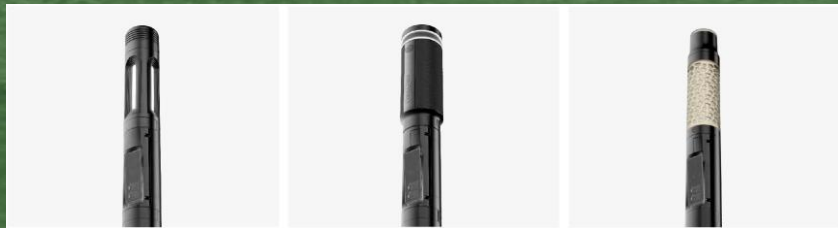


**City of Coral Gables
Innovation and Technology**

SMART CITY POLES INDUSTRIAL DESIGN

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CHIEF INNOVATION OFFICER / DIRECTOR OF INNOVATION AND TECHNOLOGY

OCTOBER 2022

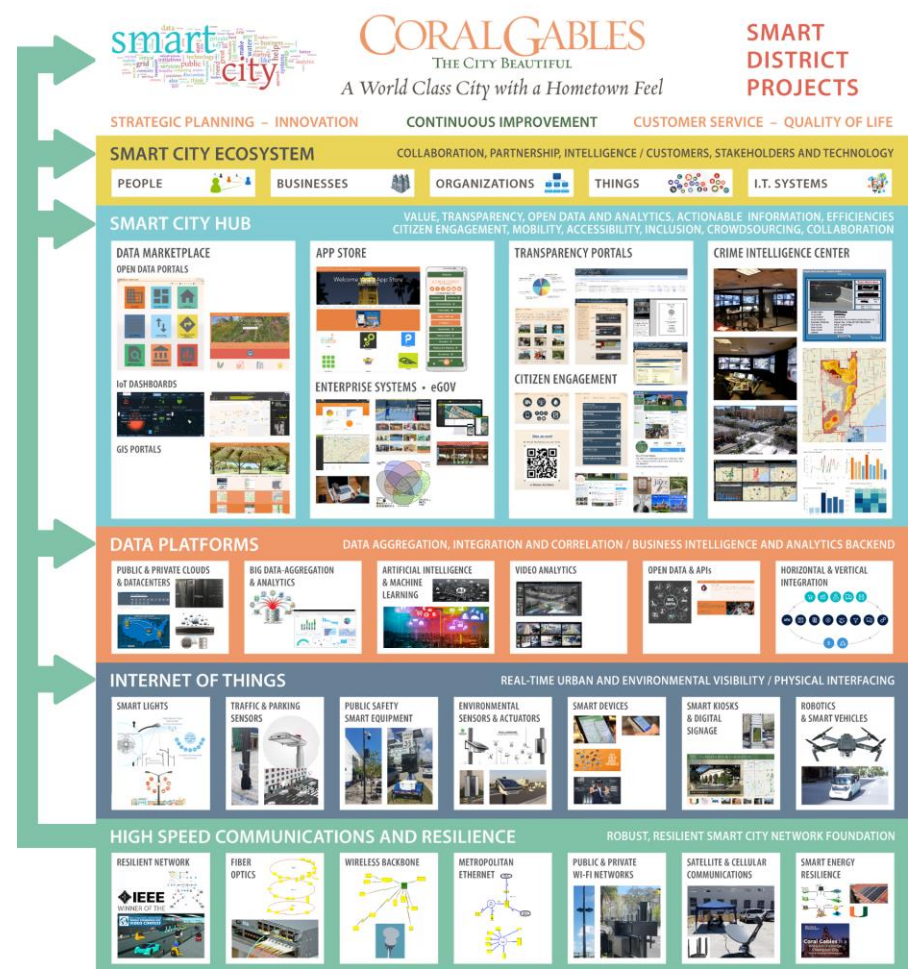
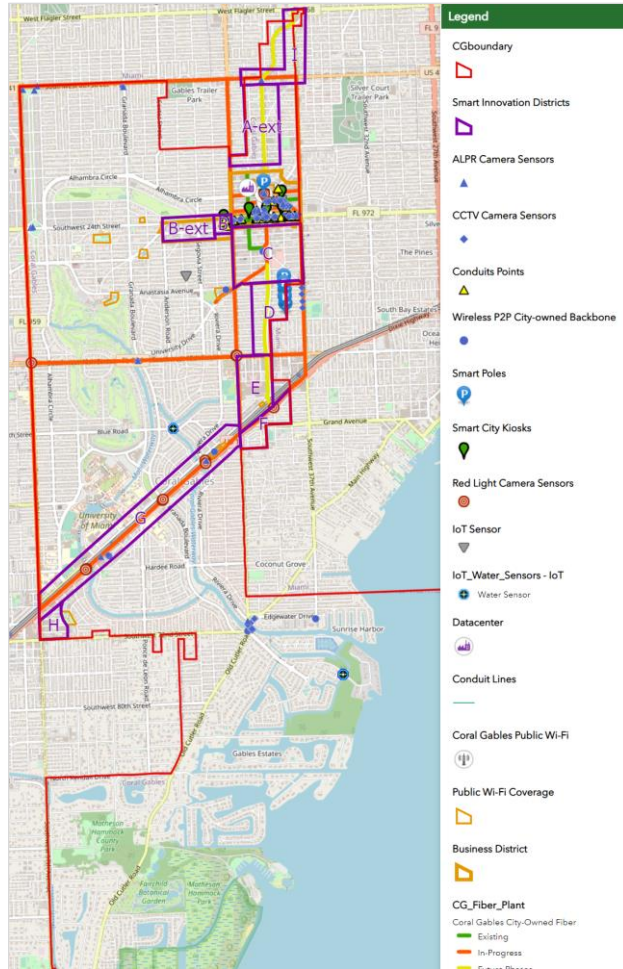


**CORAL
GABLES**®
THE CITY BEAUTIFUL



Smart Districts Technology Infrastructure Expansion – Smart City Poles

- **Resolution 20-1243:** Agreement with Pininfarina and Ekin to provide the city with **objective design standards for smart city street poles** and a **proof-of-concept modular design** of cutting-edge consolidating technology that allows for the cost-effective co-location of multiple functionalities into a single pole
- **Agenda Item 22-3565:** Presentation on Smart Districts - Broadband Infrastructure Expansion Project
- **Agenda Item 22-4274:** Innovation and Technology demonstration of new homegrown Smart City Digital Twin platform and Horizontal Integration Dashboards
- **Resolution 22-4724:** Fiber Optic Backbone Expansion Project construction award



Smart City AI-Powered Modular Pole



4 Phases:

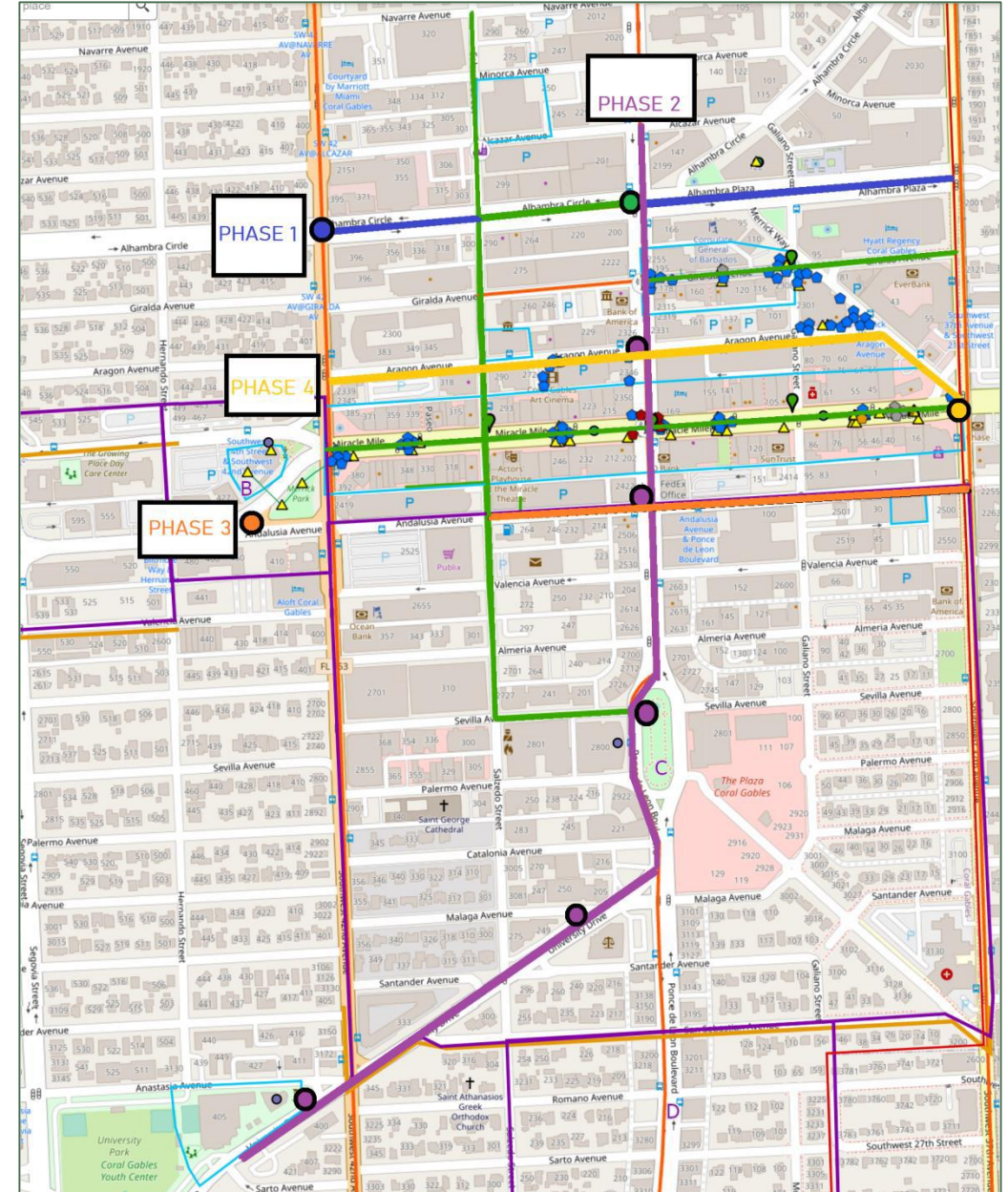
1. Financial Corridor on Alhambra Cir
2. Ponce de Leon and University corridors
3. Mobility Corridor on Andalusia
4. Arts & Culture Corridor on Aragon, + Merrick Way

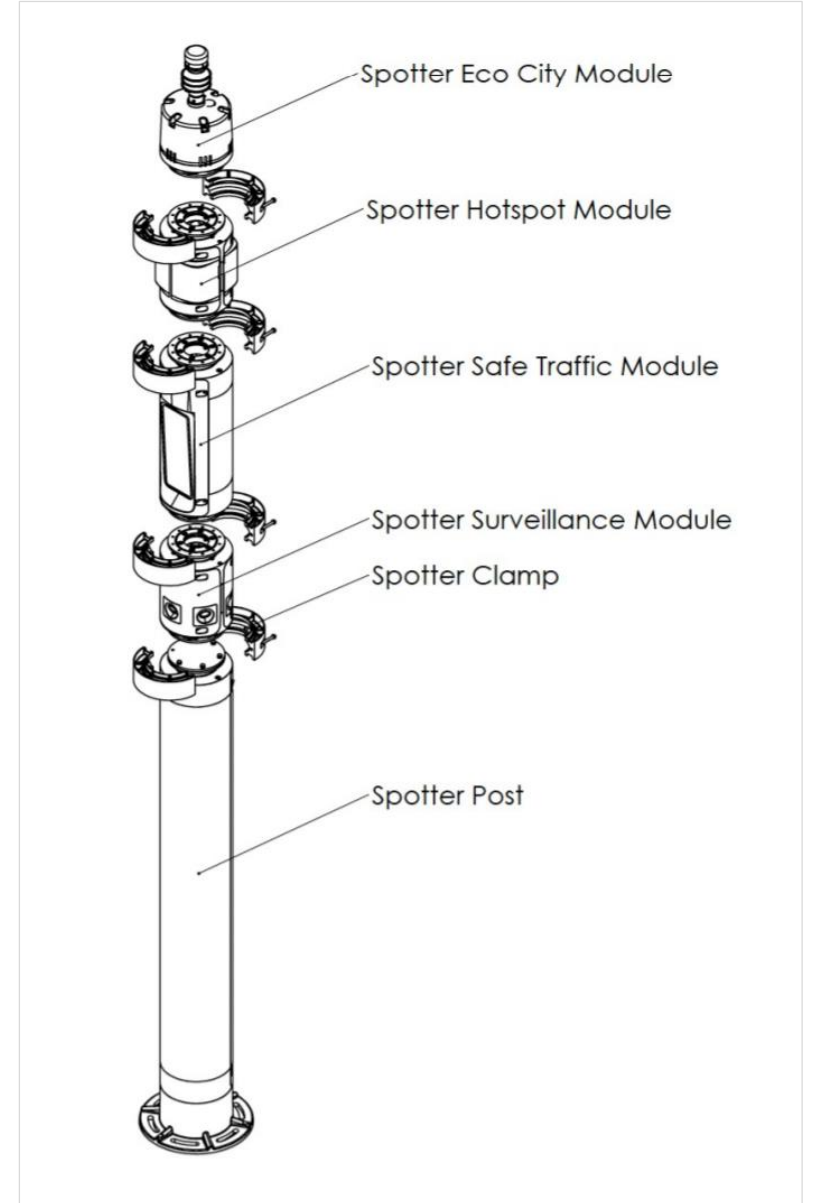
Expansion Project:

- 25 additional fiber optics corridor segments
- **8 additional smart city poles** (public Wi Fi, cameras, sensors, lighting, incorporate new **Coral Gables industrial design** and aesthetics)
- Connect multiple City Buildings/facilities: Youth Center, Adult Activity Center, Museum, Mobility Hub, Parking Garages 2 (Museum Pkg) & 6, Fink Studio/Econ. Dev., Ponce Circle

Benefits/Impact:

- High speed connectivity & capacity for city services
- Enhanced network/telecommunications resilience
- Digital services and public connectivity for residents, businesses/startups, students, visitors
- Quality of life, Enhanced citizen services
- Public safety
- Mobility
- Digital inclusion, telehealth, tele ed, telework
- Situational awareness, visibility, urban analytics, automation, real time actionable information (environmental, traffic, safety)
- Economic, entrepreneurship & jobs opportunities
- Tech/innovation incubators/accelerators/scaleups, P3s, technoparks, thinktanks, STEM R&D





City of Coral Gables

Smart Infrastructure Pole Design Program

01. Brand Audit History & Heritage

Founded in 1925, Coral Gables is the result of one man's extraordinary vision and faithful commitment to that ideal, Mr. George E. Merrick.

Merrick named Coral Gables after the home he grew up in, which was made of limestone, a coral-like exterior, fitted with a gabled roof.

"I have given my life to the development of our city and to the working out of an ideal."

Coral Gables - Where your 'castles in Spain' are made real".

#Historic #Timeless #Classic #Dream
#Style #Sophisticated #Community



George E. Merrick



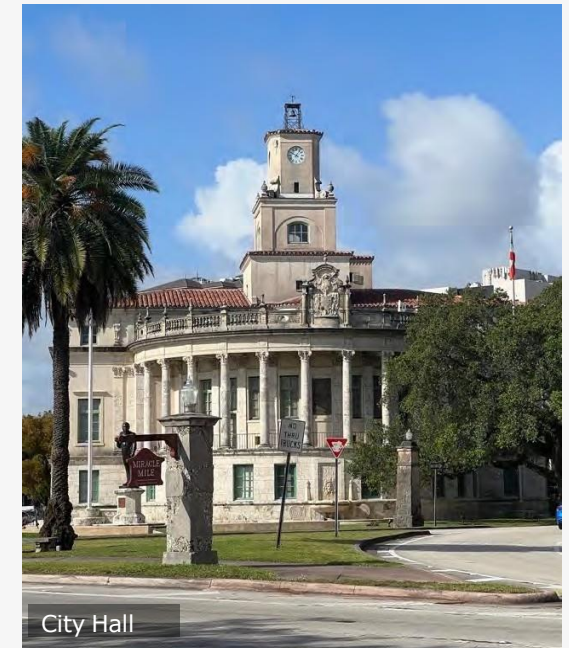
Merrick House



01. Brand Audit City Tour

As a part of the Audit, we did several tours of the City of Coral Gables to observe its architecture, design details and learn about its history and heritage.

We covered several old landmarks like the Venetian Pool, Biltmore Hotel, City Hall and Miracle Mile as well as some of the newly developed areas such as Geraldo and the newly constructed Plaza building by Ponce Circle Park.



Introduction

City Beautiful

Designed from the outset as an international community, the physical and cultural landscape of Coral Gables reflects the intent of its master planner.

A lush tropical backdrop complemented by classic Mediterranean architecture is an ideal setting for a community alive with diversity and activity.



Introduction Mediterranean Architecture

The city's distinctive architecture style draws inspiration from several ideologies; Spanish being the most prominent.

Blending different elements from the Spanish Renaissance, Spanish Colonial with that of the Italian Renaissance defines the city's Mediterranean architecture. Books published in the 1910's and 20's set a high standard for architecture and were used to learn about harmony, proportion and detailing.

Features:

- Large, Symmetrical Facades
- Red Clay Roof Tiles
- Stucco Walls
- Ornate Archways
- Wrought Iron Balconies, Window Grilles, and Decorations
- Mediterranean gardens, patios, and terraces
- An Outdoor Living Space



City Tour Public Art & Sculptures

Several metal sculptures, installations, hand-painted and sculpted pieces of art can be found around Coral Gables. These not only add young and vibrant vibes to the city, but also serve as beautiful artifacts with interesting stories that attract tourists from other cities and towns.

#Young #Vibrant #Bright #Colorful #Lively
#Beautiful #Friendly #Community #Art
#Considerate #Attraction #Cultural



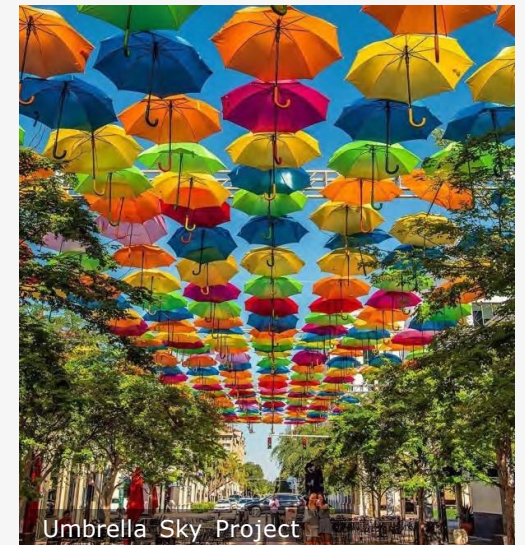
Coral Forest: hand-sculpted marble structure



Sculpture by Rafael Barrios



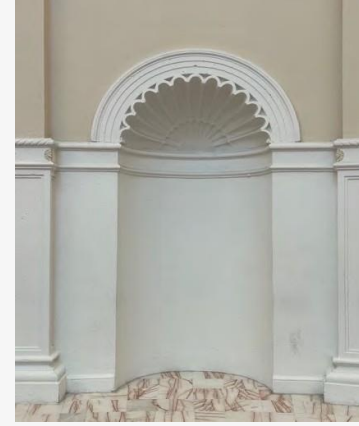
Hand-painted Venetian inspired posts



Umbrella Sky Project

City Tour Ornate Archways & Overhangs

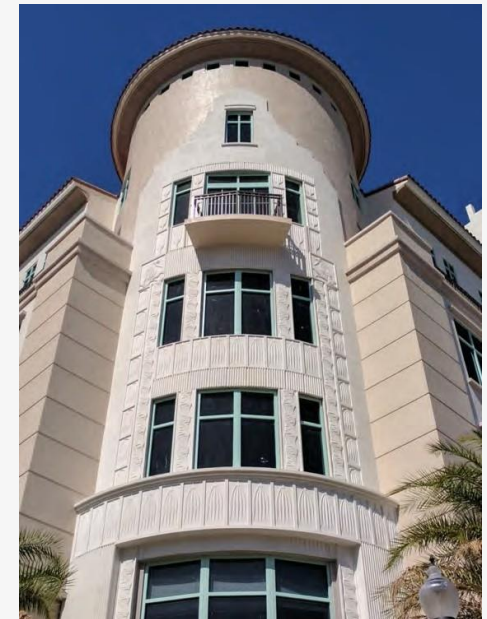
A notable feature of the Mediterranean style of residences is the presence of arched doors and windows along with overhangs at doorway entrances. The sizes of these fenestrations are usually kept greater to make for an open and airy environment.



City Tour Structural Integration

A plenitude of classical design elements like columns, parapets, and pediments are incorporated in the Mediterranean Revival architecture style. They can be either used as structural supports or merely for ornamentation purposes.

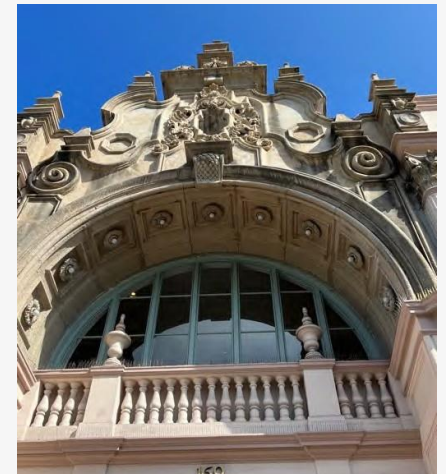
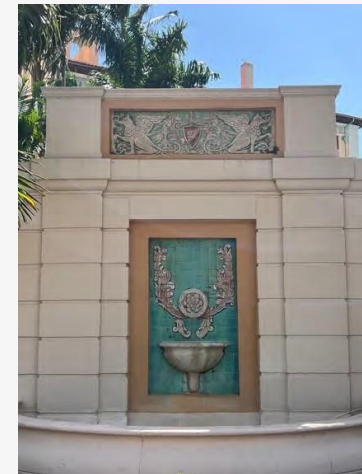
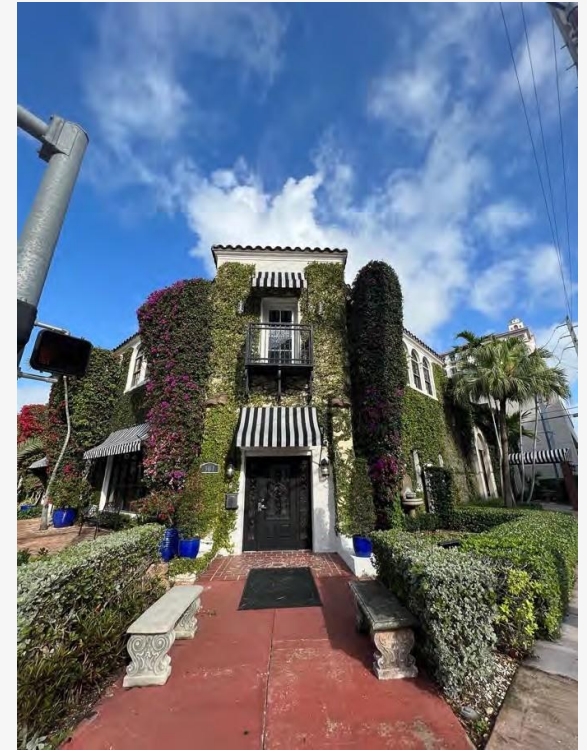
Italian Renaissance influenced designs where the columns used could be twisted, ornate, or spiral with beautiful carvings. These columns can be seen at the grand entryways, supporting arched doorways, in porches, or between balusters.



City Tour Symmetry of facades

The exterior is the second most prominent element making this style different from the rest. To add contrast to the deep red-tiled roofs, the facades are mostly buff-colored, or in shades of pastel. They are always covered in stucco work, a feature of the Spanish styles.

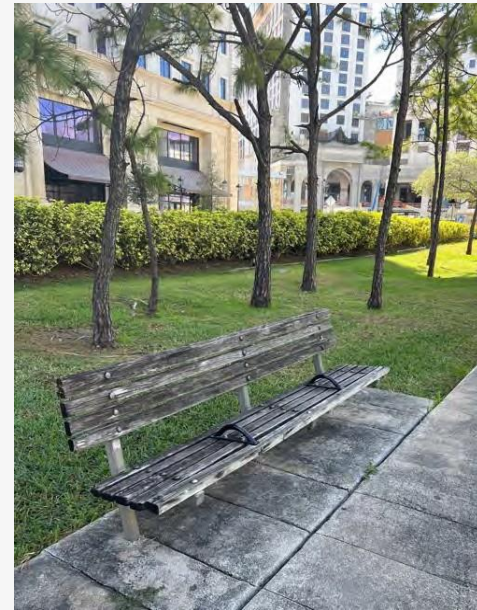
However, the Italian aspect of the facade makes it unique. The symmetry is stressed upon above all else to give it a solemn appearance. The exteriors are also covered in lime paint to preserve authenticity. Planters and creepers are also used to decorate a lot of structures, adding to the greenery of the city.



City Tour City Furniture & Signages

One can see a wide variety of styles when it comes to the city's furniture, accessories and signages. From rustic wooden benches to vintage styled signages to having touches of modern and more youthful design languages in some of the newer additions to the landscape, Coral Gables has it all.

#Rustic #Old charm #Communicative
#Young #Designer #Clear #Considerate
#Friendly #Nature



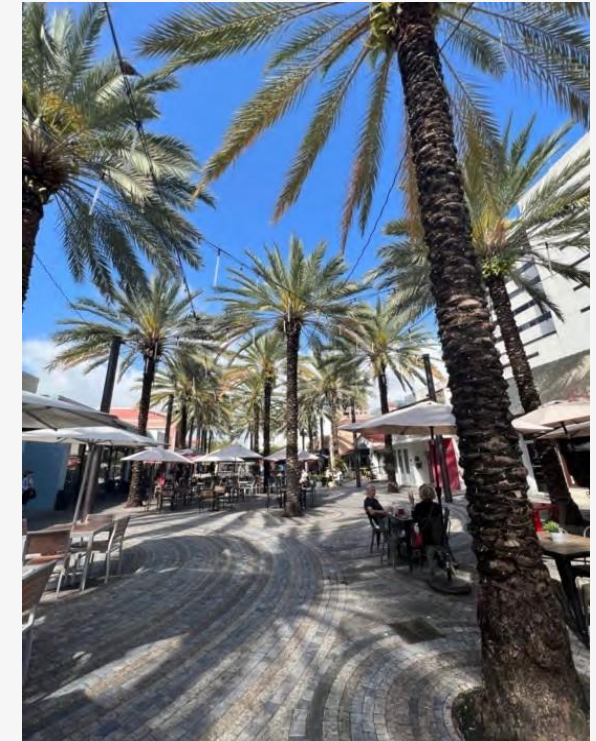
City Tour Street Lighting

Street lighting in the Coral Gables ranges from traditional lampposts to more modern sensor-based lighting as well as boho string lights for the fun and playful vibe.



City Tour Flora

It is very common to sight lush green facades as well as neatly lined royal and date palm trees along the streets in Coral Gables. Aged live oak trees that were carefully and deliberately planted on either side of most residential areas also offer a thick, shady canopy, keeping them cool and protected in the tropical weather of Florida.

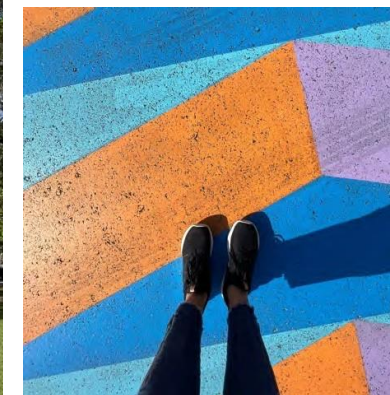
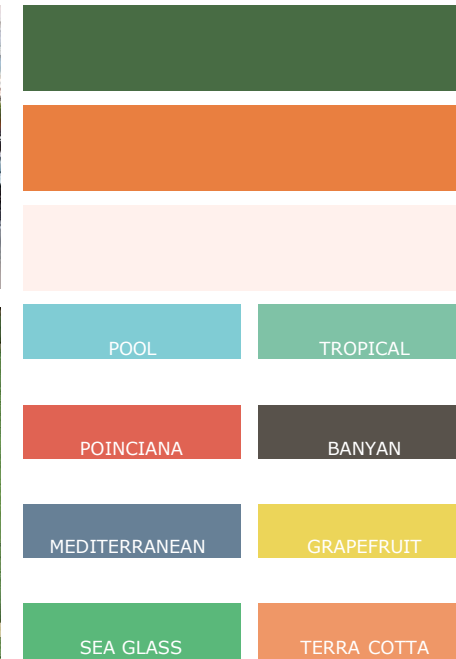


City Tour Color Palette

Primary Color Palette combines a subdued orange (sourced from terra-cotta seen prominently throughout the city) and a deep green (sourced from lush flora seen throughout the Gables) with a soft cream color (inspired by the warm light and ivory coral building materials).

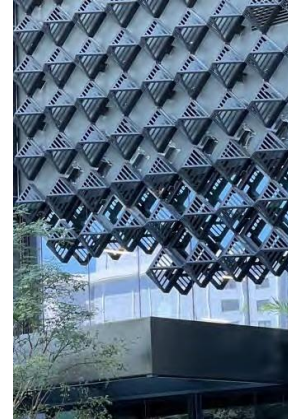
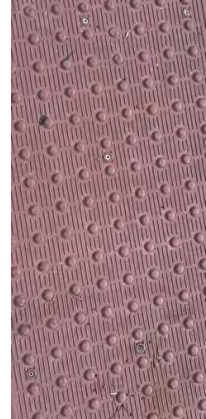
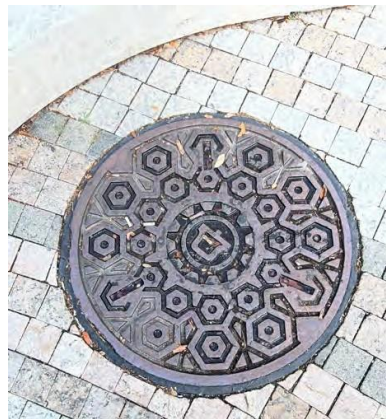
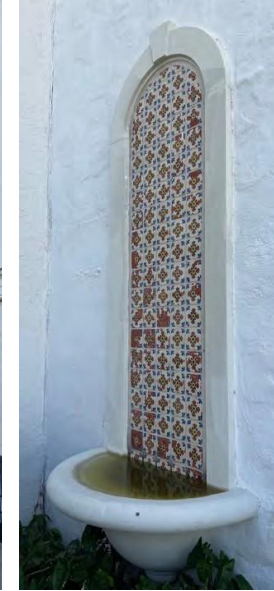
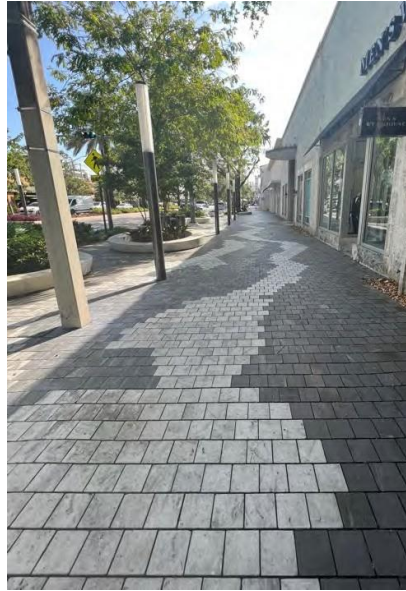
The combination of these colors represents our uniquely ownable environment, a combination of Mediterranean style architecture, beautiful gardens, and historicity. The secondary colors help add color and vitality to the city and can be seen throughout in the form of art, installations, and city architecture.

#Lively #Classic #Heritage #Earthy #Warm
#Emotional #Considerate #Smart #Friendly



City Tour

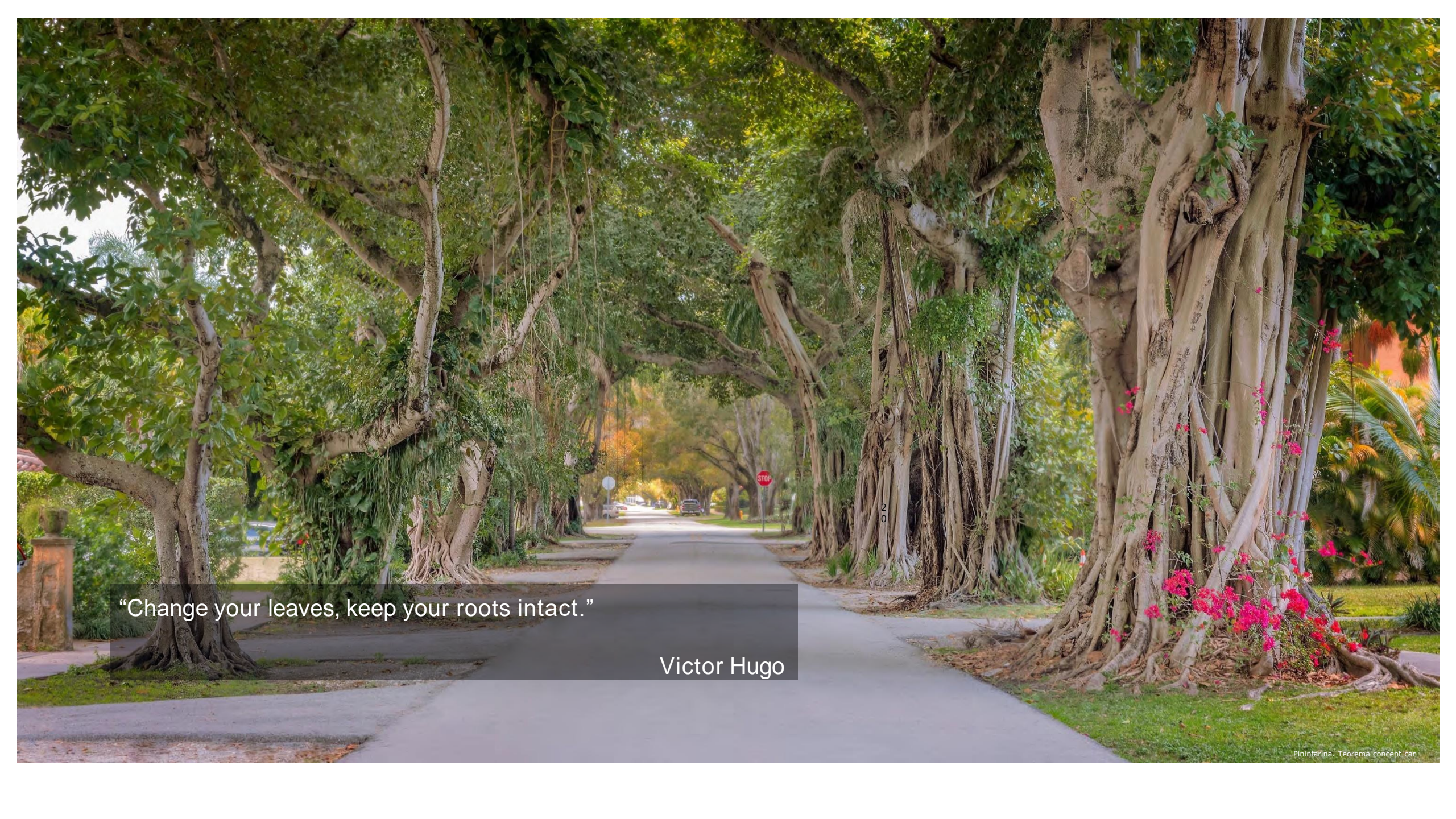
Texture & Pattern Palette



City Tour Interactive Technology

Residents and tourists have got quite familiar with these interactive kiosks in Coral Gables that help them by offering information on key landmarks around as well as offering wi-fi services. They are an attractive feature and are an example of integrating technology into the urban landscape of the city.

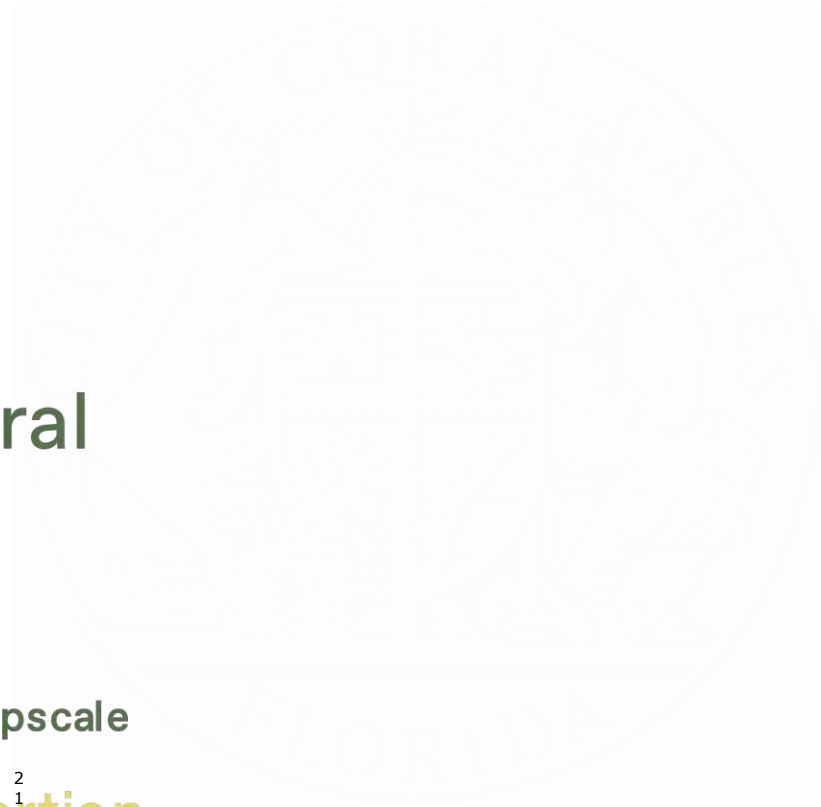




“Change your leaves, keep your roots intact.”

Victor Hugo

Coral Gables: Brand Audit
Summary: Design DNA



Coral Gables:
Brand Audit
Action points

1

Respect

Respect Mr. George Merrick's vision and carry it forward and beyond.

As the city grows and adapts with each new generation, it strives to carry on Merrick's dream. Through our work, we aspire to contribute to this timeless tradition of excellence and beauty and pay homage to his great vision.

2

Inspire

Take inspiration from the Mediterranean architecture and design features.

The city of Coral Gables represents the best of everything. We wish to take inspiration from its carefully planned design details such as the arches, colors, patterns, flora etc. found to be able to integrate into it seamlessly.

3

Dream

Think beyond to create a cohesive brand language going forward.

With rapid change and development, we aim to explore various solutions to integrate technology and interactivity into the city's existing design vocabulary and create a larger foundation for the city's next technological advancements.

02. Summary: Interviews Key Insights

1. Coral Gables as a City of Contrasts: On the 2 sides of the same coin, we have –

Rich history,
heritage, arts
and culture



Integration of
innovative and
futuristic tech

Design Approaches that stem out:

- a. Take best practices for Mediterranean architecture (1920s) and city guidelines seriously and design to blend in with that.
- b. Go completely modern: While the current identity of Coral Gables is very powerful, it is worth exploring directions that contradict that very deliberately curated identity by deviating from the norm to create an interesting tension between the elements. Exceptions only reinforce the rules by breaking conformities and deviating from directives as long as the current design identity is respected and dominant.

George Merrick's vision of building an oasis in the middle of wilderness was based on:

1. City Beautiful Movement of the 19th century



Royal Palm trees neatly lined



Venetian Pool

2. Inspiration from his travels to Europe: Barcelona, Paris, London, Italy.



Spain Square, a landmark example of the Renaissance Revival style architecture



St Peter's Basilica

02. Summary: Interviews Key Insights

2.Coral Gables – A myriad themes: Coral Gables' DNA is extremely deliberate and can be described in several ways. These are,

- A world-class city of excellence
- City beautiful
- A smart city
- A tree/garden city
- A city with research & innovation
- A city with history and tradition

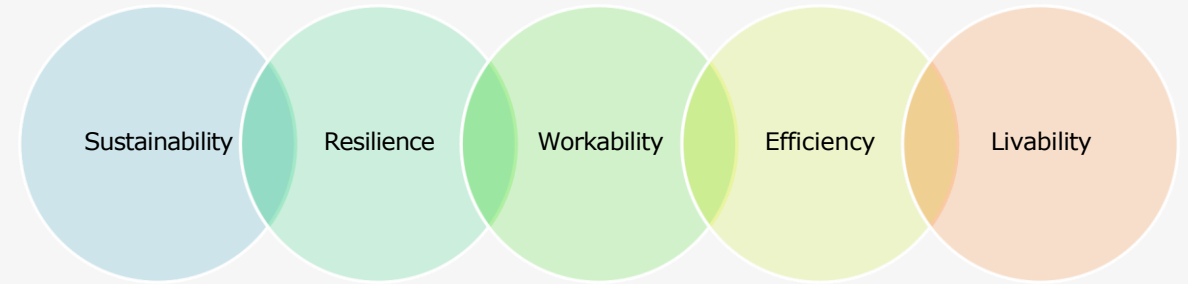
3. CMF:

Color: Pastels, not white;

Materials & Textures: Limestone, coral rock, stucco, metal

4.Customizable and Interactive Solutioning: Making tangible use of data by using real time data captured by tech devices to create interesting interactions that serve additional purposes and create responsive environments. Here, there is great potential for addressing social and environmental challenges through design here. Solving for accessibility and inclusivity.

Key elements that make up the smart city of Coral Gables:



“When introducing a new element of technology in the city; go completely modern. There should be no attempt to blend in and disguise tech in traditional forms. Its presence should be clearly distinguished. Its essential to gauge the scale of the element before trying to make it fit in the Mediterranean mold.” – Dr. El-Khoury

Concept Evaluation Smart Infrastructure Pole

01



02



03



04



05

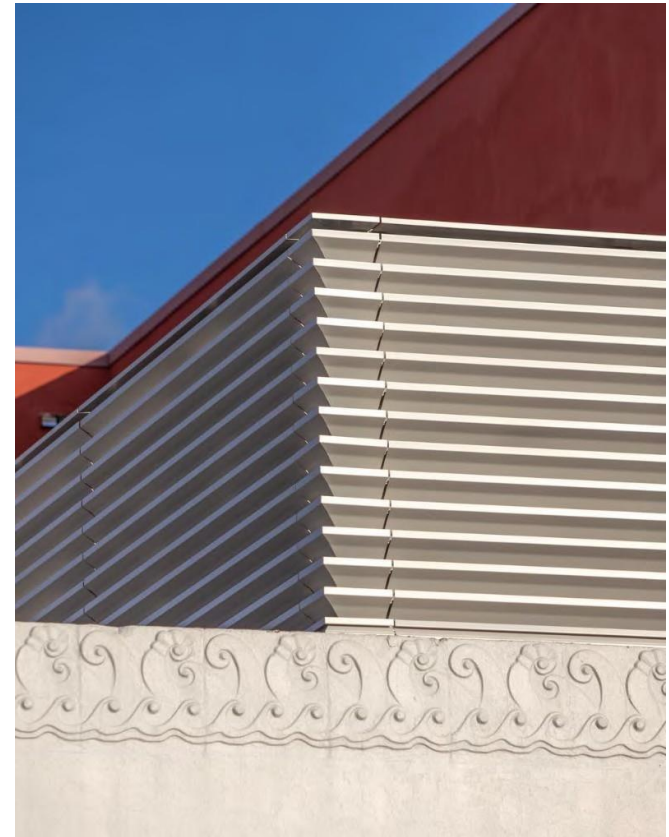


06



Concept 01 Archway into the Future

Inspired in Mediterranean architecture were the church and main building towers define the skyline of the city. This pole contains an arched portal that connects past and future.



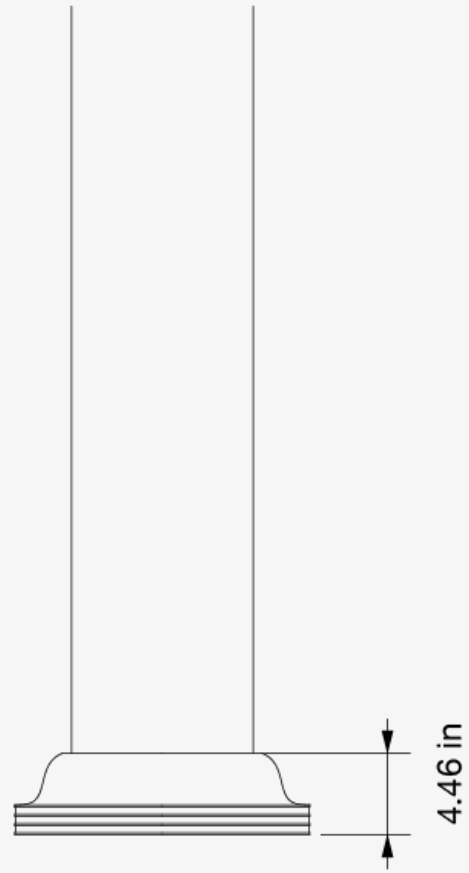
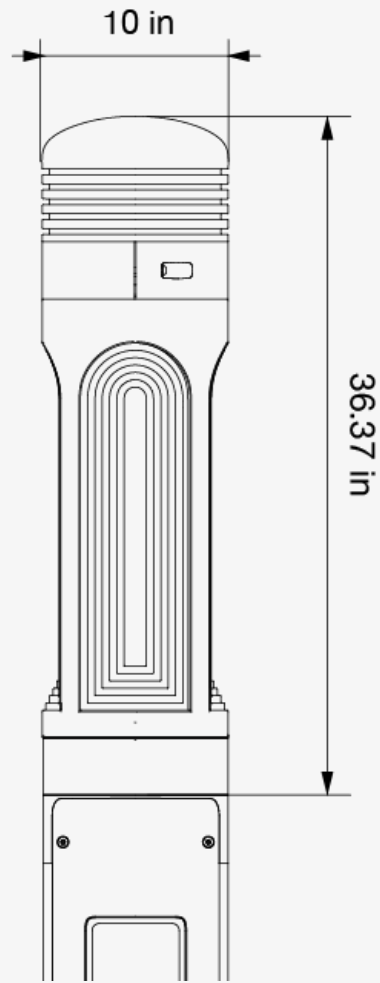
#tower #arches #repetition #lighthouse



Concept 01
Archway into the Future



Concept 01
Dimensions



Total height : 147.6 in

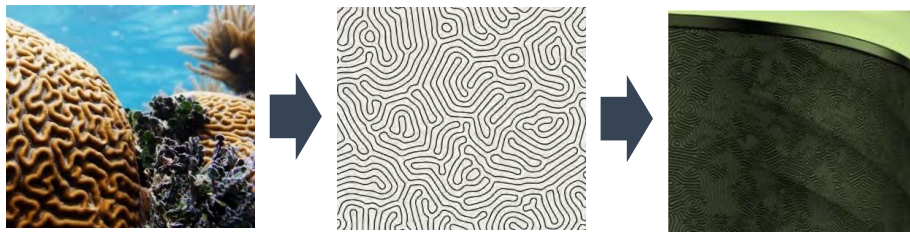


Concept 02 Twisted Module

This proposal in macro shapes takes inspiration from the twisted column architecture found often in Coral Gables, modernized with a surface treatment that represents the elegance of natural lines found on palm leaves.

For the micro details, a custom 3D pattern has been designed that is directly inspired from the organic sinuosity of coral itself.

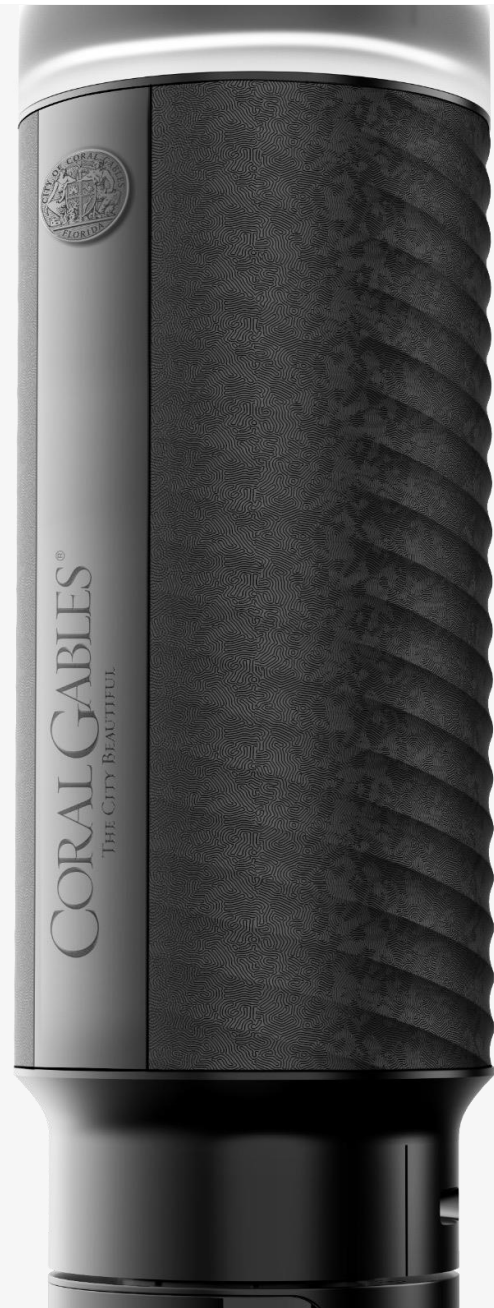
Applying a LED round light on the top creates a direct point of eye contact, expressing exactly what this new technology does: connecting people.



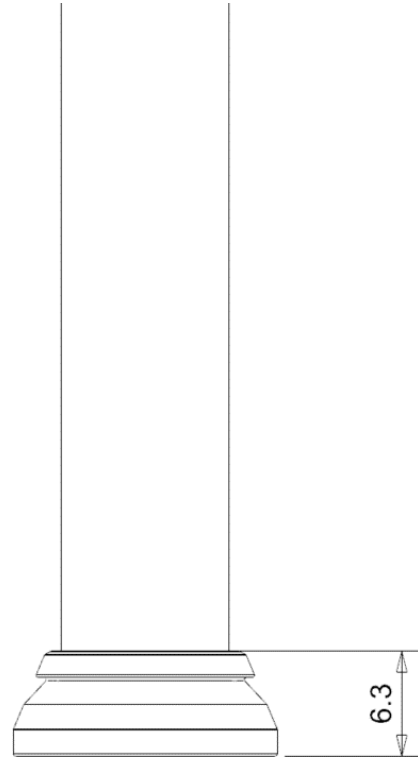
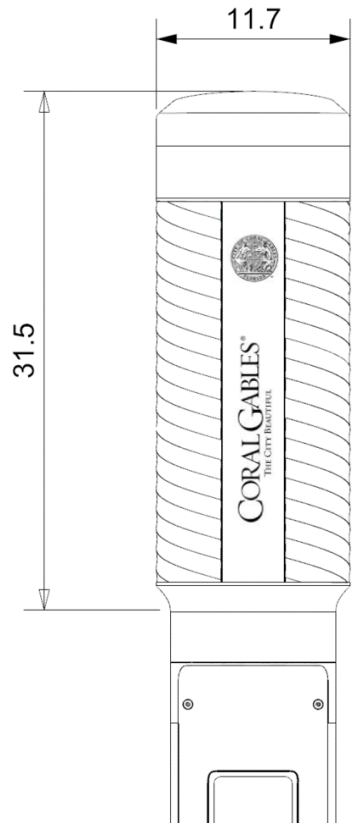
#statement #elegance #repetition #dynamic



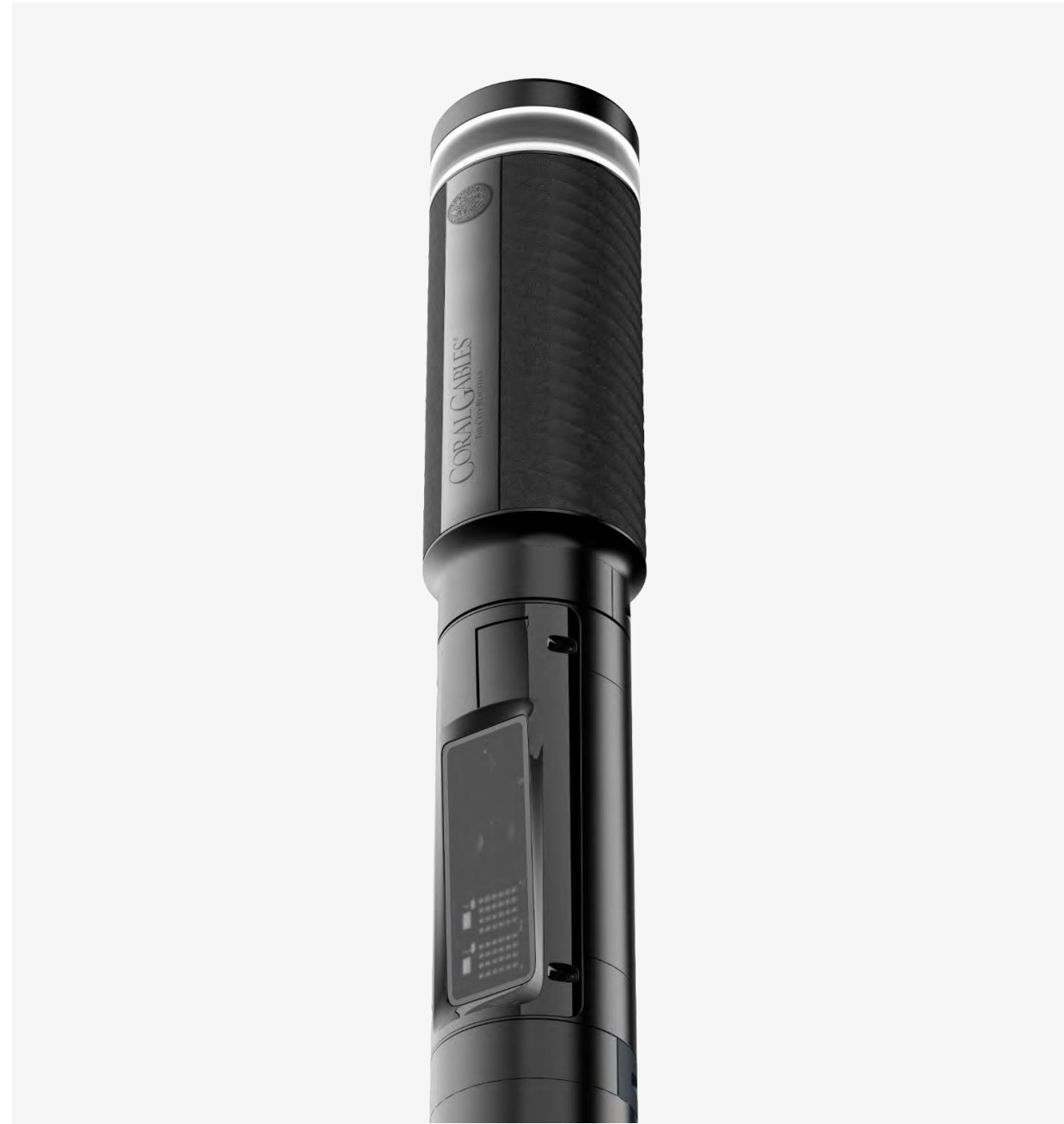
Concept 02
Twisted Module



Concept 02 Dimensions



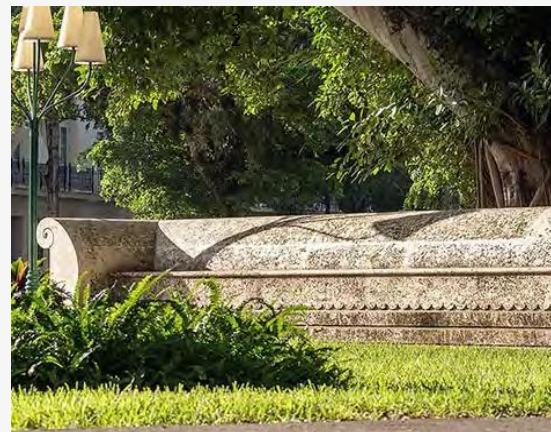
Total height : 146 in



Concept 03 Just like Coral

The properties of the rock is irregularly shaped rather than round cobbles and low-density (that is, highly porous). The closer you look at it, the more concave pits and concave cavities you see. It is a distinct material that emulates the identity of Coral Gables

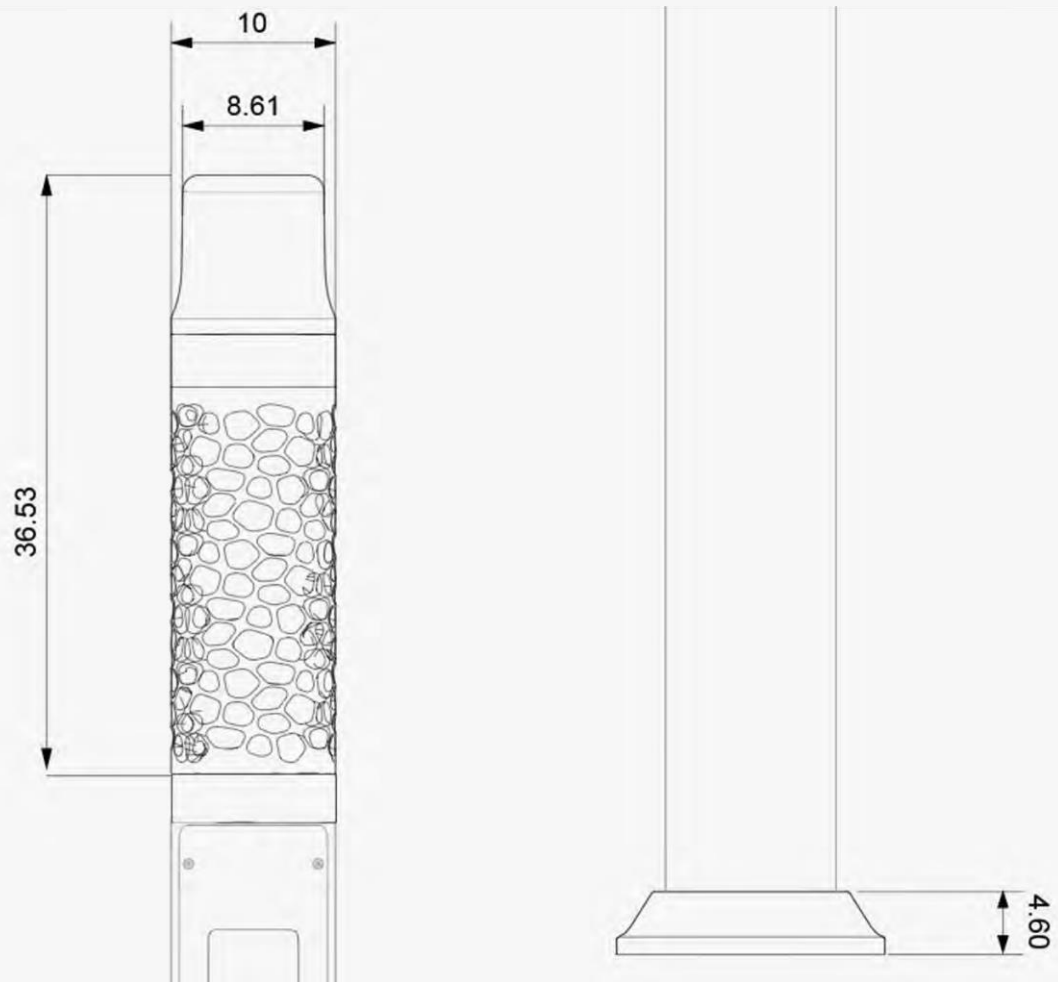
#Natural #Organic #Pure #Chamfered
#Elegant #Artistic



Concept 03
Just like Coral



Concept 03
Dimensions



Total height : 152 in



Concept 04 Triad

Historic White Way Street Lights

Inspired by the linear detailing and radiated chamfers present on Coral Gables Historic "White Way" street-lights, Triad proudly displays its three illuminated antennas.

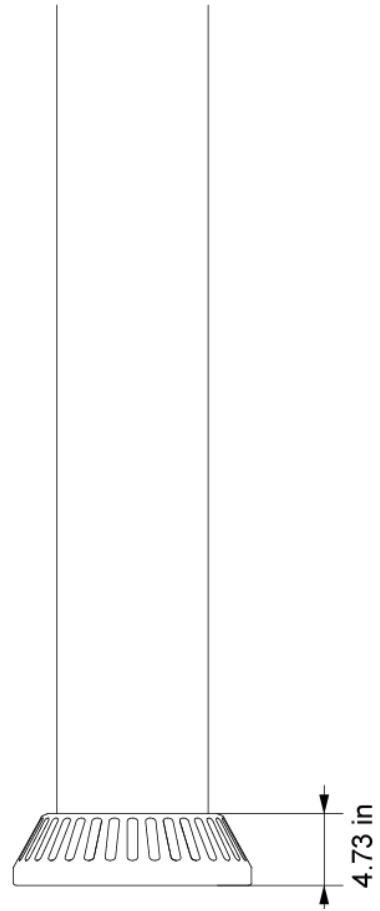
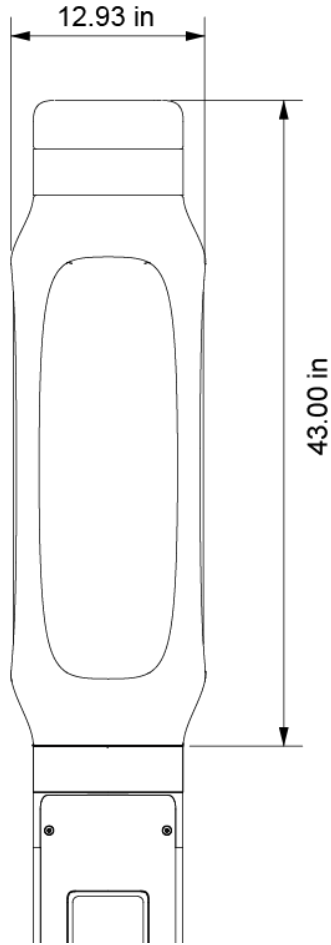
#Elegant #Avant-garde #Pure #Fluidity #Trustworthy
#Emotional #Considerate #Smart #Friendly #Nature
#Unexpected #Clean



Concept 04
Triad



Concept 04 Dimensions



Total height : 157.41 in



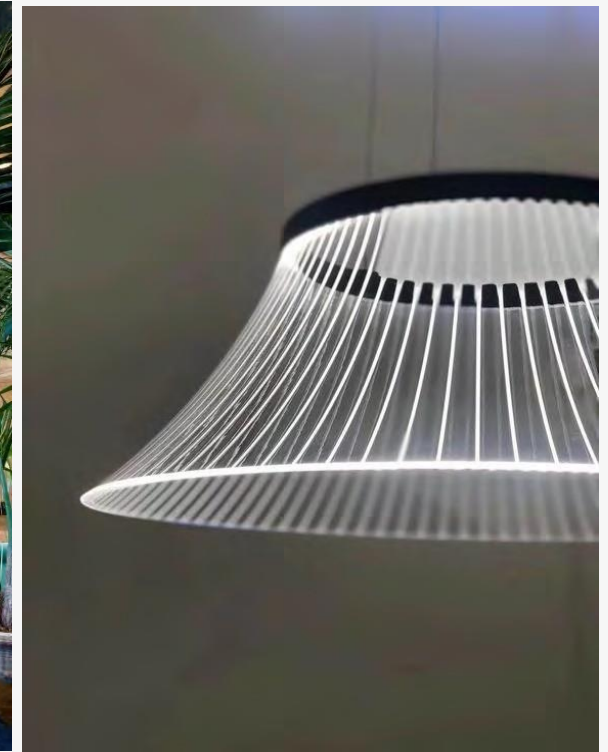
Concept 05 Overhangs & Blossoms

Rational architecture structure and organic palm leaf pattern

The main form factor is derived from the Ornate Architecture style. The arc-shape skeleton starts from the top of this iconic column and expands into the ceiling which express the tension of visualization.

Also, the arrayed layers are applied on the pole allow for a beautiful blend between the city and its lush landscape.

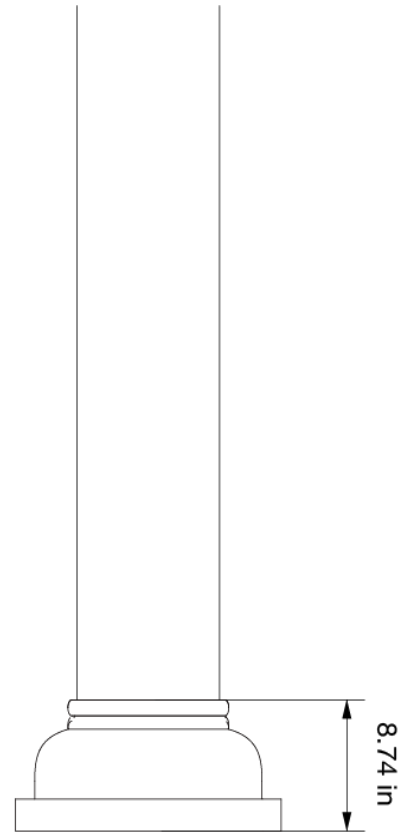
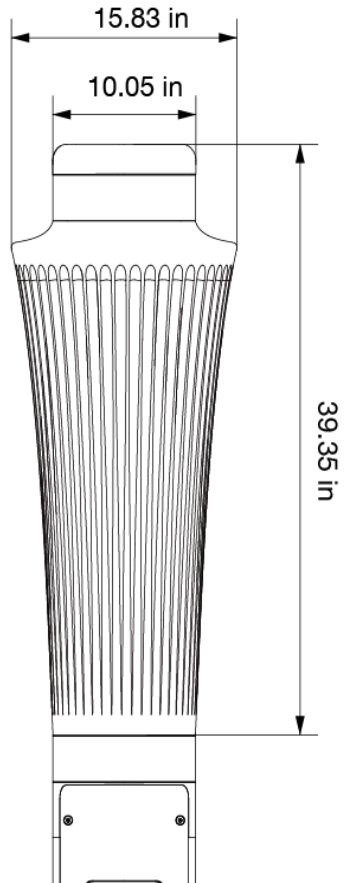
#Elegant #Avant-garde #Pure #Organic #Emotional
#Energetic #Lively #Friendly #Nature #Unexpected
#Clean



Concept 05
Over hangs and blossom



Concept 05
Dimension



Total height : 152 in



Concept 06 Coral Gables Smart Point

This ionic shape is designed to capture the attention of the Coral Gables citizen and visitors. It serves as a spot that showcases and serves as a constant reminder for the city and theirs forward thinking. As a sign of respect and pride, we have an engraving of the city's logo on the circular disc on top.

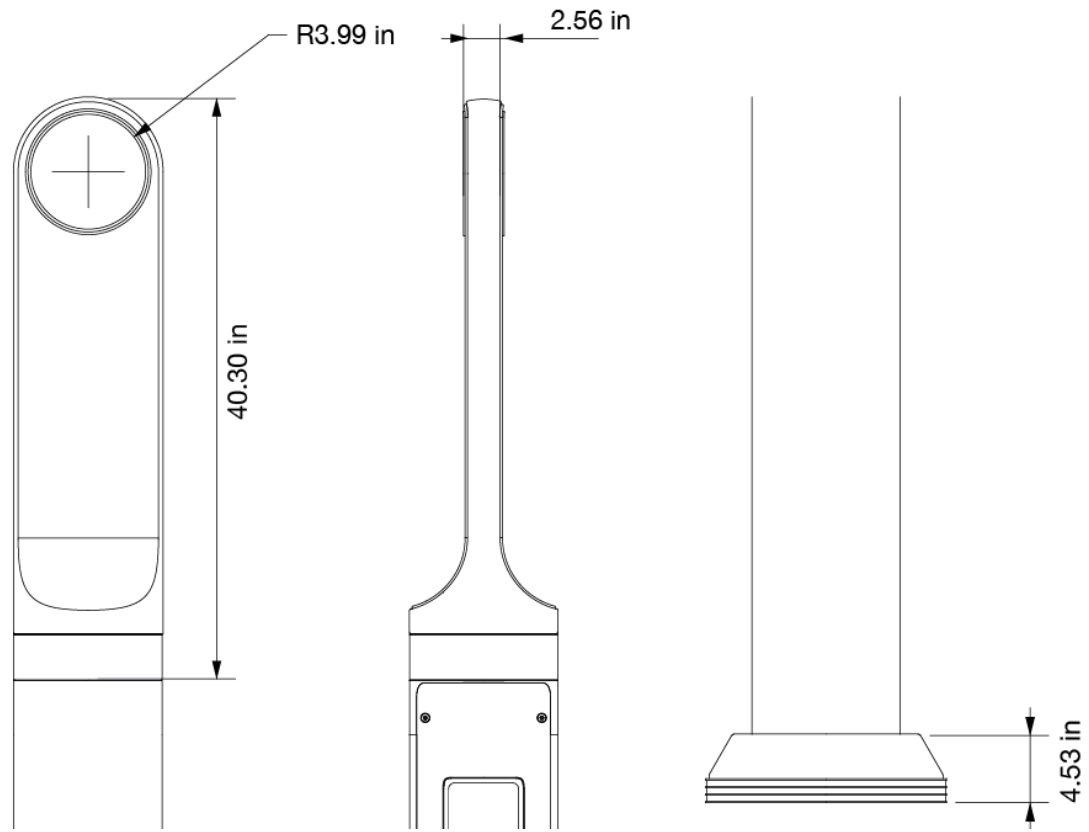
#post #respect #pride #signal



Concept 06
Coral Gables Smart Point

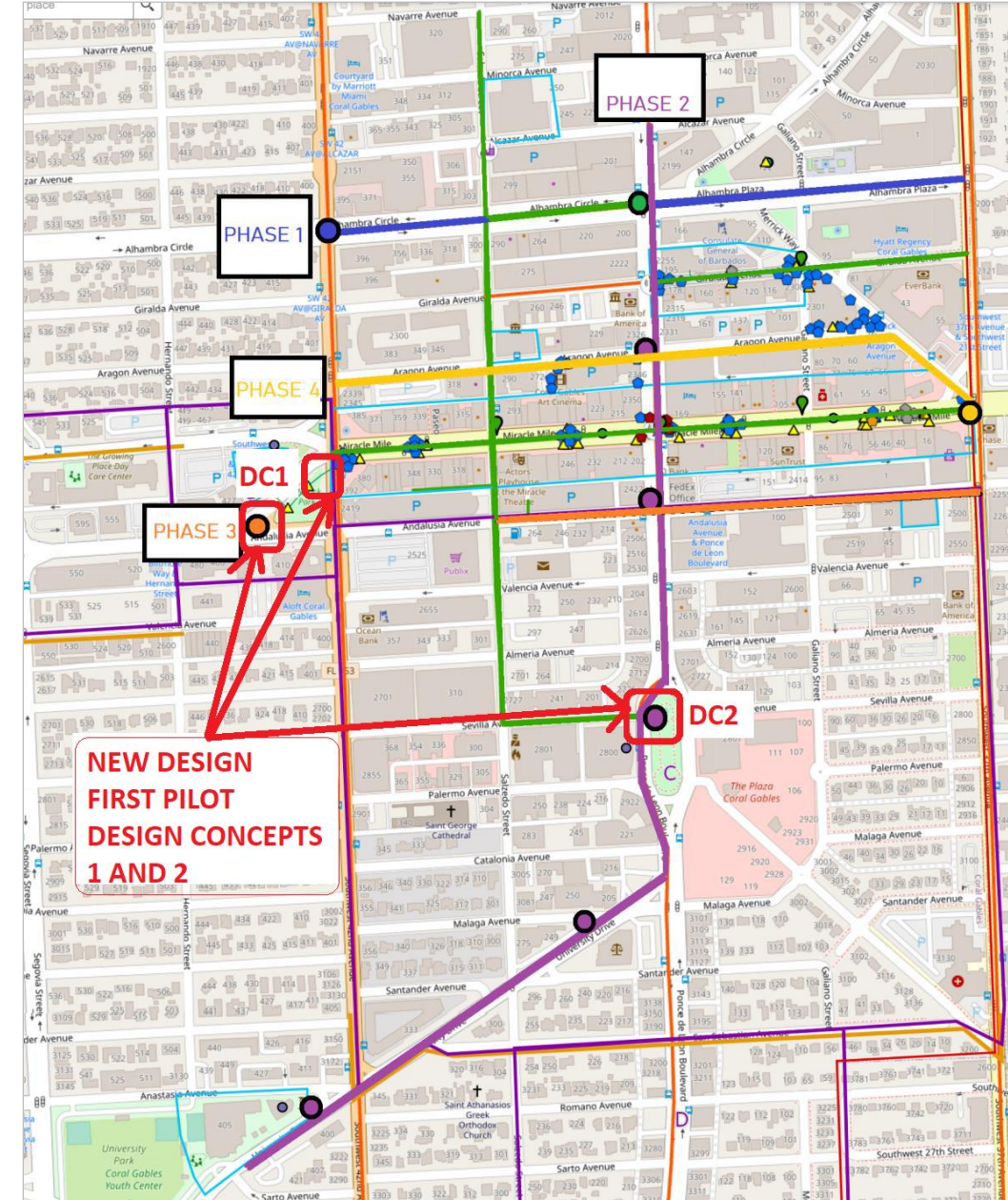


Concept 06 Dimensions



Total height : 151.75 in





Ekin / Pininfarina Coral Gables smart pole custom design production:

- One-time cost of the custom industrial manufacturing capacity and the first 3 pilot poles:
 - Design 1 (two pilot units for City Hall/Merrick Park): \$121K
 - Design 2 (one pilot unit for Ponce Circle Park): \$93K
- After one-time tooling cost, the unit cost per pole is ~\$42K