisting of hedges, trees, walls, fences, or a combination thereof. A living barrier shall be a minimum of 4 feet wide at its narrowest point and is a minimum of three feet above finished grade. It shall be continuously planted with a hedge or shrubs spaced a maximum of 30" apart. A nonliving buffer shall consist of a wall that is a minimum of three feet above finished grade. Regardless of type of buffer chosen one tree shall be planted every 35' or less.

**Bulb out:** All parallel parking spaces adjacent to an intersection shall be replaced with a curbed landscaped area of the same width, planted with shrubs and one tree. Unless otherwise noted, all trees shall be the same species for the length of the street.

**Continuous Trench:** A trench, approximately 30" deep and six (6) to eight (8) feet wide that runs continuously parallel to the curb. It is filled with structural soil and then covered with geotextile, a base course, and paving. Openings are left for trees and shrubs, which are planted at intervals within the trench. This method of planting street trees results in a look that is similar to standard methods but allows more room for tree root systems, resulting in longer life for the trees.

**Daylighting:** The use of controlled natural lighting methods indoors through top lighting (skylights), side lighting (windows) and/or uplighting (reflection).

**Encroachments:** Any element that crosses the right-of-way from a private development into public property is said to be "encroaching into the public right-of-way".

## DEFINITIONS

**Greenroof:** Vegetated roof covers, with growing media and plants taking the place of bare membrane, gravel ballast, shingles or tiles. The number of layers and the layer placement vary from system to system and greenroof type, but at the very least all greenroofs include a single to multi-ply waterproofing layer, drainage, growing media and the plants, covering the entire roof deck surface. (See also: Section 9.7 Reduce Heat Islands.

**Liner Uses:** Storefronts and building fronts that conceal a larger use from view such as a parking garage.

**Pedestrian Area:** The area within the public right-of-way primarily dedicated for pedestrian use. This area may contain a sidewalk, landscape verge, and outdoor seating spaces.

**Pedestrian Oriented Use:** A building use which is intended to encourage walk-in customers and which generally does not limit the number of customers by requiring appointments or otherwise excluding the general public. A pedestrian oriented use may suggest or require appointments for services when primarily for the convenience of the customer, such as reservations with restaurants, beauticians or optometrists to avoid being turned away due to unavailability.

**Pedestrian Refuge:** The space located within the medians of the streets that protects the pedestrian from vehicular traffic. This is used in streets with multiple lanes of traffic in both directions.

**Parallel Parking:** Shall consist of parallel parking spaces 8' wide by 20'. Parallel parking shall be built with pavers.

**Pavers:** Pavers are easy to replace when damaged, provide access to utilities, and improve drainage by allowing water to percolate. They are decorative and should be used to define space and the relative scale of varying street types. Pavers must be set on a porous surface and be placed with a joint of at least 1/8" between all pavers. Interlocking pavers without spacers are not permitted. Pavers must include at least 25% recycled content.

**Pedestrian Bridge:** Shall provide a minimum of six (6') feet clearance above high water line at mid span. Bridge design shall meet all ADA Accessibility Guidelines (ADAAG). Maximum grade shall be 1:12 or adequate intermediate landings shall be provided. Handrail shall be continuous on both sides. Nonslip surfaces shall be used.

**Plant beds:** Shall consist of a minimum depth of thirty (30) inches of soil and shall be planted with shrubs or ground cover such that coverage will be 100% within six (6) months of planting. Plant beds must have a minimum width of five feet six inches (5'6".) All plant material and planting specifications to follow Coconut Creek Code of Ordinances. Underground utility lines should be kept clear of plant beds.

## DEFINITIONS

**Porous paving:** Porous paving reduces runoff and if installed atop a porous reservoir helps to filter pollutants from runoff. It can be used in parking lots, along canal type streets where there is little or no vehicular access. Consists of open-graded angular aggregate, approximately 3/8" in size, sorted to exclude fines and bound with an asphaltic, Portland cement, or epoxy binder. Must be installed on top of a porous reservoir consisting of stone or gravel enclosed in filter fabric.

**Recycling:** Recycling receptacles for all materials that are collected by the contracted recycling company shall be provided adjacent to all trash receptacles. At a minimum, two materials shall be recycled. The style of all trash and recycling receptacles shall match.

**Right-of-way:** The line marking the boundary between the public domain and the private domain.

**Setback:** An establish physical separation between the face of a building and the right-of-way. A maximum setback establishes a "build-to" line where a building's primary facade shall be constructed.

**Lighting:** Combination lighting includes street light, banner arm and pedestrian light. Street lighting shall not exceed eighteen (18) feet in overall height. Lighting should meet but not exceed the recommended levels set by the Illuminating Engineering Society (IES.) Consider low-voltage and solar lighting wherever possible.

**Structural Soil:** A mix of crushed stone (3/4 to 2 inches in diameter) and clay loam which is sometimes amended with nutrients or binders. The stone provides the stability to install paving on top, but retains enough soil-filled spaces to allow for root penetration even when compacted. Also called engineered soil. (CU-Structural Soil or similar.)

**Signage:** No sign shall be greater than eighteen (18) feet in height overall. Signs should be clear and easy to read and should match the character of the buildings.

**Travel Lane:** The area of the right of way dedicated exclusively to vehicular traffic. All travel lanes shall be eleven (11) feet wide.

**Trash Receptacles:** Shall be provided adjacent to all recycling receptacles. The style of all trash and recycling receptacles shall match.

**Trees:** All trees shall be of a species permitted by Coconut Creek Code of Ordinances section 13-444. The minimum tree size shall be in accordance with the standards set forth in that section. A minimum of fifty percent (50%) of all plant material with the exception of sod shall be native species. Species selection shall be consistent for the length of the street.