VOL.7
DEC. 2007

PUERTO RICO CONVENTION DISTRICT

DESIGN AND CONCEPT GUIDELINES



CONVENTION CENTER DISTRICT AUTHORITY
Commonwealth of Puerto Rico

COLLIERS INTERNATIONAL

cbt

PUERTO RICO CONVENTION DISTRICT

DESIGN AND CONCEPT GUIDELINES

VOLUME 7

THE COMMONWEALTH OF PUERTO RICO

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ACKNOWLEDGEMENTS

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1.0
THE LARGER CONTEXT

1.0 THE LARGER CONTEXT

1.1 INTRODUCTION

The Puerto Rico Convention District ("District") is being created as part of a public commitment to capitalize on the existing tourism appeal of Puerto Rico. The objective of the 111-acre District is to serve as a platform for the development of a convention facility, hotels, offices, restaurants, residential and other mixed uses to support convention and trade activity and expand Puerto Rico's regional economic base. The District, a four million square foot mixed-use development, is located in the greater San Juan Metropolitan Area on the peninsula of Isla Grande. It is the largest mixed-use commercial real estate project in Puerto Rico and the most widely anticipated due to its size and proximity to the highly desirable Miramar neighborhood, the Condado, and historic Old San Juan. The vision of the 111-acre District is to create an exemplary new urban neighborhood that supports and benefits from the development of the new Convention Center. The District comprises a plan for urban revitalization, involves both private and public sectors and offers attractions and facilities for convention participants, business travelers and tourists, as well as local residents. The initial phase of the 580,000 square foot Puerto Rico Convention Center ranks on a par with the leading convention centers of the world in both design and functionality. The Puerto Rico Legislature, with the objective of establishing an agency responsible for developing an integrated convention center and tourist/commercial district, created the Convention District Authority. The government of the Commonwealth of Puerto Rico has committed, and is expending through the Authority, $415 million on the development of the Convention Center facility and the District infrastructure. The Authority is empowered to lease District land, negoti-



OLD SAN JUAN STREETSCAPE



LA FORTALEZA, NIGHT VIEW



CASTILLO DE SAN FELIPE DEL MORRO

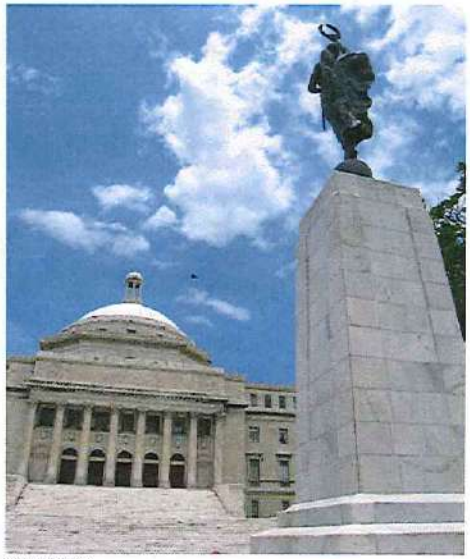


AERIAL VIEW OF CANAL SAN ANTONIO, SHOWING THE ISLETA (LEFT) AND ISLA GRANDE (RIGHT)

ate development agreements, and maintain design controls and public spaces, all to further of the success of the District. The District is being developed as a public/private effort with investment and incentives targeted and committed by the public sector, in order to generate private development activity and investment. In addition, the Commonwealth of Puerto Rico has embarked upon a plan to develop an urban mixed-use waterfront neighborhood which will enhance the economic potential of the new cutting-edge convention center and redevelop the largest contiguous underutilized parcel of land in the City of San Juan. The District Authority has committed the initial investment to improve and maintain all of the District streets and public realm.

The Authority's goal is the successful development and management of the Convention Center and surrounding District. The Authority is committed to world-class urban design and its vision is to assemble the highest quality development teams to join in shaping the environment of the District.

The District Master Plan is the creation of Sasaki Associates and Arquitectonica. The implementation of the District Master Plan is being carried out by a multi-disciplinary team led by Colliers International, CBT Architects and Ken Greenberg with an extensive team of economic and engineering professionals including CSA Group. The focus of these efforts is the creation of a vibrant and multifunctional urban community that is an integrated part of San Juan. The District Development Concept and Design Guidelines serve as the guide for the realization of a variety of built-form and architectural expression, reflective of a uniquely Puerto Rican urban setting and experience.



CAPITOLIO

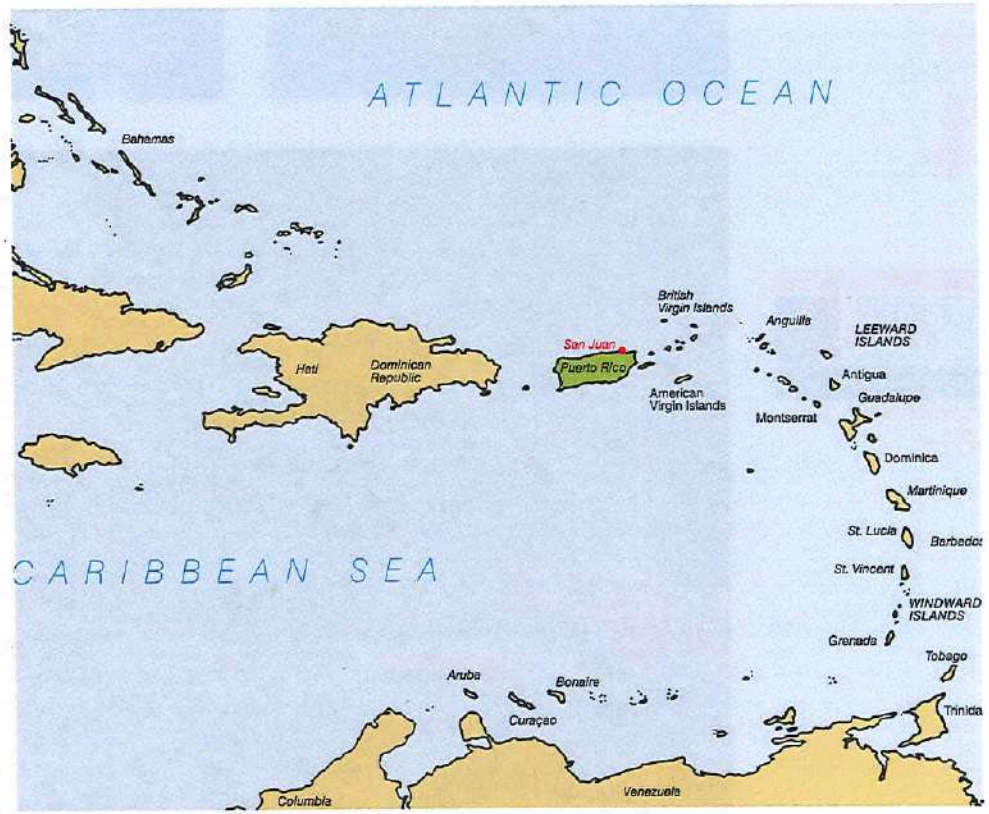
1.0 THE LARGER CONTEXT

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A

1.2 INTERNATIONAL AND REGIONAL CONTEXT

In 1952, Puerto Rico became the first Overseas Commonwealth of the United States, and although Spanish is the Island's first language, English is widely spoken and Puerto Ricans are U.S. citizens. Puerto Rican culture, music and dance are Latin American in inspiration, but commercial life is organized with modern American efficiency. U.S. citizens do not need a visa or passport to enter the Island and the currency of Puerto Rico is the U.S. dollar. Puerto Rico has its own constitution that allows for self-governing on local issues within the U.S. constitutional system. Island government consists of executive, legislative and judicial branches. General elections are held every four years in the same month as the U.S Presidential elections. There are 78 municipalities, each with a locally elected mayor and assembly.

Puerto Rico boasts a rich 500 year backdrop of European history and culture; a vibrant Afro-Antillean heritage that expresses itself daily in colorful Caribbean music, painting, poetry, sculpture, dance and cuisine; an urban nightlife that rivals any other cosmopolitan center; superb golfing at eighteen championship golf courses, and a breath-taking landscape – from an indigenous tropical rainforest to sweeping green valleys, and white coral beaches.



REGIONAL MAP


CONDADO


OCEANPARK


HATO REY BUSINESS DISTRICT


AEROPUERTO LUIS MUÑOZ MARIN

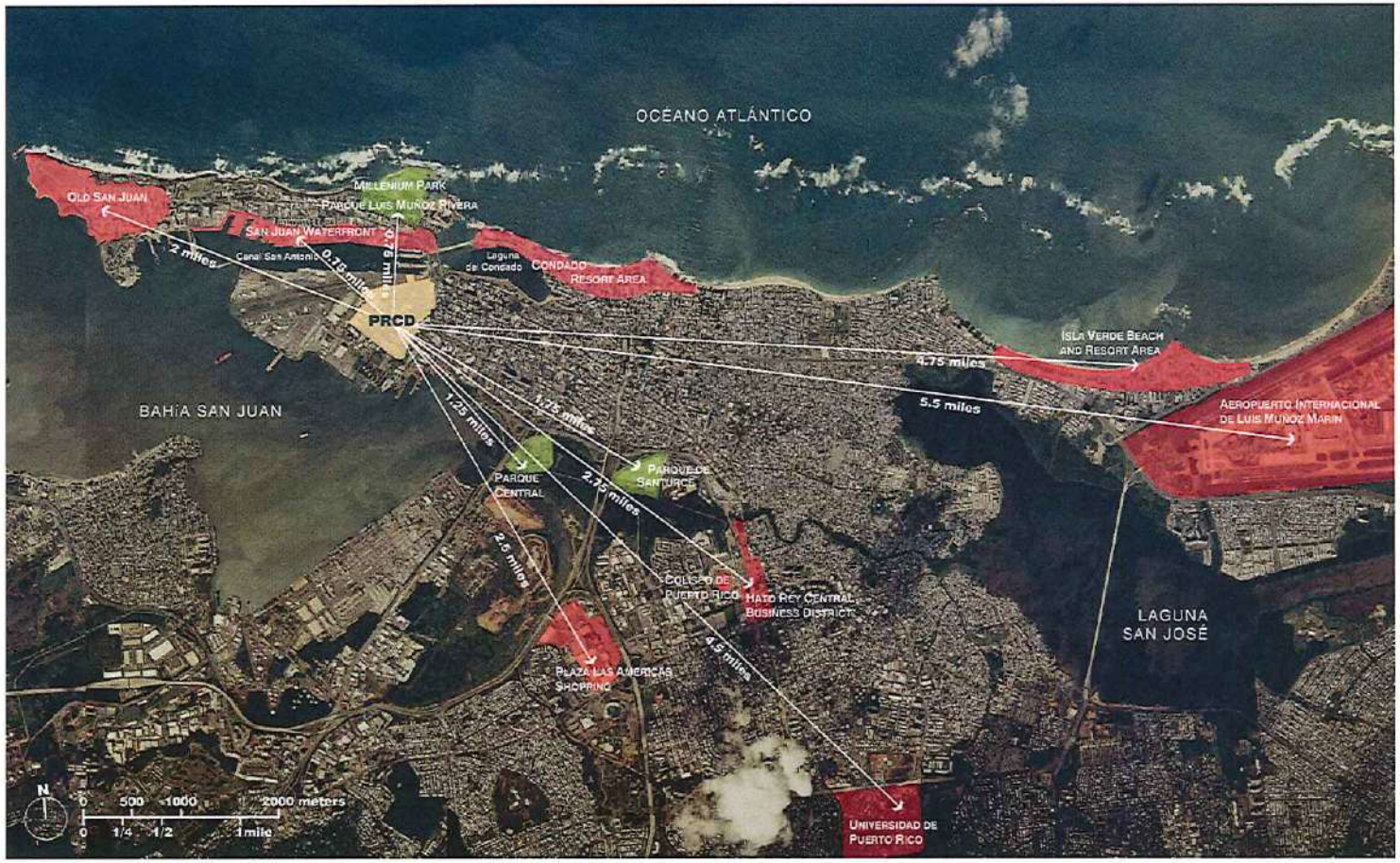


FIG. 1.2.1

FIG. 1.2.1
REGIONAL LOCUS PLAN

PRCD MASTER PLAN VOLUME 7

CONVENTION CENTER DISTRICT AUTHORITY
Commonwealth of Puerto Rico
COLLIERS INTERNATIONAL


VIEJO SAN JUAN


THE COLISEO


UNIVERSITY OF PUERTO RICO


PARQUE DE LOS NIÑOS

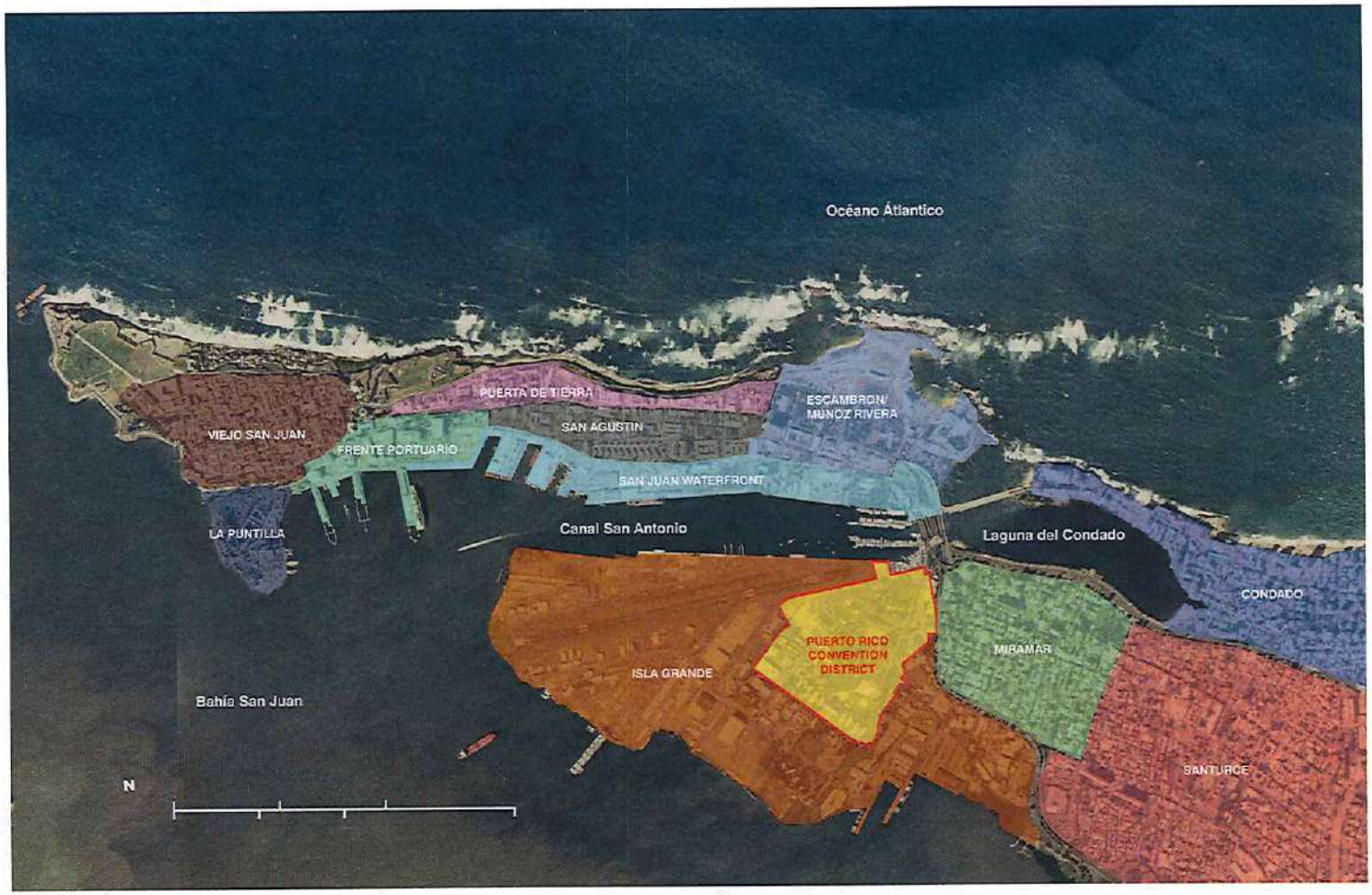


FIG. 1.3.1

FIG. 1.3.1
METROPOLITAN LOCUS PLAN

1.0 THE LARGER CONTEXT

1.3 METROPOLITAN CONTEXT

The District is near the center of the San Juan Metropolitan Area on land that was formerly a US Navy base known as Isla Grande. The walled Old City is located to the north of the District, across the San Antonio Canal, on the island known as Isleta of San Juan. The desirable residential communities of Miramar, Santurce and Condado are located to the east of the District, which is bound by the Fernando Ribas Dominicci Airport to the west. The Isla Grande is centrally located with direct access to key tourism and business centers in the city.

The site is in close proximity to both the City's Central Business District of Hato Rey and the Luis Muñoz Marín International Airport. It enjoys good access via one of the Puerto Rico's main highways (PR-18) and several public transportation options. The Isleta and Condado areas are served by numerous local amenities including prestigious restaurants, local and foreign-based financial institutions, athletic facilities, and international hotel chains. Old San Juan also hosts a major cruise homeport and port of call with docking facilities immediately adjacent to the District. More than 40,000 passengers disembark at the San Juan port each week.



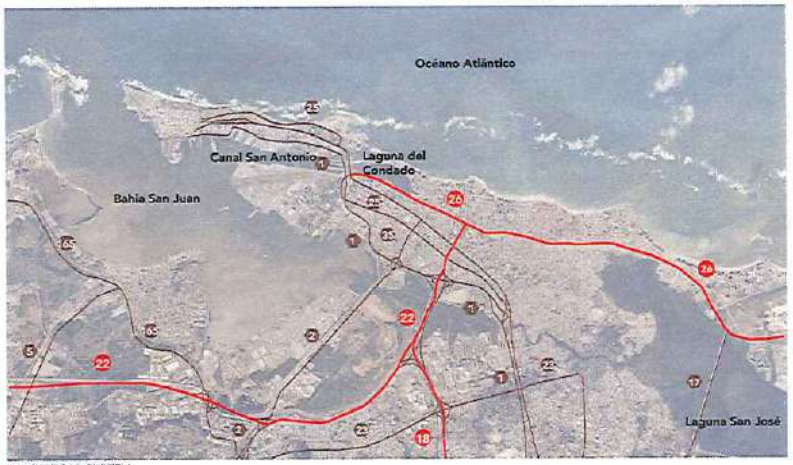
LEGEND

- Existing Green Space
- Proposed Green Space
- Water
- Convention District
- Existing Bike Paths
- Proposed Bike Path (Short Term)
- Proposed Bike Path (Medium Term)
- Proposed Bike Path (Long Term)

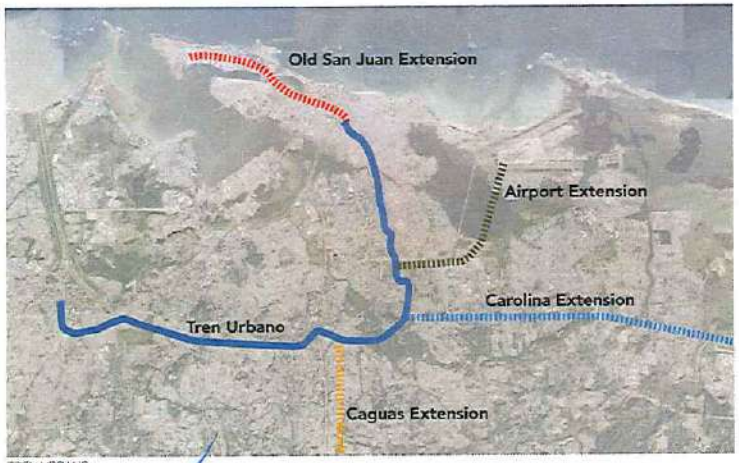
FIG. 1.3.2



METROPOLITAN BUS SYSTEM



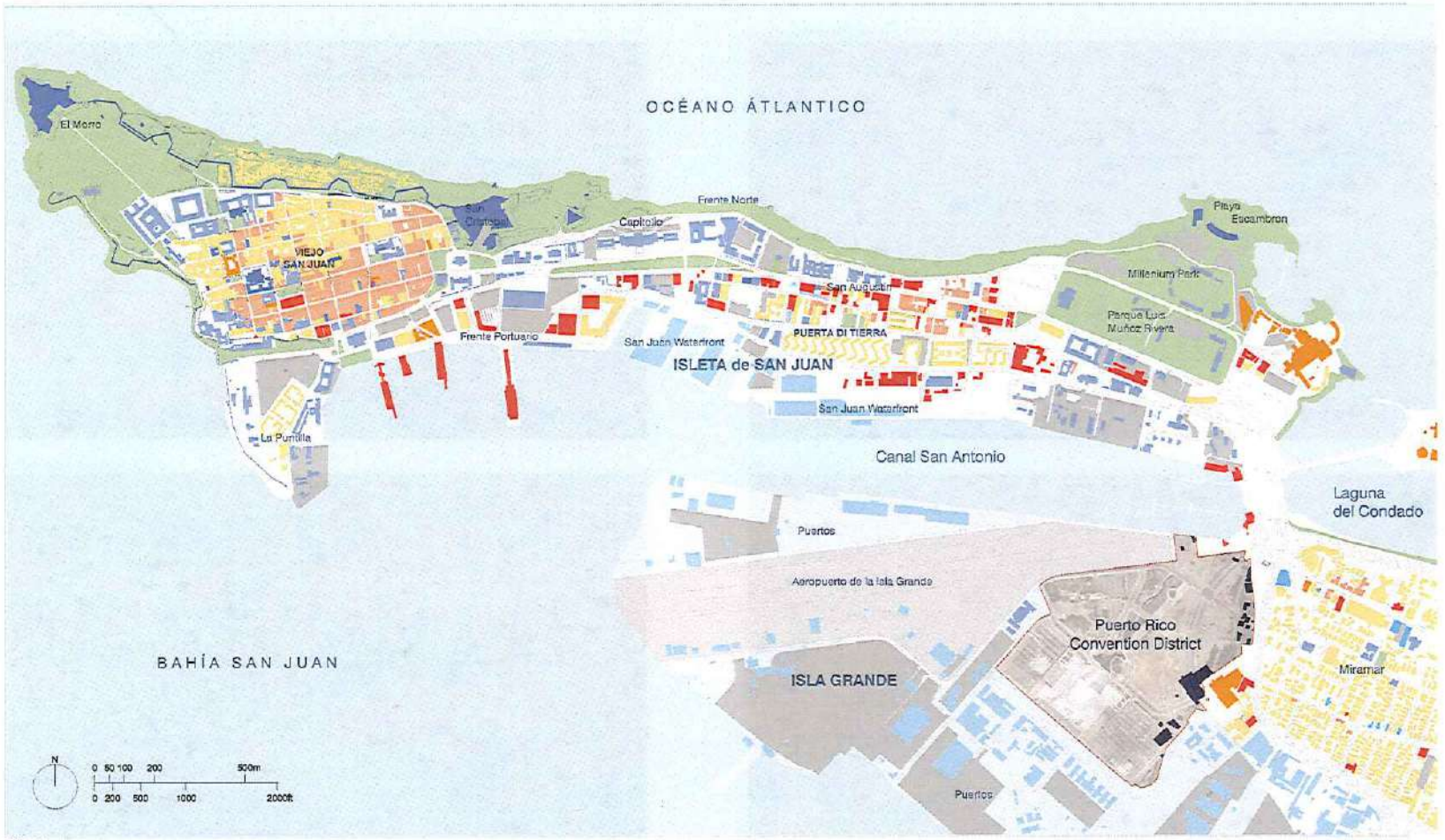
MAJOR ROAD SYSTEM



TREN URBANO



WATER TRANSPORT SYSTEM



LEGEND

- Residential
- Mixed Use
- Hotel
- Commercial
- Civic and Institutional
- Cultural
- Industrial
- Parking
- Green Areas

FIG. 1.3.4



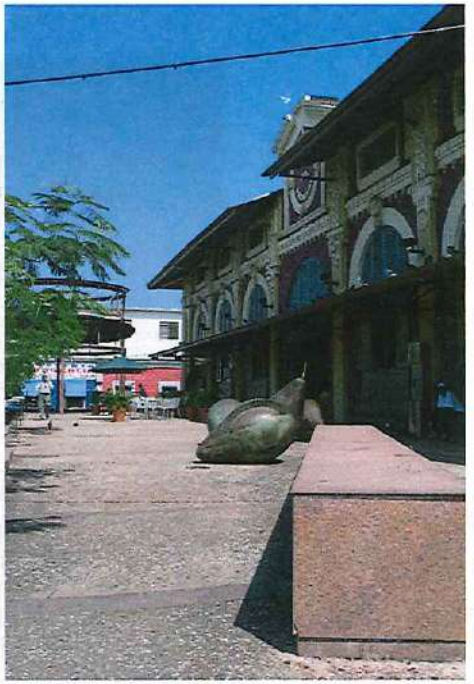
FIG. 1.3.2

FIG. 1.3.5
NEIGHBORHOOD LOCUS PLAN

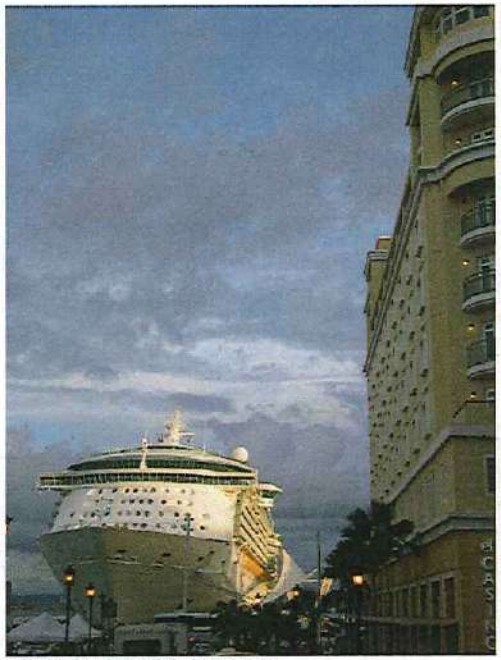
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THE LARGER CONTEXT
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STREETSCAPE, OLD SAN JUAN



PLAZA DEL MERCADO, SANTURCE



CRUISE SHIP, FRENTE PORTUARIO



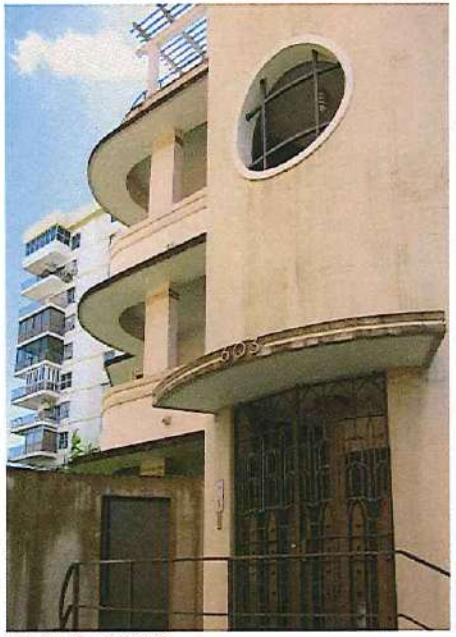
PRINCESA FOUNTAIN AND PROMENADE, LA PUNTILLA



HOUSING, PUERTA DE TIERRA



HOUSING AND OFFICES, PUERTA DE TIERRA



HOUSING, MIRAMAR



HOUSING, MIRAMAR

1.0 THE LARGER CONTEXT
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2.0
EXISTING CONDITIONS

2.0 EXISTING CONDITIONS

2.1 TOPOGRAPHY

Existing site grades over the development area are relatively flat, ranging from approximate elevations of +2.5 to +5.5m above sea level. Changes in site grades across the District are minimal, though the topography generally slopes from east to west. Original grades were modified during the construction of new roadways and utility lines throughout the area.

2.2 SOIL CONDITIONS

Existing test boring logs describe the subsurface soil conditions for the District presented in this section. "Figure – Borings Location Plan, PR Trade Center, San Juan, Puerto Rico" by Geotechnical Materials Testing Service Corp. (GMTS) shows the approximate locations of these test borings (see Appendix 1). The test boring logs are also included as Appendix 3.

In general, the landmass of the District consists of surficial fill placed for construction of the former Naval facilities. Below this fill are interbedded deposits of silt sand and clay overlying limestone. The combined thickness of the overburden soils in the area is less than 100 ft.

A subsurface soil profile, prepared by GMTS and entitled "Figure – Inferred Soil Profile Along Grand Canal, Americas World Trade District, San Juan, Puerto Rico," dated 17 January 2000 (Appendix 2) illustrates the below grade stratigraphy from test borings B-115, B-112, B-9, B-114, B-117, and B-119.



VIEW NORTHEAST ACROSS SITE FROM CONVENTION CENTER

Specific descriptions of the underlying soils are as follows:

MISCELLANEOUS FILL

The surficial layer of miscellaneous fill extends from the ground surface to depths between 2 and 18 ft. It consists of varying amounts of loose to dense sand and gravel (limestone fragments) and very soft to hard silt and clay. The fill also includes varying amounts of shells, "pebbles," asphalt, and roots, and occasional organic clay. The fill is typically shades of brown, with occasional gray coloration. Previous geotechnical reports by GMTS refer to this stratum as "Stratum A," and indicate that it was placed for the construction of the Miramar Naval Base.

ORGANIC DEPOSITS

Each boring location shows organic deposits underlying the miscellaneous fill stratum. Where fully penetrated, the deposit varies in thickness from 10 to 40 ft and extends to depths up to 43 ft below the ground surface. The organic deposits are generally described as very soft to soft, dark gray, organic clayey SILT and silty CLAY with interbedded layers of black to brown fibrous to disseminated PEAT. The deposit also includes frequent interbedded layers of very loose to medium dense, medium to fine SAND and silty SAND, as well as layers of medium stiff to very stiff sandy CLAY, CLAY, and sandy SILT. The logs also show shell and coral fragments present in this stratum, referred to as "Stratum B."

ALLUVIAL DEPOSITS

Alluvial deposits underlie the organic soils at most of the test boring locations. These alluvial deposits generally range in description from very stiff to hard, silty CLAY to CLAY, to medium dense to dense, medium to fine SAND. The alluvium is also described as sandy CLAY, clayey SAND, and clayey SILT, with occasional "pebbles," likely gravel. This deposit typically appears one or more shades of brown (yellow-brown or red-brown) or gray. At two fully penetrated test boring locations (B-14 and B-15), the deposit varied in thickness from 34 to 45 ft and extended to depths up to 73 ft below the ground surface. GMTS refers to this stratum as "Stratum C."

The soil profile in Appendix 2 by GMTS illustrates the variation of this stratum, with frequent interbedding of cohesionless and cohesive layers.

WEATHERED LIMESTONE

Weathered limestone lies below the alluvial deposits at test boring locations B-14 and B-15. It is typically very stiff to hard, yellow- to orange-brown, weathered limestone, with sandy silt and little sand. A soil consistency is provided as the rock was not cored. The weathered limestone extends to a depth of at least 90 ft, as this was the maximum depth drilled. GMTS refers to this stratum as "Stratum D."

Appendix 4 is a list of previous geotechnical reports/studies completed for other developments in the area.

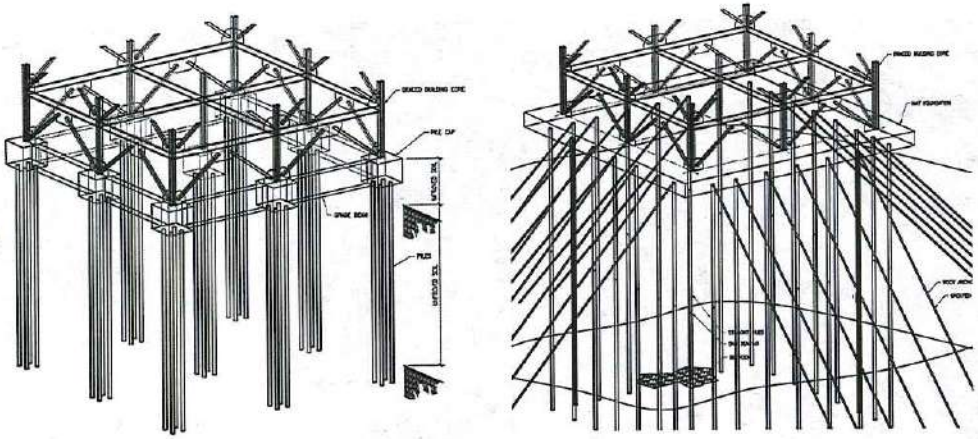


VIEW OF SITE LOOKING NORTHEAST





AERIAL VIEW OF DISTRICT LOOKING EAST



PILE CAPS AND GRADE BEAMS-PASSIVE RESISTANCE FROM IMPROVED SOIL

2.3 GENERAL FOUNDATION SYSTEMS

The loose and compressible nature of the upper 30 to 40 ft of surficial fill and organic soils are not considered suitable for building foundation support. At a minimum, foundation support will need to extend into the underlying naturally deposited inorganic soils; the interbedded silt, sand and clays. Suitable foundation bearing soils for static support of building column loads are typically encountered at depths of 40 ft or greater. Support for the proposed buildings will likely require deep foundation piles or other deep foundation types, a number of which are feasible depending on building column loads and specific design conditions.

The foundation system will need to be capable of transferring the horizontal base shear and the overturning moment into the surrounding ground and the surrounding ground will need to be capable of resisting the applied lateral forces under wind and seismic events. Conceptual methods for achieving passive resistance in this case are as follows:

PILE CAPS AND GRADE BEAMS

In this scenario, piles resist the downward vertical loads at the gravity columns. Dead load of the structure and the tension capacity of the piles resist any uplift forces. The pile caps and grade beams bearing against the soil would resist lateral forces. This scenario requires soil improvement to a depth sufficient to allow the soil to develop the required passive pressure.

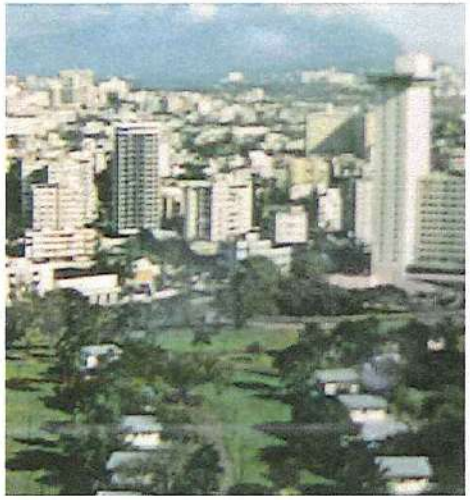
TIE DOWN

In this scenario, vertical piles support a mat foundation to resist downward loads. Sloped anchors that would be grouted into the bedrock would resist uplift and lateral loads.

Ground level floor slabs become structural slabs spanning between pile caps and supported on grade beams. See also Sections 2.11 and 2.12.

2.4 ENVIRONMENTAL ISSUES

Reports on Environmental Studies completed for the development area are listed in Appendix 4. In summary, the environmental studies evaluated the potential presence of oil and hazardous materials based on former site usage while an operating US Naval Facility. Residences for Naval personnel primarily occupied the area. Chemical testing of soil or groundwater was not conducted since no areas of



ISLA GRANDE MILITARY BASE. C. 1960



VIEW ACROSS SITE LOOKING NORTHEAST

concern were identified. The study concludes that "no conditions requiring remediation" are present within the development area.

2.5 GROUNDWATER CONDITIONS

Groundwater levels recorded during drilling ranged from depths of approximately 1 to 8.2 ft below the ground surface. Groundwater levels, however, observed during drilling can be heavily influenced by the drilling operations. Groundwater levels are also influenced by weather conditions, precipitation, the infiltration of surface water runoff, construction activities, leakage into or out of utility pipes, building underdrain systems, localized water recharging, nearby water bodies, and other factors. Seasonal fluctuations of groundwater levels should be anticipated.

2.6 HISTORICAL SITE INFORMATION

The District was the site of the Miramar US Naval Base from the 1940s to 1971. The development area was probably filled in the 1930s to 1940s for base facility construction. The Naval Air Station included numerous buildings and operations to support the facility and personnel. Buildings used for base housing formerly occupied the development area.

2.7 ZONING AND PERMITTING

The Master Plan for the Puerto Rico Convention District has the following master permits approved for the overall development:

- Consulta de Ubicación (master land use and location permit) under 99-18-0900-JGU approved 3 October 2002 by the PR Planning Board, with amendments approved.
- Final Environmental Impact Statement (Declaración de Impacto Ambiental Final DIA-F) approved by the Junta de Calidad Ambiental (Environmental Quality Board / EQB).
- Plano de Desarrollo Preliminar approved by the Administración de Reglamentos y Permisos (ARPE).

The development of all the parcels is included as part of these master permits. Each proponent is required to establish the permitting strategy for their specific project.

Following the normal permitting procedures, next steps for the development of the parcels with respect to permitting will include:

- Submission of Anteproyecto (Preliminary Design Permit) to ARPE. This will include any variances to the Planning and Building Codes solicited by the proponent.
- Individual endorsement from governmental agencies.
- Submission of the construction documents for the Final Construction Permit (ARPE).
- Procurement of permits from the Junta de Calidad Ambiental (EQB) for permits related to construction activity such as Cest Plan, Airborn Emissions and Solid Waste Disposal Permits.

2.8 BUILDING CODE REQUIREMENTS

The applicable building code is the Puerto Rico Building Code 1999, which is the 1997 Uniform Building Code with amendments specific to the territory of Puerto Rico. Highlighting the structural portion of the code are significant lateral load requirements. The minimum design wind velocity is one hundred and ten (110) miles per hour, with exposure to the ocean. The seismic zone is 3, and the seismic loads are amplified by the soil conditions in the development zone. Given existing soil conditions, providing an adequate load path to disperse these large forces into the ground on each parcel will require specific attention by the development team. See also Section 2.11 and 2.12.

2.9 INFRASTRUCTURE IMPROVEMENTS

LANDSCAPE ELEMENTS

Most prominent of all the improvements to the Puerto Rico Convention District is the grand Paseo Park. This linear parkland stretches from the waters of the San Antonio Canal to the Convention Center at the Crescent Basin, linking a variety of District activities and amenities beyond conventioneering that includes cruise ship and resort sites, shopping, entertainment, museums, workplaces and homes. Extending the length of the park is a lagoon featuring a series of pools and fountains combined with play areas, walking and bicycle paths, small performance areas, gardens, and cafés.

Salt water in the lagoon circulates from the San Antonio Canal. The Crescent Basin, however, is an independent fresh water pool with its own fountains and lighting arrangement.

Two locations of particularly beautiful trees are preserved; at the Crescent Basin and on the eastern edge across from Block C. Planting throughout the rest of the park and District display a variety of native trees and plants to provide shade and delight in keeping with local character and sustainability goals.

Presently the Paseo Park ends with a garden and gateway plaza at the Baldorioty de Castro Boulevard. Future plans include extending the Paseo Park to the San Antonio Bridge, and connecting with the Condado and Puerta de Tierra where independent urban improvements such as the reconfiguration of Intersection 5 and the San Juan Waterfront are currently underway.

A second, less formal green space system crosses the District in the east-west direction. This set of linked plazas connect the District both visually and programatically to proposed improvements along the south side of the San Antonio Canal, to the buffer park at the Dominicci Airport, and to the Miramar neighborhood.

STREETS

All District roads provide for widening and a 3-ft undercut for soil replacement. New and improved District streets have ample sidewalks of at least 3 meters and planting areas on both sides. All development blocks have dedicated access from a District road.

Clearly marked bicycle lanes run along Avenida Fernández Juncos, Lindbergh Street, the Convention Center Boulevard, Park Avenue and Center Street. (See Fig. 3.6.1)

UTILITIES

Recent analysis of the utility infrastructure indicate that the planned electricity, water and sewer, and communications capacities will amply meet the expected demands of the proposed Development Concept Plan. Please refer to Appendices 5,6 and 7.



PUERTO RICO CONVENTION CENTER

PARKING

In general, parking requirements within the District will be met on a project-by-project basis. On-street parallel parking is planned on the Paseo Street, Park Avenue, Center Street, and Baldorioty de Castro Boulevard.

Plans for construction in the District include parking on unoccupied blocks during the early stages of development. Temporary paved lots to meet its immediate needs will flank both east and west sides of the Puerto Rico Convention Center, providing 1950 parking spaces (40 accessible). Paved lots on block J will also provide 390 spaces (12 accessible, 7 for buses) of interim parking.



VIEW OF CAPITOLIO FROM SITE, ACROSS CANAL SAN ANTONIO



VIEW OF SITE LOOKING AT MIRAMAR



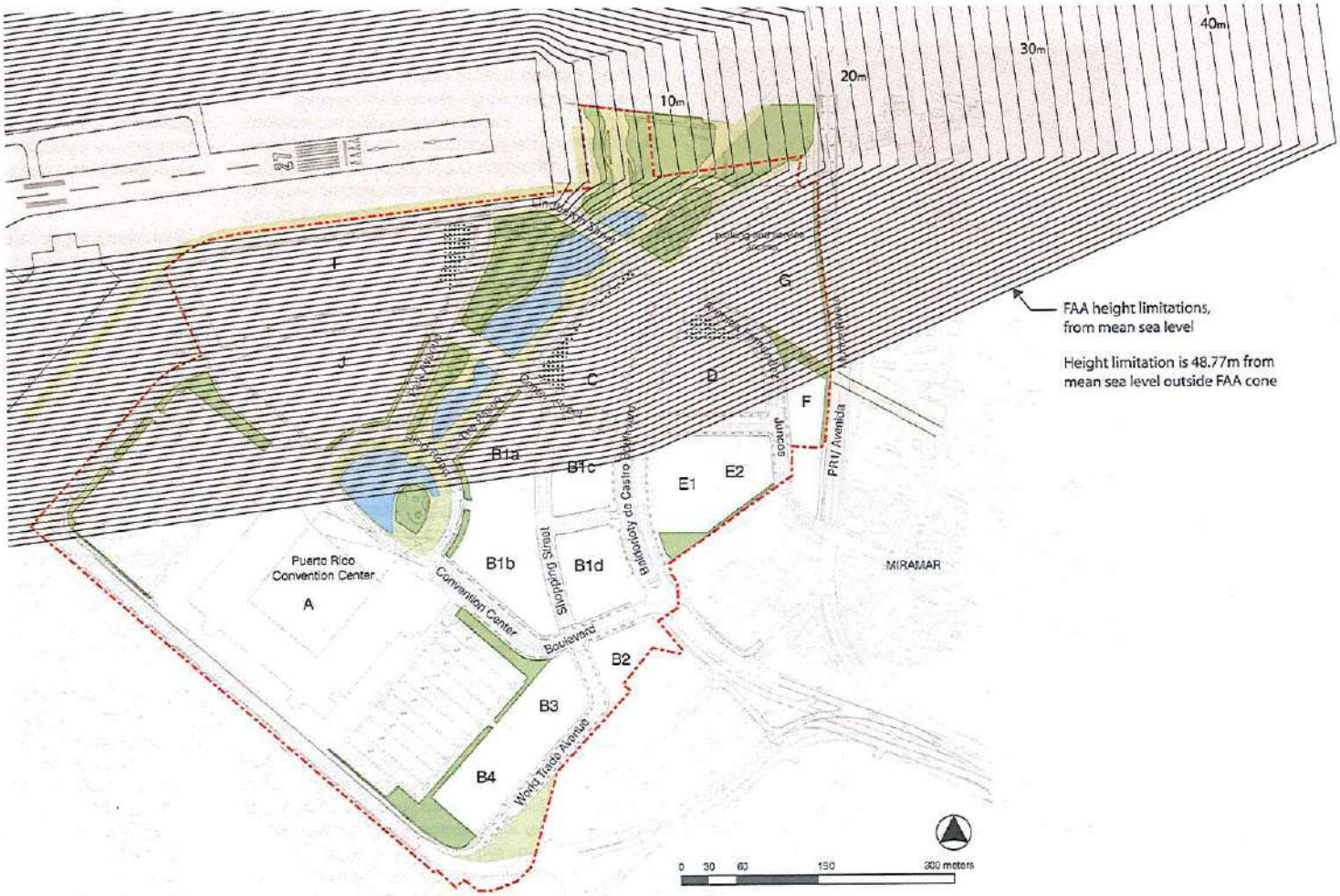


FIG. 2.10.1

FIG. 2.10.1
FAA AIRSPACE LIMITATIONS

2.10 FAA HEIGHT LIMITATIONS

FAA airspace restrictions apply to the District due to its proximity to the Fernando L. Ribas Dominicci Airport. Construction height is limited to between 7m (23') and 486m (151') from Mean Sea Level in a 7:1 slope roughly north to south for blocks included within the FAA cone. The construction height is limited to 48,77m (160') from Mean Sea Level throughout the District. [See Fig. 2.10.1 above, and Appendix 8].

Parcel developers are responsible for conducting an Aeronautical Study and obtaining from the FAA a Determination of No Hazard to Air Navigation.

2.11 BUILDING PARAMETERS SEISMIC DESIGN CONSIDERATIONS

The development area is located in a zone of high seismic activity and underlain by potentially liquefaction-susceptible soils. Loss of soil strength, loss of resistance to lateral loads and dynamically induced ground settlement are all design considerations that require analysis and will likely govern foundation design.

The existing soil conditions result in a Seismic Site Classification F. In accordance with the Puerto Rico Building Code 1999 requires a site specific Seismic Response Analysis to develop the seismic coefficients for building design.

Current soil composition is not expected to adequately develop passive pressure against the grade beams or pile caps to resist any lateral loads without improvement. The development plan will need to consider a variety of soil improvement methods. To date, soil improvement methods such as stone columns, which improve soil strength and mitigate liquefaction and seismically-induced settlement, and surcharging to pre-compress the soft soils and mitigate future consolidation and settling, have been used in the surrounding area.

BELOW GRADE DEVELOPMENT

The following geotechnical issues all impact the development and design of below grade structures:

- High groundwater levels
- Thickness of fill and organic (unsuitable bearing) soils
- Loose, potentially liquefaction-susceptible soils
- Need for temporary earth support
- Groundwater cut-off and temporary dewatering
- Foundations support
- Waterproofing and resistance to or relief of hydrostatic uplift pressures

The depth and geometry of the below grade space and well as structural loads govern the level to which each of these issues affects both design and costs. For example, the depth of suitable bearing soils is so great that even one or two levels below- grade will require deep foundation support. Constructing three or more levels below-grade will likely reach the depth of bearing soils. In this case, a footing or mat foundation system can be placed at the bottom of the excavation. However, as the depth of excavation increases, greater resistance to hydrostatic pressures is also required.

With proper structural design, below grade structural walls can provide resistance to potentially large lateral loads, though soil improvement or other means of mitigating against potential liquefaction during a seismic event to maintain sufficient lateral soil resistance will still be necessary.

SUPERSTRUCTURE

Low-Rise & Mid-Rise

The low- mid-rise buildings or portions thereof are expected to be either steel-framed or cast-in-place concrete construction. Parking structures will likely be concrete, with either shear walls or moment frames providing resistance to lateral forces. Casinos, theaters, and other uses requiring column free space will be steel with a lateral system of moment frames or eccentrically braces frames. Residential and office buildings could be either steel or concrete, concrete being the preferred local alternative.

High-Rise

High-rise buildings will likely be steel-framed to reduce the weight of the structure on the foundations and the building mass subject to seismic acceleration. Poor soil conditions and the site's location in Seismic Zone 3 mean that lateral force-resisting systems for high-rise construction should be a ductile system with a high R value, such as special moment resisting frames alone or in a dual system with eccentrically braced frames. The UBC height limits for certain types of lateral systems in Seismic Zones 3 & 4 should also be noted, as Puerto Rico is Zone 3. Special attention should be paid to the shape of the towers, as wind pressures will exceed 80 pounds per square foot at the upper elevations. The wind load will produce very high base shears on buildings with a large sail area. Also of particular concern will be the interaction between high-rise and low-rise portions on parcels that have a large low-rise footprint and a high-rise tower with a small floor plate at one edge of the parcel. As soil response and seismic base shear depends on the dynamic period of the building, the seismic response of the low-rise and high-rise buildings will be quite different. Accounting for this difference is critical whether in the design of lateral systems or in separating low and high-rise portions of construction with expansion joints.

2.12 LOAD SUMMARY

COLUMN LOADS

Column loads will vary widely with the development of so many building sizes, heights, and uses. All of the buildings are expected to be supported on deep foundations, regardless of the magnitude of the column loads. Variation may come in the type and depth of the foundations. High-rise structures will likely need to be supported on piles founded on bedrock. Low-rise structures with relatively light column loads could possibly found on the clay layer without penetration to bedrock. Buildings with light column loads may also use caissons.

BASE SHEARS

Base shear values are expected to vary significantly for both wind and seismic loads. Due to the high wind pressures, the exposure area of the buildings is particularly important. High-rise towers with large sail areas may have base shears in the range of 2,500 to 3,500 kips. Wind pressure on the low-rise buildings will likely be less critical. Regardless of the height of the buildings, the building cladding and its connections to the structure will be subjected to high wind pressures.

Seismic base shear will be particularly sensitive to the type of lateral system chosen for each building. It is possible that a 200 ft tall high-rise steel tower with a ductile lateral system (i.e. special moment frames) could have a similar base shear to a 60 ft tall low-rise concrete parking structure with a rigid lateral system, such as shear walls. The site's soil conditions require that designers choose building systems that will minimize seismic base shears. Preliminary analysis shows that a high-rise steel tower with a rigid lateral system could have a seismic base shear in excess of 5,000 kips. The base shear for a similar building with a ductile lateral system could be expected to be in the range of 2,500 kips. It will be the task of the selected development team to design a structure that adequately responds to the specific structural challenges of each parcel.

UTILITY SUPPORT

There is a combination of structurally supported and unsupported utilities and roadways within the District. Stone columns or another soil improvement techniques support roadways where required. Only selected roadways in the District are structurally supported.



2.13 CLIMATE AND ENVIRONMENT

San Juan is located at 18º 28' 06" (18.468º N) latitude and 66º 06' 22" (66.106º W) longitude on the northern coast of the main island of Puerto Rico. It has a hot and humid tropical climate with mean daily temperatures ranging between 76.7ºF (or 24.8ºC, January) and 82.4ºF (or 28ºC, August). The average daily minimum is lowest (70.8ºF) in January, while the average daily maximum is highest (87.8ºF) in August and September. The highest and the lowest temperatures between 1955 and 2005, 98ºF and 46ºF, where both recorded in October. There are, on average, 62 days of the year when the temperature goes above 90ºF.

The longest day experienced in San Juan 13 hours 15 minutes long (June 21, between 5:24am and 6:39pm), while the shortest day is 11 hours 2 minutes long (December 21, between 6:27am to 5:29pm). The winter and summer solstices also mark the extreme locations of the sun on the compass during sunrise and sunset. On June 21, the sun rises at 25º north of east and sets at 25º north of west. On December 21, the sun rises at 25º south of east and sets at 25º south of west. The sun is almost directly overhead between 11am and noon from May to August when it travels higher in the sky (See Fig. 3.9.1).

The wind regime is dominated by the eastern trade winds (east, southeast, northeast) at light wind speeds averaging at 4.25 mph (1.9 m/s)[a]. (See Fig. 3.9.1) A maximum wind speed of 33.7mph (15.1 m/s) was recorded during Hurricane Georges. The coastal location of San Juan causes diurnal variations in wind speed that are directly correlated with changes in temperature: morning winds gain speed beginning slightly before 8am, and reach a peak around 1pm. In the afternoon, the wind speeds decrease steadily until they settle at nighttime lows around 7pm.

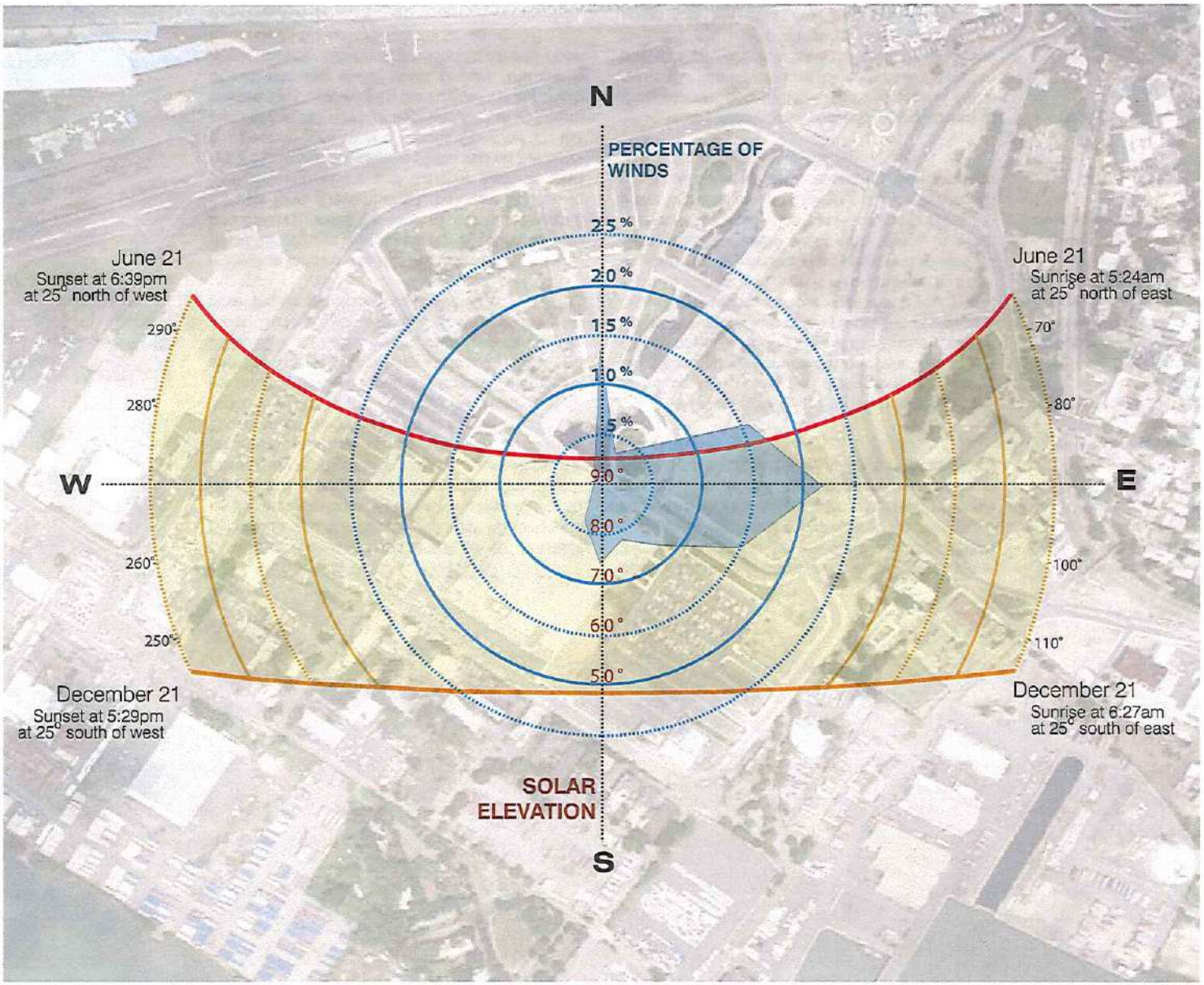
The rainy season in San Juan is considered to be between June and November, although it rains consistently throughout the year. The sky is cloudy or partly cloudy 80% of the time and rainfall varies between a low of 2.14 inches in March to a high of 6.17 inches in November, with a yearly total of 50.76 inches. San Juan is hit or brushed by tropical storms every three to four years and is affected by a direct hurricane every eight years. In 1998, Hurricane Georges – the first hurricane to cross the entire island since San Ciprian in 1932 – passed 20 miles southwest of San Juan causing great damage with 115 mph winds and 150 mph gusts.

Heavy automobile use and urban sprawl in San Juan has contributed to the existence of a permanent Urban Heat Island (UHI) effect in the metropolitan area[b], which is felt most strongly along the coastal zone. The temperature difference between urban and rural areas has increased at a rate of 0.41ºC (0.74ºF) degrees per decade in the last 40 years. If the present trend of increase continues, areas of San Juan can be expected to be 4.3ºC to 8.4ºC [7.74ºF to 15.12ºF, annual average] hotter than the surrounding rural areas by 2050.

[a] 30-yr climate averages obtained from NOAA National Data Center Website. (http://ols.nndc.noaa.gov/plolstore/plsql/olstore.prodspecific?prodnum=C00095-PUB-A0001#TABLES). Sunrise and sunset times were obtained from http://www.thesunrisetimes.com/Caribbean/San_Juan,_Puerto_Rico_.aspx. Hurricane information specific to San Juan is located at http://www.hurricanecity.com/city/sanjuan.htm. See Appendices for basic climate, solar and wind data

[a] Wind data recorded between 1998 and 2000 at 3.1m (about 10 ft) above ground. The 50-year wind average (NOAA National Data Center) is almost twice as high, at 8.3 mph (3.7 m/s). Wind velocities at the pedestrian level will be slightly lower than these rates, while higher rates can be expected to effect tall buildings. gives a higher mean speed Source: "Wind characteristics on the Caribbean island of Puerto Rico" by K. Altaii and R. N. Farrugia (Renewable Energy, September 2003, v.28-iss.1, 1701-1710)

[b] For information on UHI, see "Urban heat island effect analysis for San Juan, Puerto Rico" by A. Velazquez-Lozada, J. E. Gonzalez and A. Winter. (Atmospheric Environment 40, 2006, 1731–1741).



LEGEND

- Solar Path, June 21st (summer solstice)
- Solar Path, December 21st (winter solstice)
- Solar paths between solstices
- Wind frequency

FIG.2.13.1
SOLAR PATHS AND WIND DIRECTION

FIG. 3.10.1



CONVENTION CENTER AT NIGHT

2.14 CONVENTION CENTER

Inaugurated in November 2005, the Puerto Rico Convention Center is a new business and tourism destination that hosts a wide range of events and anchors the many attractions and activities in the District. It includes a 158,000 sq. ft. (14,678 sq. m.) exhibit hall, 40,000 sq. ft. (3,716 sq. m.) of meeting space with 12 rooms on two levels that subdivide into 25 sections, the largest ballroom in the Caribbean, at 40,000 sq. ft. (3,716 sq. m.), and 239,000 sq. ft. (22,203 sq. m.) of support service and administration.

Over 950 parking spaces are located adjacent to the Convention Center.

Two contiguous expansions of the convention center are planned for the near future.

Design services were provided by Atlanta based TVSA with local design support from Jimenez & Rodriguez-Barcelo, who are the architects of record.



VIEW OF THE DISTRICT FROM THE CONVENTION CENTER



CONVENTION CENTER MAIN ENTRANCE



SHERATON PUERTO RICO CONVENTION CENTER HOTEL RENDERING

2.15 HEADQUARTERS HOTEL

Currently under construction, the Sheraton Puerto Rico Convention Center Hotel is a mixed-use complex integral to the Puerto Rico Convention District. The full-service hotel of approximately 500 guestrooms is designed as an "urban resort". Conveniently located for easy access to the Convention Center situated directly across the Ring Road to the west, its guestrooms face views of the San Antonio Canal and San Juan Bay on the west and the Atlantic Ocean on the north.

Hotel facilities include approximately 47,500 SF of meeting and banquet space, a multi-purpose restaurant, lounge and lobby bar. Entertainment facilities and amenities include a casino of approximately 17,000 SF, a 12,000 SF spa/fitness center with additional outdoor spa treatment areas, lap pool/jacuzzi and cabanas, and a cascading swimming pool area surrounded by 11,000 SF of landscaped gardens raised four floors above the Paseo.

Added to the Headquarters Hotel itself is a commercial/ entertainment component which includes a live entertainment venue, a cinema, and some 45,000 SF of commercial space. An attached parking facility for approximately 460 cars will support the hotel, commercial, and entertainment functions, as will over 2,500 surface parking spaces on adjacent blocks which will be available prior to their development.

The hotel will be managed and licensed by Sheraton Hotels & Resorts, and will feature the brand's signature amenities and services.

The development team is Interlink Group and Starwood Hotels & Resorts, Inc., with design services provided by renowned architectural firm RTKL International. Local design support is by Ray Architects, LLP who will be the architect of record. It is scheduled for completion in the 4th Quarter of 2009.



WORLD TRADE CENTER RENDERING

2.16 WORLD TRADE CENTER

The World Trade Center is a 205,000 SF office tower with a 24,300 SF commercial base located on Block B1d. Its design features a pedestrian pass-through from Baldorioty de Castro Boulevard to the Shopping Street with cafes and services for the offices above. The office tower, one of the taller structures in the District, is an important 'gateway' building emphasizing the office presence in the District at the convergence of the Baldorioty de Castro and the Convention Center Boulevard. It will be a signature building to the vehicular arrival sequence of the Convention Center. It is currently in the design phase, with expected construction in the beginning of 2008.

The development team is Urban Revitalization Group, with design services provided by TVSA of Atlanta, GA, designers of the Puerto Rico Convention Center. Local design support is by V Architecture, LLP who will be the architect of record.



RESIDENTIAL BLOCK C RENDERING

2.17 RESIDENTIAL BLOCK C

Block C is a mixed-use residential, commercial and office complex situated on the Paseo and at the gateway to the District when approached from the north. Its 100 residential units are above a plaza on its west side, lined with 36,000 SF of commercial and restaurants, and 17,000 SF of office space. Other amenities include parking for approximately 380 cars. It is currently under construction, with expected completion the 2nd Quarter of 2009.

The project development team is Mora Development, with design services provided by the Puerto Rican architectural firm of Fiedler & Frias Architects, who is also the architect of record.

2.18 RESIDENTIAL BLOCK D

Block D is a mixed-use residential, commercial and office complex situated across Baldorioty de Castro Boulevard from Block C and at the intersection with Avenida Fernandez Juncos. This block represents another gateway to the District when approached from the east. Its 140 residential units are above a plaza on its north side, on a base that includes 12,000 SF of commercial and restaurants. Other amenities include parking for approximately 335 cars. This development is in negotiation, with an expected completion in 2011.

3.0
PROPOSED DEVELOPMENT CONCEPT

3.0 PROPOSED DEVELOPMENT CONCEPT

3.1 OVERVIEW

The Vision for the Convention District sets the framework for the creation of a vibrant, mixed use, 21st century neighborhood, memorable to its inhabitants, neighbors and visitors. This framework will guide and structure the network of built and unbuilt open spaces, visual links, circulation, building placement and orientation and the distribution of land uses.

The Vision for the District calls for a variety of architectural form and expression, reflective of a true urban setting. The Paseo, Baldorioty de Castro Boulevard, Avenida Fernandez Juncos, the Paseo Park – in short, the streets and parks of the public realm give coherent organization and accessibility to the blocks for development. Together they create a unified network with great formal and functional variety and opportunity.

This continuous public realm integrates the surrounding neighborhoods, both existing and future, and provides human scale and clarity of circulation. Short blocks, with compatibly-scaled buildings, establish a street wall scale shared by all building types, framing sidewalks with minimal setbacks and enlivening the edges with life and activity. Creating this active and attractive pedestrian environment is a key objective.

Certain urban norms, carefully observed, ensure the design coherence and integrity of the whole

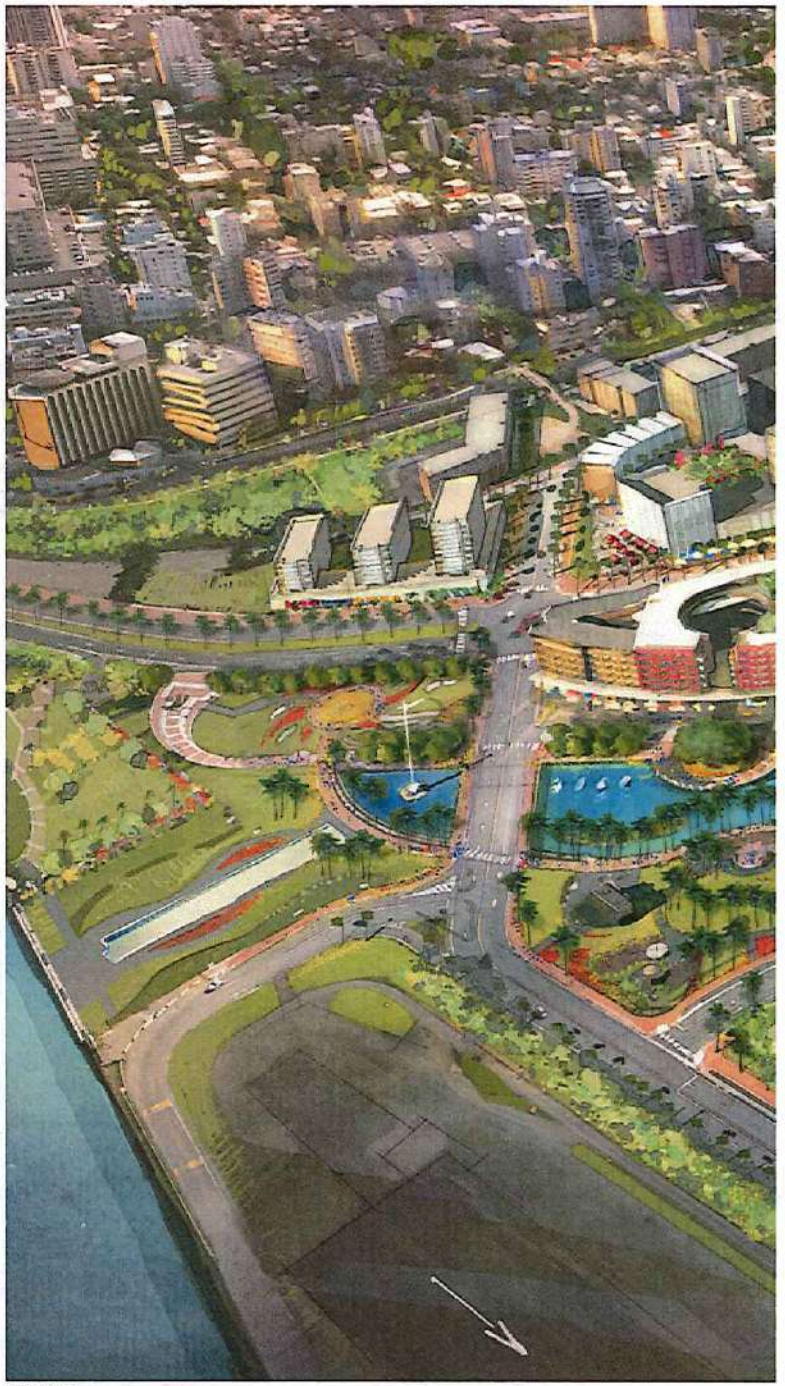


FIG. 3.1.1



FIG. 3.1.1
VISION ILLUSTRATION

1.0
2.0
3.0 PROPOSED DEVELOPMENT CONCEPT
4.0
5.0
6.0
A

FIG. 3.1.2
CONCEPT ILLUSTRATION
Development Blocks



FIG. 3.1.2

a variety of traditional and contemporary materials and expression is encouraged. While a respect for the urban setting and its history is appropriate, this neighborhood should not be a recreation of the past, but rather provide the image of a 21st century neighborhood which grows from its heritage and context.

Development in the District is an opportunity to support responsible investment that improves and celebrates Puerto Rico's natural and cultural heritage without constraining economic activity. The vision includes the integration of climate responsive sustainable site and building design in conformity with Leadership in Energy and Environmental Design (LEED) principles.

Each development parcel has a specific relationship to adjacent blocks as well as to the surrounding landscape and neighborhoods. The scale, character and connections on each block define its presence and individuality while maintaining its role in the cohesiveness of the District's urbanscape. Legibility of this character is important to the District's overall image within greater San Juan and as a vibrant and attractive venue for locals and visitors alike.

Deference to solar orientation, views, wind direction and other natural determinants enhance the urban form. The variety of possible uses, the strategic location of program elements and the sequence of both vehicular and pedestrian circulation and access to the site balance the general and particular urban experience.

These Guidelines are intended to provide guidance for all development in the District. They emphasize intentions, the critical underlying development concepts and the quality and character of place in the District. The relationships that have been tested are put forward diagrammatically to assist development teams and give an indication of possibilities. They are not meant to inhibit the creativity of the design teams, and indeed, seek creative built responses to the goals described in this manual.

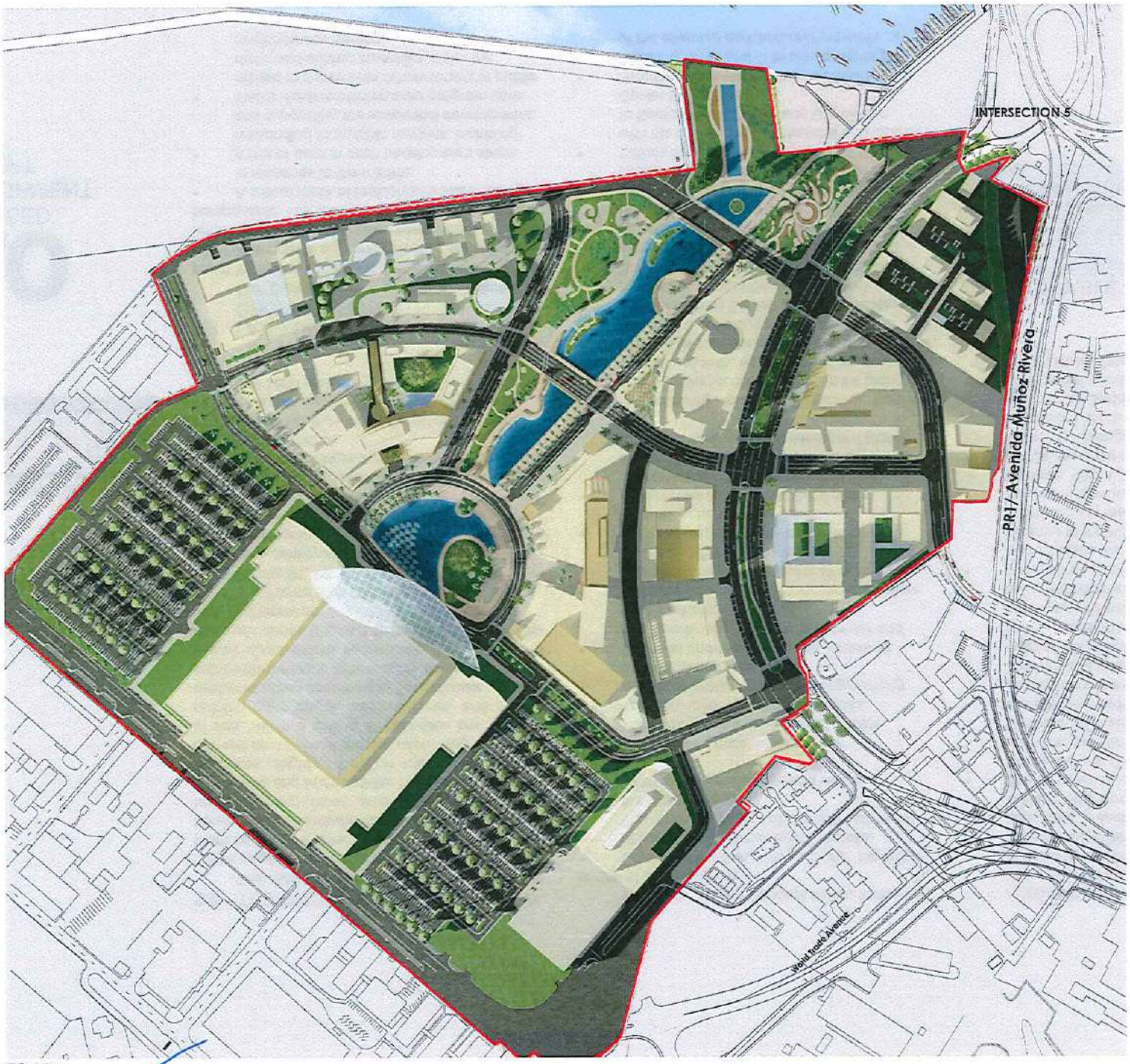


FIG. 3.2.1

FIG. 3.2.1
ILLUSTRATIVE SITE PLAN

3.2 THE DISTRICT NEIGHBORHOOD

The vision for the 113-acre District is of a new urban neighborhood that builds from the development of the new convention facility. It will contain hotels, office, restaurants, cafes, shopping, new residential and other uses compatible with the convention and trade activity. The Master Plan contemplates roughly 4.1 million square feet of development on 17 urban blocks, each roughly 2-acres in size, within a setting of generous and well-appointed open space, water features, and a well-designed urban streetscape. Four distinct areas or sub-neighborhoods that roughly coincide with the overall development sequencing (Fig. 3.8.1) and character zones (Fig. 4.0.1) that make up the District neighborhood:

- The Puerto Rico Convention Center.
- Blocks B1, B2, B3, B4 and C - the intense high-density mixed-use nucleus of the development.
- Blocks D thru G located east of Baldorioty de Castro Boulevard- a fine-grained fabric of residential and professional office buildings linked to Miramar, a popular well-established neighborhood.
- Blocks I and J - located west of the Paseo Park and planned for cultural, institutional and hotel uses.

3.3 LAND USE AND BLOCK ORGANIZATION

The Development Concept is designed to adapt to market conditions. Recent market analysis strongly suggests a strong role for residential and hotel space, with distinctive complimentary office components. The Vision for the District provides:

- A critical mass of residential square footage in response to the market.
- A mix of uses in each development stage responding to multiple markets, including and supporting the residential development.
- Viable clusters of integrated program uses related to increments of investment in public realm and shared amenities within the neighborhood setting.

The Development Concept builds from three scales of consideration:

- Context of the San Antonio Canal, the Isleta of San Juan, Miramar, and Condado.
- The optimum pattern of use and activity for the site as a whole.
- Defining viable development stages.

Key planning considerations are:

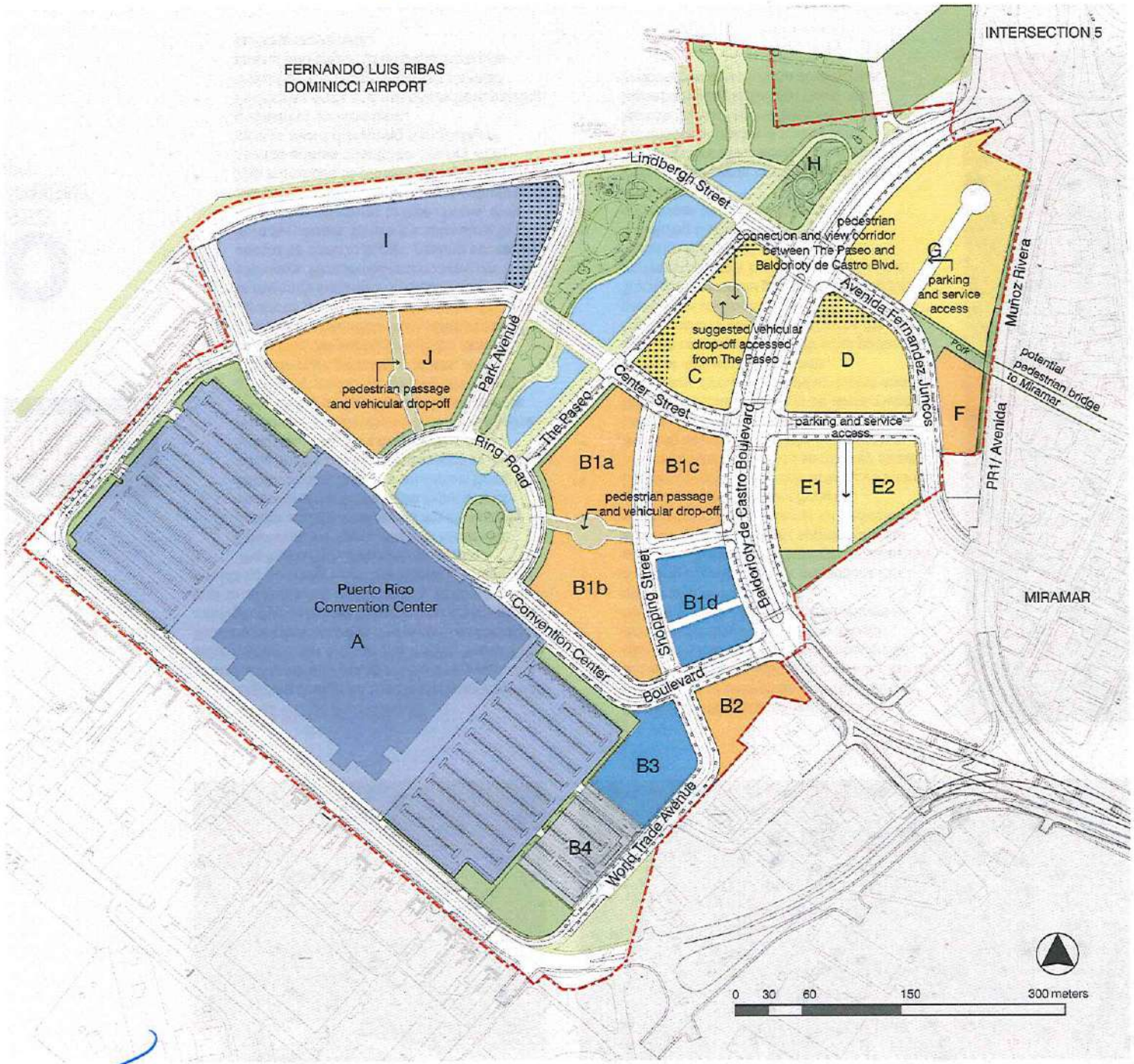
- Viable development parcels of a scale appropriate to market opportunities.
- Beneficial interaction and synergy among the anticipated land uses.
- Potential connections to the adjoining neighborhoods, especially Miramar and the Condado.
- Potential for long term connections to water activities including the cruise ship terminal on the San Antonio Canal.
- Ability to respond to the possible future redevelopment of the Airport
- Ability to take advantage of the re-design of Intersection #5 and the opportunity for improvement of key linkages to the Laguna del Condado, the Condado, the Isleta and Miramar.

The following desirable adjacencies, location, visibility and required connections inform the proposed distribution of uses in the early stages of development:

- Hotel uses are allocated to B1a, B1b, B1c, B2 and J blocks due to their proximity to the Convention Center, and their presence on the Convention Center Boulevard and the Ring Road. Blocks B1a and B1b will also include an entertainment center and capitalize on the commercial edge framing the Shopping Street. Block F will be also developed as a hotel that serves the District as well as the surrounding neighborhoods.
- Offices are located on B1d and B3 blocks with the orientation of entrances and lobbies to Baldorioty de Castro and Convention Center Boulevards.
- Residential development is allocated to Blocks C, D, E, and G to take advantage of the adjacent parkland and proximity to restaurants and commercial. Blocks have been planned to accommodate a variety of housing typologies as the surrounding programmatic relationships evolve, and according to each blocks location relative to existing neighborhoods and site topography.
- The intersection of Baldorioty de Castro Boulevard and Central Street is a major entry point into the site for non-convention users. Commercial is strategically positioned along this gateway and along the Shopping Street, an internal spine which links all uses.
- The Paseo, a major promenade along the edge of the park, features restaurants and cafes which spill onto outdoor terraces. This park is a significant highlight of the larger San Juan Metropolitan Green Network. (Fig. 1.3.2)
- A sequence of smaller, less formal green or plaza spaces link across the District from Miramar to the Aquarium site, and to the south edge of the San Antonio Canal, and again, the San Juan Metropolitan Green Network. (Fig. 1.3.2)
- A multi-story parking garage on block B4 will serve all Stage 2 (Fig. 3.9.2) uses. Its location south of the Shopping Street will route pedestrian movement along the commercial spine toward the restaurants at Center Street Plaza and the Paseo.

DISTRICT TABLE OF USE

Residential	563 UVBs
Hotel	1,772 Keys
Office	339,921 SF
Commercial / Restaurant	245,000 SF
Convention Center	1,456,058 SF
Parking	7,914 Spaces



LEGEND

- Residential
- Hotel
- Office
- Civic
- Parking
- Public Open Space
- Private Development/ Public Open Space
- Pedestrian passage
- Plaza
- District Boundary

FIG. 3.3.1
LAND USE PLAN

FIG. 3.3.1





3.4 THE PUBLIC REALM

Building design for the District neighborhood should acknowledge the street hierarchy and circulation patterns set forth in the Public Realm Plan. Building heights, massing and entrances should be strategically positioned to frame parks and squares and to animate the public realm. Building design should be consistent with the following principles:

- The Paseo Park, Baldorioty de Castro Boulevard, the Paseo, Avenida Fernandez Juncos and the local streets are the unifying elements of the public realm in the District neighborhood. Buildings on parcels facing these open spaces are encouraged to maintain a relatively consistent massing and scale, required for the framing of these open spaces.
- The parking and service entries should be judiciously placed by keeping them away from the main pedestrian routes. At the same time the entries should be clearly visible and accessible from vehicular streets.
- All above grade parking should be designed to minimize visibility from public streets or pathways. Residential and commercial uses should be used to screen parking structures from the streets. Where it is unavoidable for parking structures to face streets, they should be designed and treated with care.
- The entrances to parking garages and service entries should be treated with care to avoid disrupting the quality of pedestrian environment.
- Pedestrian entry and exit points from parking should be strategically located on main streets and plazas to animate them and facilitate movement.
- Special attention should be given to the location of pedestrian and vehicular entrances to the buildings to provide ease of circulation and clarity of arrival sequences.
- Principal pedestrian entrances should be clearly marked and identifiable from a distance at all times.
- A variety of ground plane projections like canopies, awnings and signage, or recessed arcades for shade where appropriate, are suggested to create interest for pedestrians and to animate the street facades.
- Loading docks and vehicle entrances should be located on designated secondary streets.
- Building design should take into account both current and future phases.
- Noise and vibration should be abated where necessary, through thoughtful design and relevant acoustical treatments.
- Multiple entrances along principal pedestrian routes are encouraged to enhance the pedestrian environment.
- Transparency at the ground level on active pedestrian streets is encouraged to allow "eyes on the street".
- A building typology that provides a continuous framing of the streets is encouraged.
- Internal courtyards or open spaces and openings that allow cooling breezes through the interior of blocks is encouraged.
- Multiple balconies and terraces on buildings (especially residential and hotel) are encouraged to enrich the streetscape.



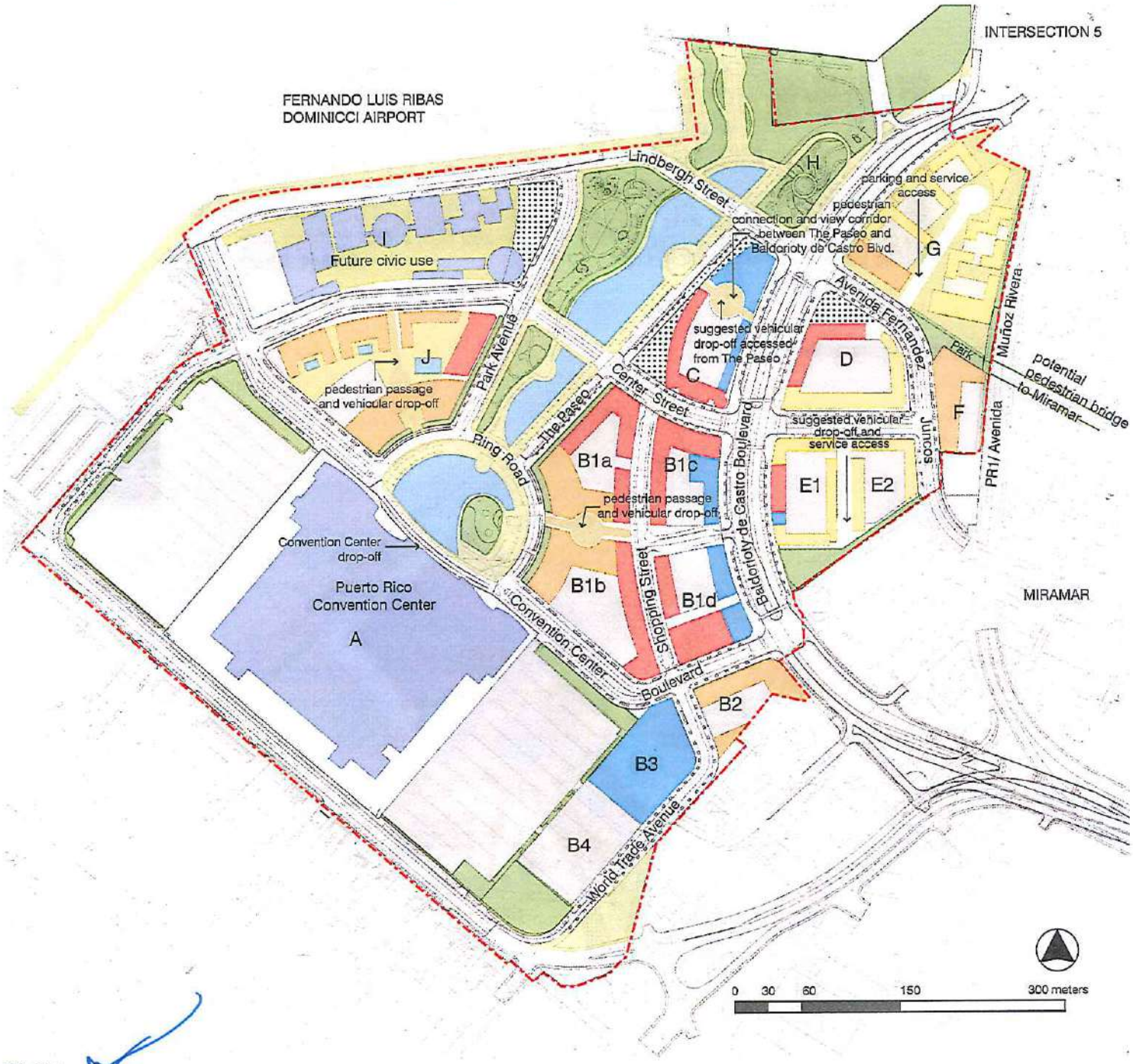


FIG. 3.4.1

3.0 PROPOSED DEVELOPMENT CONCEPT

LEGEND

- Public Open Space
- Private Development/ Public Open Space
- Protected Trees
- Future civic use
- Pedestrian passage
- Plaza
- Convention/Civic
- District Boundaries

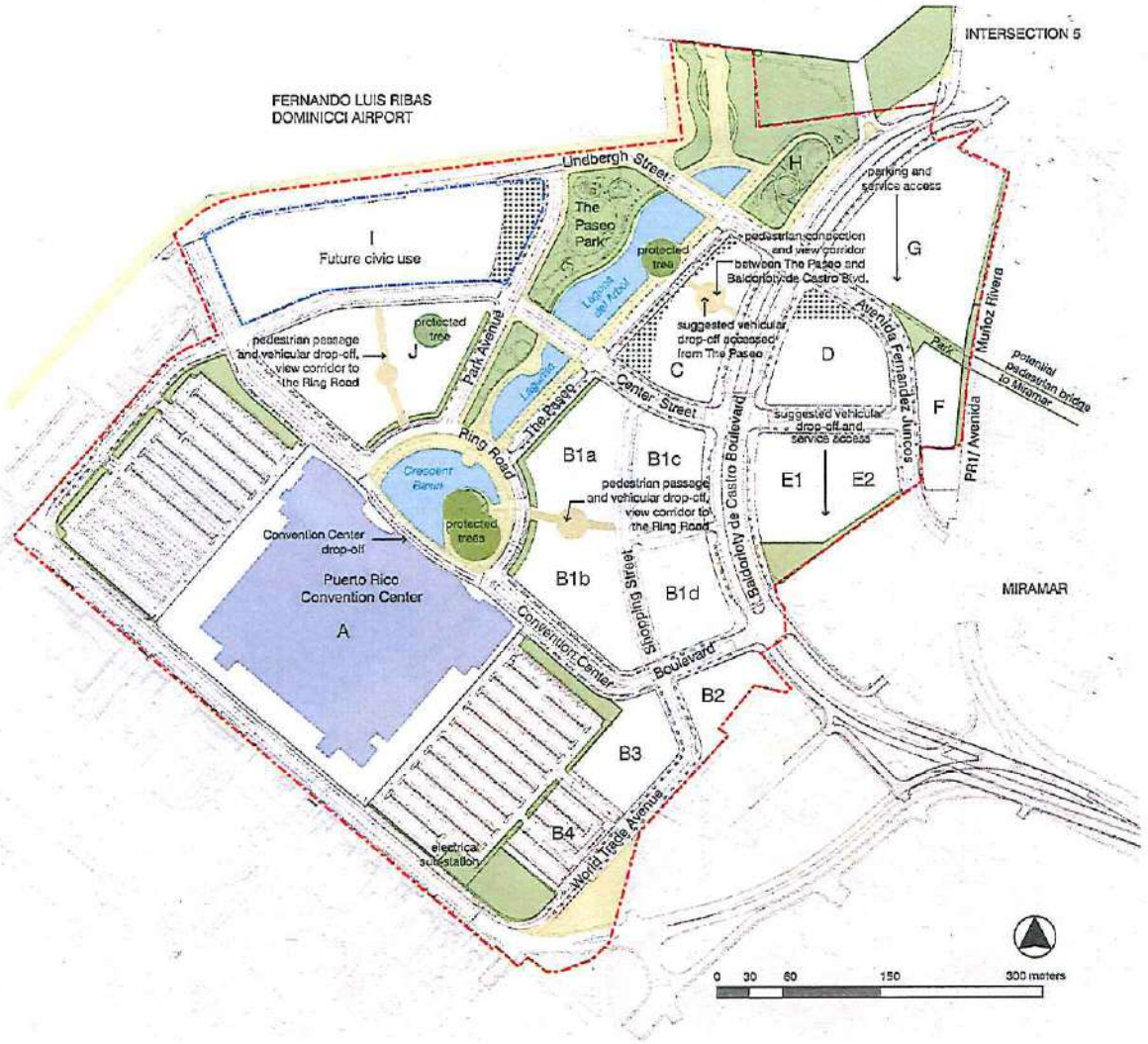


FIG. 3.5.1
OPEN SPACE PLAN

3.0 PROPOSED DEVELOPMENT CONCEPT

FIG. 3.5.1

3.5 OPEN SPACE

Open spaces of various types form important organizing elements of the Vision. The Paseo Park frames a major vista connecting the Convention Center to the San Antonio Canal, and the emerging San Juan Waterfront. The space combines greenery, water fountains and pools and other recreational settings into an important gathering place. The triangular plaza at Center Street forms an urban transition between parkland, the canopied Shopping Street, and the commercial and commercial core.

Smaller open spaces such as the Block D Plaza and Miramar Connection at Block F join with the Center Street Plaza to provide amenities and shaded respites for east-west pedestrian movement across the District. They open vistas to the Paseo when approaching the District from Miramar on Avenida Fernandez Juncos, culminating at Aquarium Plaza. These smaller open spaces support a variety of program uses according to their location, from forecourt to major entrance to local playground or cafe terrace.

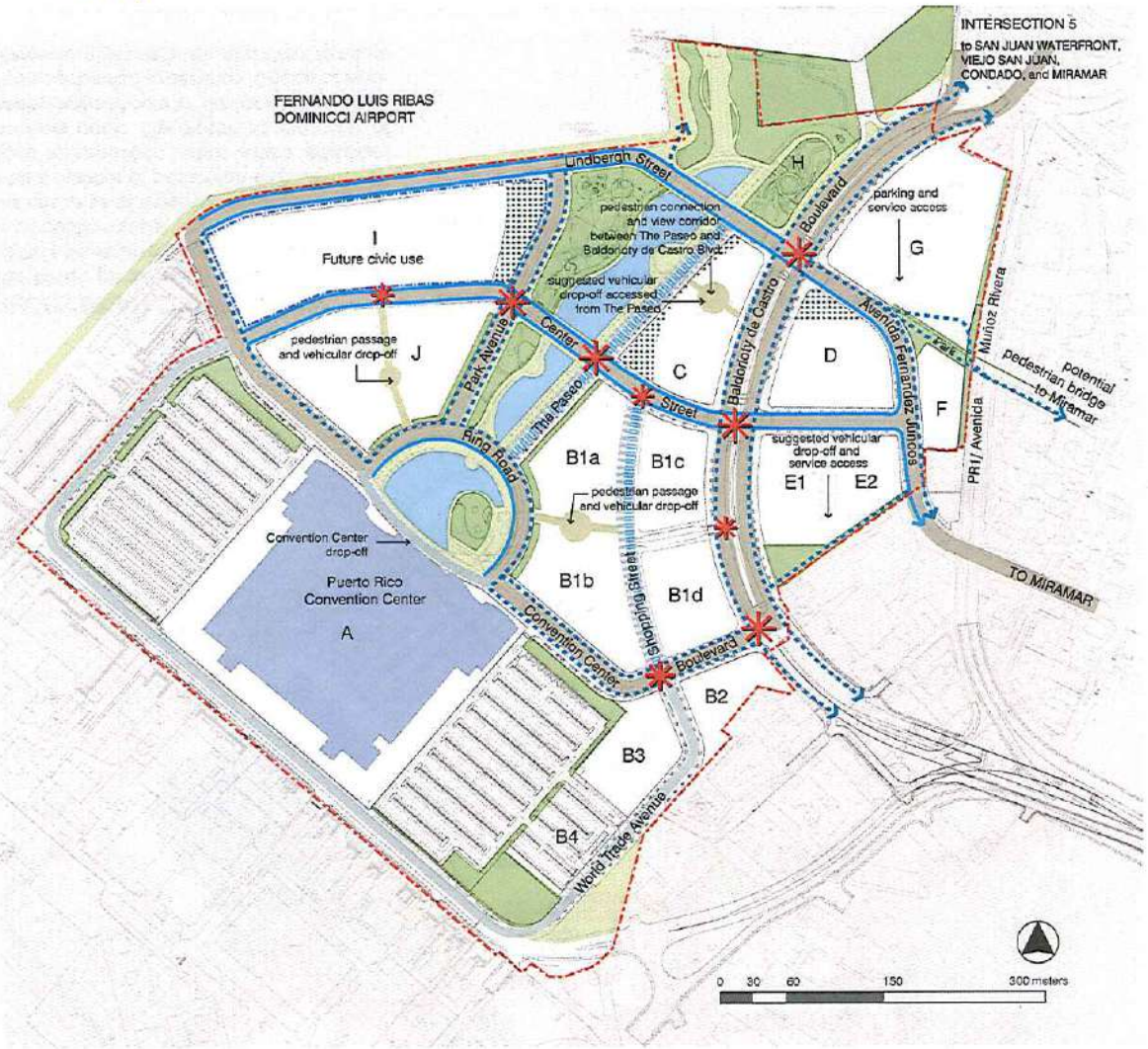


FIG. 3.6.1

3.6 VEHICULAR CIRCULATION

The site is strategically located off Intersection #5 and proposed connections to Muñoz Rivera Highway. The new Baldorioty de Castro Boulevard, conceived as a grand ceremonial street, provides major regional access to the District. Intersections along the Baldorioty are thus important vehicular and pedestrian gateways. These include intersections at Lindbergh Street, Center Street, Convention Center Boulevard, and a right-in, right-out only intersection within the B blocks.

The intersection at Lindbergh Street provides access to the District from the north and offers views of the vast recreational Paseo Park. The Center Street intersection is intended to serve as a major vehicular entry to the commercial and restaurant zone of the Shopping Street and the Paseo. Eventually this intersection will be the gateway to major cross-District access. The gateway at Convention Center Boulevard showcases the business functions of the District and begins the arrival sequence to the Convention Center.

Vehicular entries to the buildings have been carefully positioned based on desired street character, distances from intersections and the appropriate location of service and parking access.

FIG. 3.6.1
VEHICULAR CIRCULATION

LEGEND

- Major Pedestrian Paths
- Pedestrian passage
- Plaza
- Public Open Space
- Private Development/ Public Open Space
- Gateway
- Convention/Civic
- District Boundaries

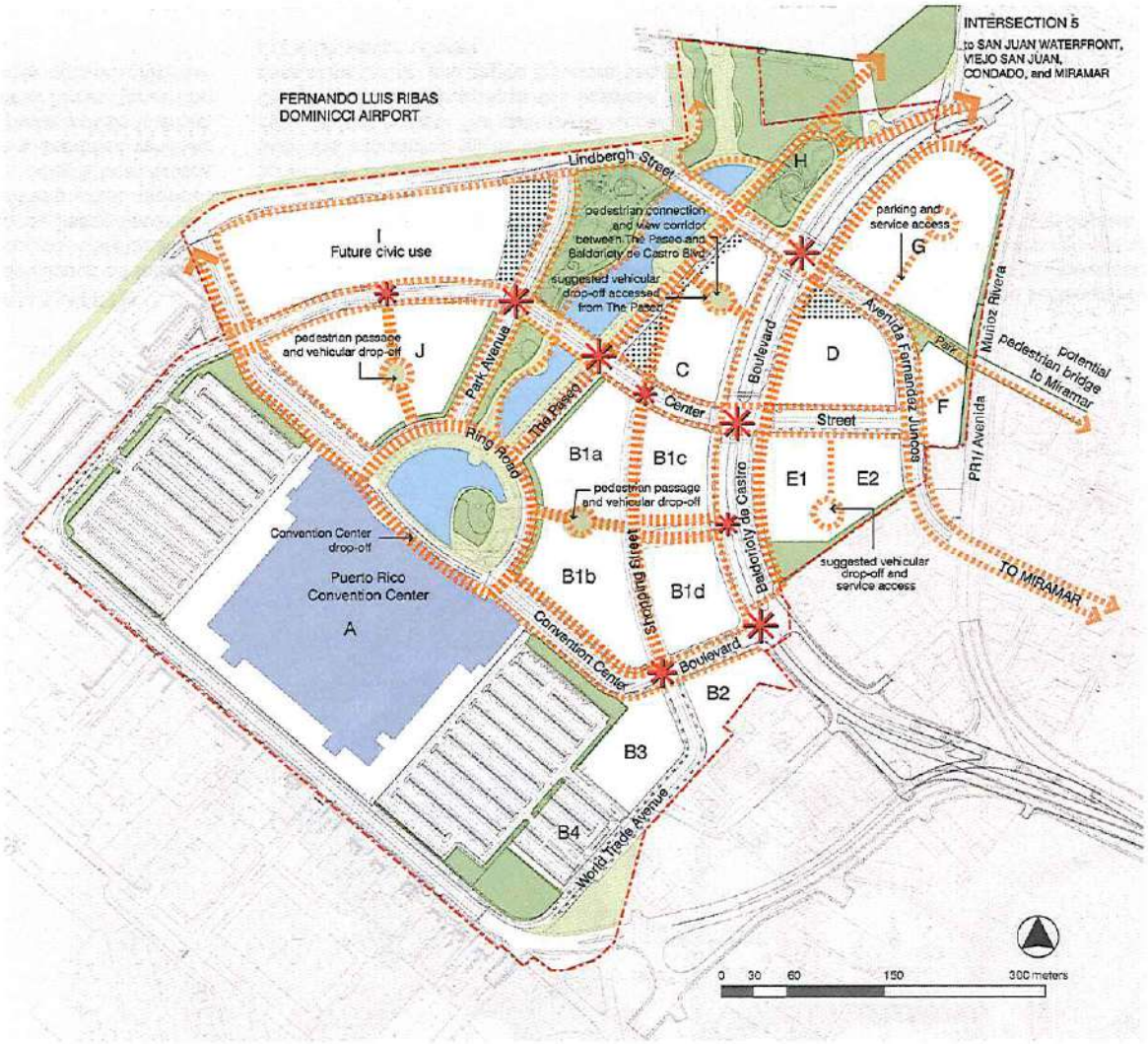
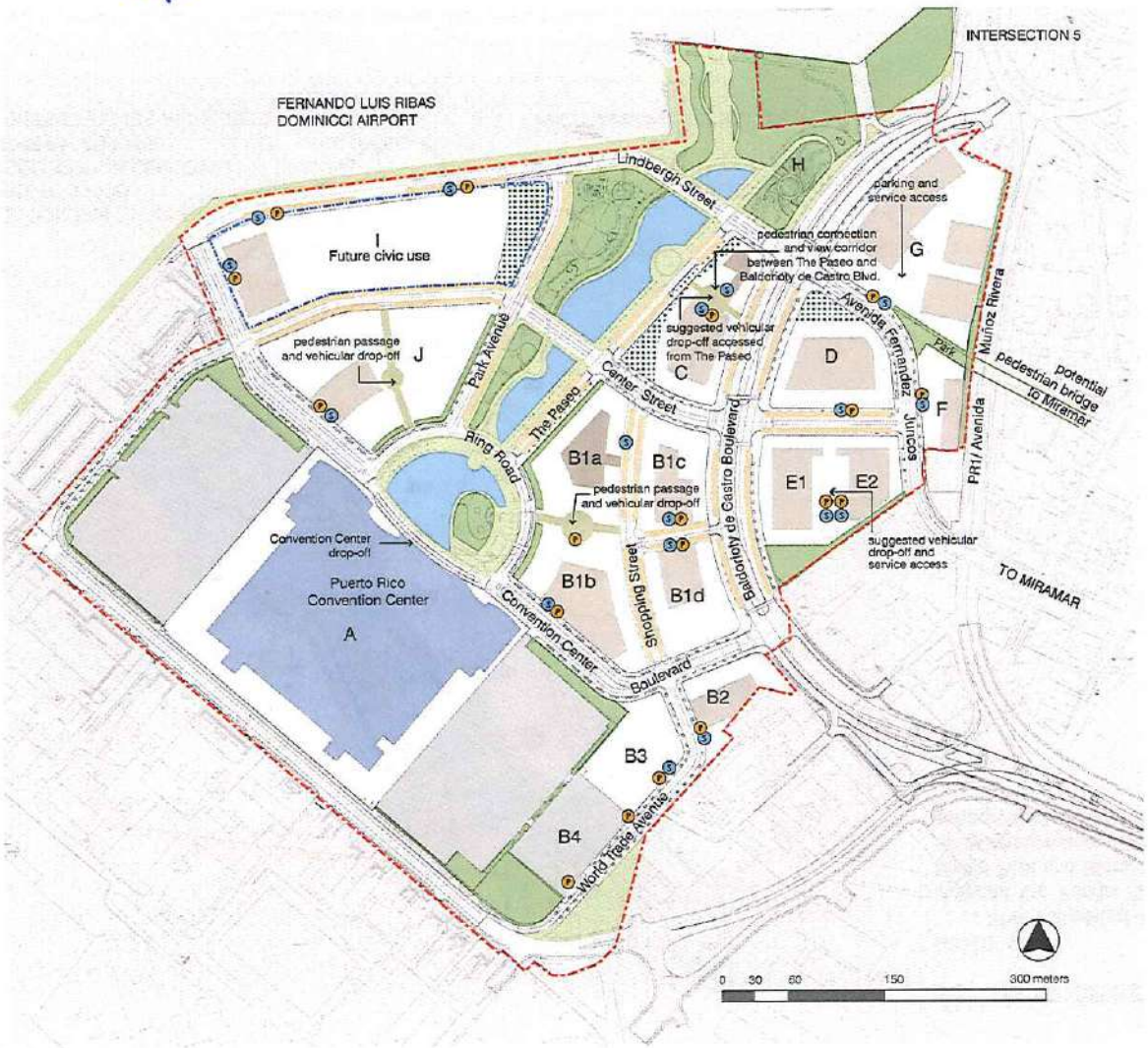


FIG. 3.7.1
Pedestrian Circulation

FIG. 3.7.1

3.7 PEDESTRIAN CIRCULATION

The Vision places great importance on the quality of the pedestrian environment. A fine-grained network of public streets with shaded tree- lined sidewalks connects all areas of the District, supplemented by a number of pedestrian-only links to be established at mid-block points where important paths or views occur. The treatment and scale of all pedestrian ways should be designed to ensure a comfortable pedestrian experience. Choice of landscape elements, plant materials, and street furniture will be particularly critical, with special emphasis on respite from heat and shelter from rain. Innovative design solutions that provide climate mitigation along all streets is encouraged.



LEGEND

- Parking Area
- Service Area
- Parking/Service Area
- Street Parking
- Service Access
- Parking Access
- Public Open Space
- Private Development/ Public Open Space
- Convention/Civic
- District Boundaries

FIG. 3.8.1

FIG. 3.8.1
Parking and Service Plan

3.8 PARKING AND SERVICE

The mixed-use nature and development sequence of the Development Concept Plan provides for the following:

- Use of surface lots on unbuilt blocks as interim parking.
- Shared parking solutions between different uses.
- Structured parking integrated within blocks.
- Shared use of a major parking structure on Block B4.

The plan anticipates entry points to parking and service based on the intended circulation and street hierarchy.

LEGEND

- Stage One
- Stage Two
- Stage Three
- Stage Four
- Public Open Space
- Private Development/ Public Open Space
- District Roadway
- Convention/Civic
- District Boundary

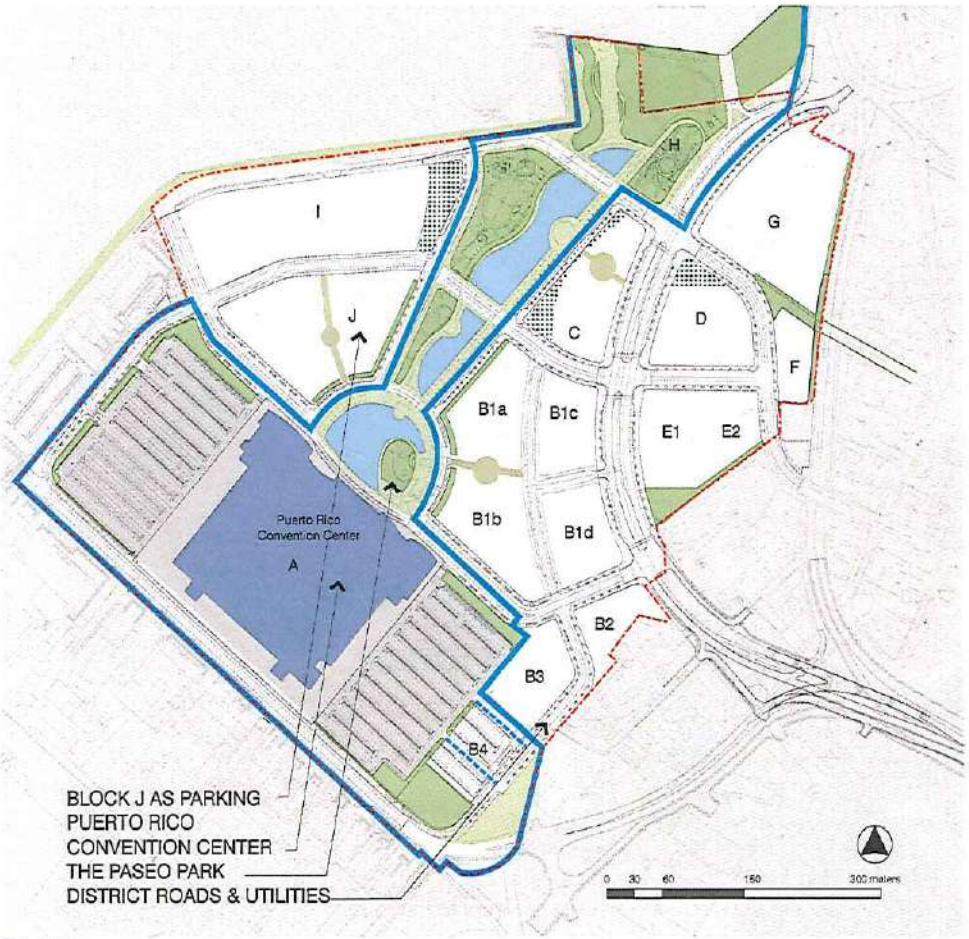


FIG. 3.9.1

3.9 DEVELOPMENT SEQUENCE

STAGE 1

The completed first stage of development included the Puerto Rico Convention Center, the Paseo Park and Block H, all District roads and the utility infrastructure. Surface lots for interim parking are provided on Block J.

FIG. 3.9.1
DEVELOPMENT SEQUENCE
Stage One

STAGE 2

The second stage of development focuses on the B1, C, and D blocks to the east of the Paseo Park, bounded by the Paseo and Baldorioty de Castro Boulevard. This stage will establish the commercial and commercial nucleus of the District. Blocks B1a & B1b, immediately adjacent to the Convention Center, leads the construction in this development stage. These blocks will immediately complement the Convention Center functions with a program of hotel, restaurant, commercial and entertainment uses, creating a critical mass of activities and a pedestrian-friendly environment for many different populations. The development concept for the Paseo, like River Walk in San Antonio, Texas, or Las Olas Boulevard in Ft. Lauderdale, Florida, will provide an engaging recreational venue, giving the hotel a draw greater than Convention Center events and attractive to other market segments.

Stage 2 includes residential units with at-grade commercial and possibly professional offices on blocks C and D, with primarily office use on block B1d. The plaza at Center Street and Parcel D, passages in the C and B1a & B1b blocks, and the more intimate scale of the Shopping Street augment the bustling pedestrian streetscapes.

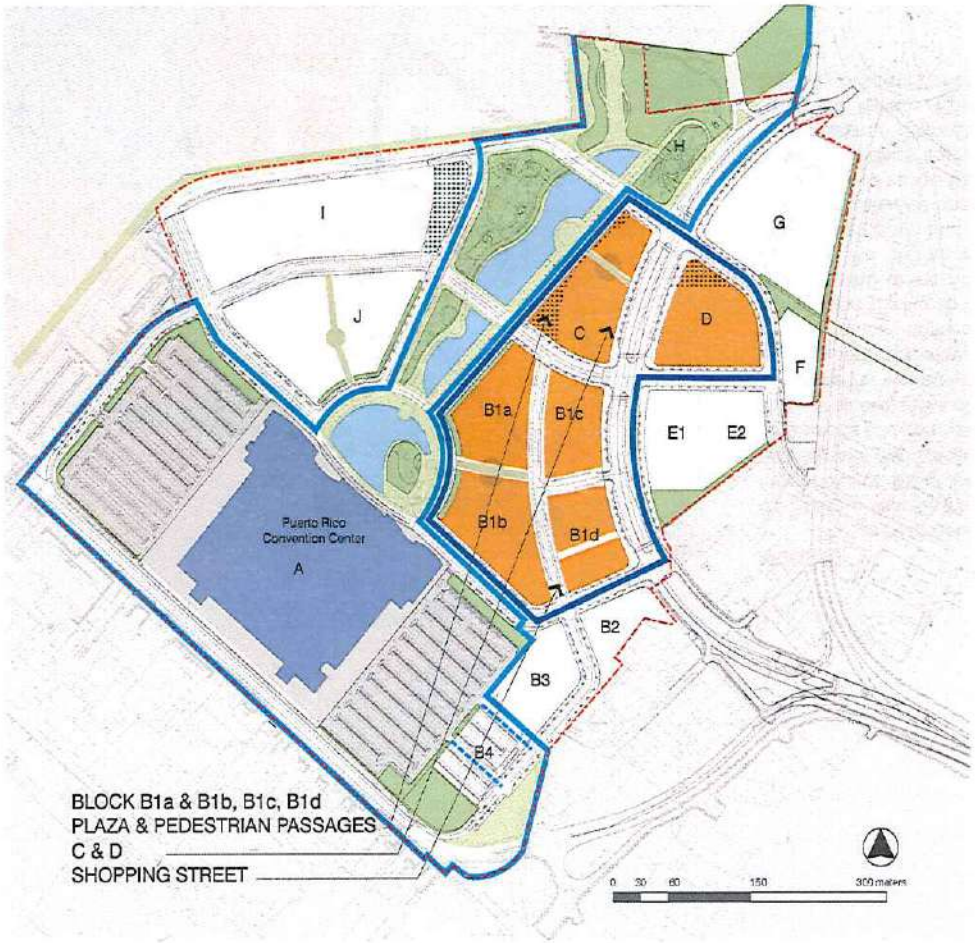


FIG. 3.9.2

FIG. 3.9.2
DEVELOPMENT SEQUENCE
Stage Two

LEGEND

- Stage One
- Stage Two
- Stage Three
- Stage Four
- Public Open Space
- Private Development/ Public Open Space
- District Roadway
- Convention/Civic
- District Boundary

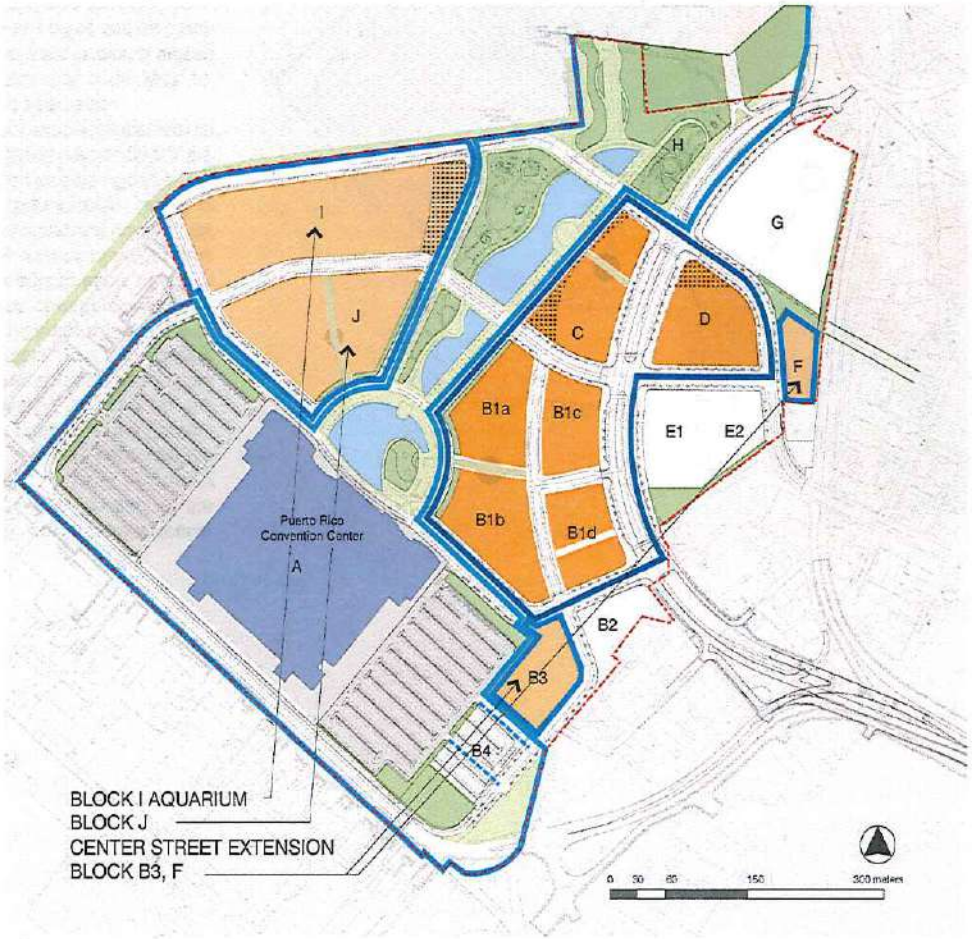


FIG. 3.9.3

FIG. 3.9.3
DEVELOPMENT SEQUENCE
Stage Three

STAGE 3

The development of blocks J, F and B-3 realize Stage 3 with hospitality-based program. A 400 room hotel on Block J will complete the urban context around the Crescent Basin, with hotel-based restaurants and commercial at grade. The construction of the Aquarium of Puerto Rico on Block I will complete the western edge of the Paseo, adding an exciting attraction of regional importance.

Another hotel of 300 rooms will flank the Convention Center to the east on Block B3, capping the end of the Shopping Street. Block F will integrate the District with the Miramar neighborhood. Its program of a smaller, boutique-style hotel offers a transitional amenity to both Miramar and the District. Situated on Block F Park and at a higher elevation, it takes advantage of superior views and restaurants on Block D and in Miramar, as well as along the Paseo. A pedestrian bridge across the highway will contribute to this goal.

STAGE 4

This stage completes initial construction within the District with the development of blocks E, G, B2, and B4. Block B2 is planned for an office program. Blocks E and G propose residences with some commercial on Baldorioty de Castro Boulevard similar to the program on Block D. These three developments will complete the streetscape on Baldorioty de Castro Boulevard. Finally, a large parking facility will be built on Block B4 to serve all District developments.

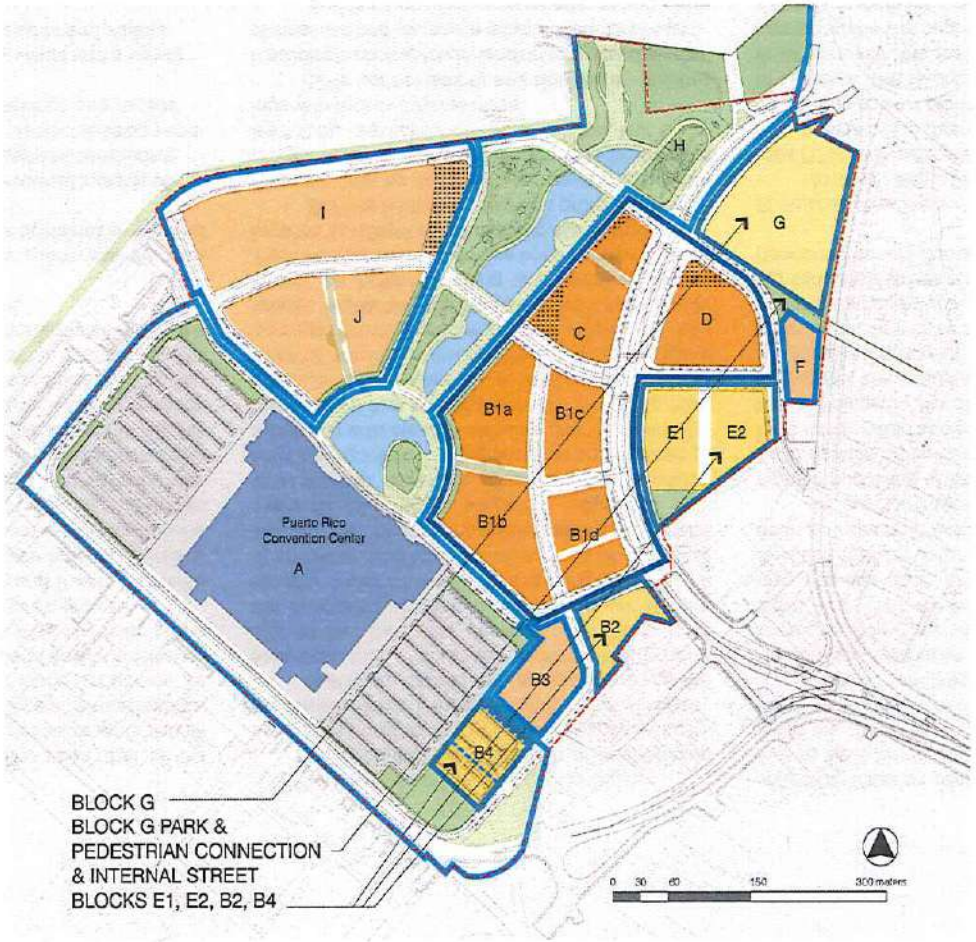


FIG. 3.9.4

LEGEND

- Stage One
- Stage Two
- Stage Three
- Stage Four
- Public Open Space
- Private Development/ Public Open Space
- District Roadway
- Convention/Civic
- District Boundary

FIG. 3.9.4
DEVELOPMENT SEQUENCE
Stage Four

3.10 SUSTAINABILITY

The new urban neighborhood that is the Puerto Rico Convention District represents a hallmark of 21st century development in metropolitan San Juan, and is unparalleled in the Caribbean. Its vision embraces the rising tide of environmental responsibility globally and as a major contribution to its goals for tourism and economic growth.

Memories of San Juan and Puerto Rico's indigenous tropical beauty support tourism. Development in the District should likewise capitalize on the sustainable practice of design with local materials and plant species, reinterpreted in a vibrant, modern urban ecology. Energy and construction costs continue to rise, challenging the economic viability of projects both at inception and in life cycle costs. Deteriorating environmental conditions in the San Juan metropolitan area reduce the quality of life for both residents and visitors, potentially inhibiting the region's future touristic growth.

The Design Guidelines encourage the integration of climate-responsive sustainable site and building design

- To avoid adverse environmental impacts of District development in general, to adjacent properties, and between District developments
- To promote operating savings and reduce construction costs
- To create a high quality visual and sensory experience for all inhabitants and visitors

The sustainable management of energy conservation, air quality, water distribution and reuse, and local bio-climate mitigation for comfort all serve these goals.

GUIDELINES FOR SUSTAINABLE DESIGN

Sustainable design in the District should address four fundamental points:

A Solar Control
B Facilitation of Air Movement
C Sustainable Urban Transportation
D Water Conservation

Important aspects of the four fundamental points of sustainability are summarized below.

A. Solar Control and Energy Conservation

Solar control, or prevention of heat-buildup by shading, is of utmost importance in achieving indoor and outdoor thermal comfort in tropical cities.

Buildings should be elongated along the east-west axes, with longer facades facing north and south. The most desirable orientation is to the northeast; placement of windows on western facades must be avoided. (See Fig. 3.11.1). All openings on a building's surface must be effectively shaded with permanent and/or adjustable façade elements (overhangs, wings/fins, eggcrates, louvers, screens, balconies, plant materials, or, preferably, a combination – diagram of fin and overhang). A building with creative massing and form can also shade itself. Any shading element projecting from the buildings' surface or roof (such as trellises) must be secured to the structure to avoid hurricane damage. Shading requirements of adjoining public spaces, sidewalks and pedestrian walkways should inform the building's siting and massing design. Trees with dense foliage have been shown to shade façades as effectively as building elements. [a]

Surface heat gain has been proven to be significantly less for buildings and paving with white or light-colored surfaces (albedo reflectance of at least 0.5), especially on roofs/terraces, and buildings with higher thermal mass.

Solar control directly and significantly reduces a building's cooling loads, leading to reduced air conditioner use and savings in related operational costs.

Buildings can further save energy and money by harnessing solar power for heating water for domestic use.

Encourage hybrid technology and alternative energy sources.

B. Facilitation of air movement

The north-south orientation preferred for solar control will also allow the prevailing eastern winds to lift off heat from the building's surfaces, allowing cooling breezes to reach buildings and outdoor spaces beyond. Tall buildings with large sail areas facing the prevailing wind direction will contribute to Urban Heat Island (UHI) effect by blocking winds and are susceptible to hurricane damage. A monolithic building block, which will create a hot and stagnant wake that is three to eleven times its height[b], can be selectedly lifted on pilotis and provided with openings to allow for cooling winds to penetrate and traverse the site to reach adjoining open spaces and buildings. (Diagram of bldg on pilotis)

Natural ventilation during the daytime and fan-assisted ventilation at night are viable cooling strategies in San Juan's climate and should be provided in addition to air-conditioning to reduce energy use and costs. Windows parallel to the wind direction can be amended with wings/fins to pull fresh air indoors. (Wing wall diagram)

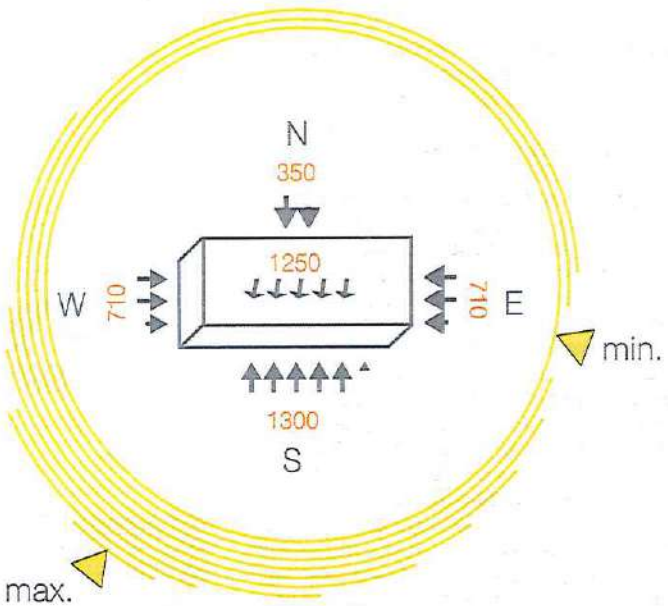
In coastal zones, the UHI effect weakens nigh-time cooling breezes due to sustained hot temperatures on land, making urban environments least comfortable at night. Water bodies placed before buildings, in the direction of prevailing winds, will temper the winds during the day and provide evaporative cooling at night when left free of tree cover. In tropical cities such as San Juan, day-time shading combined with night-time evaporative cooling can help achieve a comfortable outdoor and indoor environment throughout the year.

C. Sustainable Urban Transportation

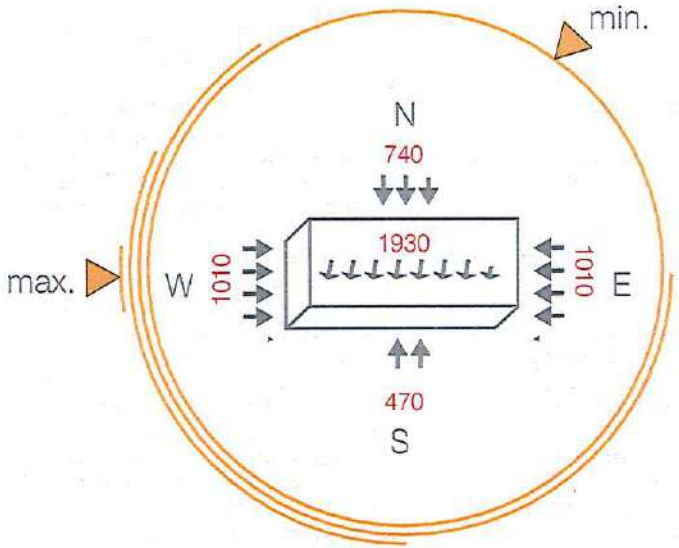
In May, 2003, San Juan completed a 10.7 mile (17.2 km) metrorail system called Tren Urbano that connects San Juan, Bayamón and Guaynabo, with an extension planned for the eastern suburb of Carolina. The re-organization of the bus system in tandem with the metrorail is still pending; once complete, the first segment of the rail line will serve 115,000 people per day. All new developments should consider connections existing and planned bus routes and train stations to assist the city in reducing automobile-use, congestion and pollution for the benefit of its residents and visitors. Pedestrian activity should be encouraged with the layout of shaded sidewalks and pathways that are furnished for a variety of activities and are well-lit at night.

D. Water Conservation and Pollution Prevention

The sprawling development of the San Juan metropolitan area poses an immediate threat to the ecological integrity of surrounding marine systems, which is central to the city and island's tourism economy. The city has experienced periods of drinking water shortage during the last two decades, while also suffering from flash floods during rainstorms,



DECEMBER



JULY

LEGEND

- 2°F/1.1°C Difference By Lowest Daily Temperature (December)
- 2°F/1.1°C Difference By Lowest Daily Temperature (July)
- 250 BTU/Sq. Ft/Day of Global Incident Radiation[c] (Actual Value IN RED)

AVERAGE INCIDENT SOLAR RADIATION FOR SAN JUAN:
VARIATION OF AMBIENT TEMPERATURE AROUND A BUILDING (APPROXIMATE PATTERNS FOR MIAMI, 24° LAT.)

FIG 3.11.1
AMBIENT TEMPERATURE VARIATION

due to unplanned development. A multi-prong approach including strategies for water conservation, storm water management and pollution prevention can ensure the availability of drinking water and recreational water environments for the future while also preventing flood damage.

New developments can reduce loads on storm water sewers by using permeable hardscape alternatives that allow natural infiltration of rainwater into the ground. Landscaping with species that actively clean water will help further prevent the pollution of nearby water bodies by contaminated runoff.

Where possible, gardens should be landscaped with indigenous plant materials or plants native to the microclimate that do not require frequent irrigation or maintenance such as fertilization, pesticides and herbicides. Harvested rainwater or filtered gray water should be used for irrigation of plants to conserve fresh drinking water. Consider plant materials that actively clean air and water

LEED CERTIFICATION

All construction in the District is expected to meet, at least, LEED Silver Certification status.

[a]Extensive tree coverage will contribute to Urban Heat Island (UHI) effect at night by preventing heat radiation from pavement and building surfaces to dissipate into the cool night sky, thus making the facilitation of air movement below the canopy important.

[b]Length and form of wake is dependent on roof shape and building width. Actual path and speed of wind flow through an urban site can only be estimated by wind tunnel tests or virtual CFD modeling.

[c](Key) Includes direct beam radiation, sky radiation, and radiation reflected from the ground in front of the surface, with 9% uncertainty. 30-year averages from http://rredc.nrel.gov/solar/pubs/bluebook/

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3.11 MASSING

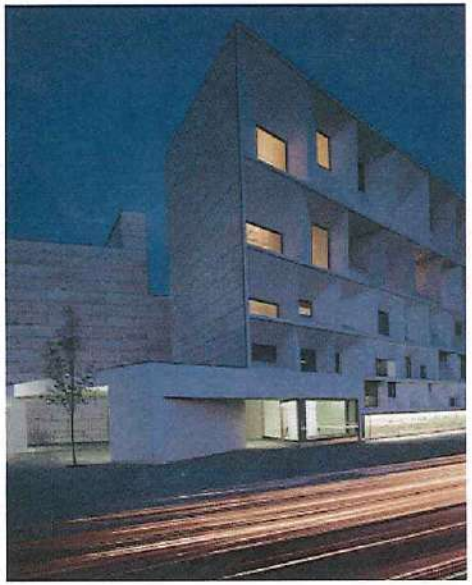
Building orientation and massing is strategically deployed in the Vision to frame parks, streets and squares, contribute to an interesting and varied skyline and to support an active public realm at street level. Building height is subject to FAA limitations in a rising wedge across the sites from Dominicci Airport (see section 2.10.1). To achieve overall cohesiveness while allowing for diversity, building design should be consistent with the following principles:

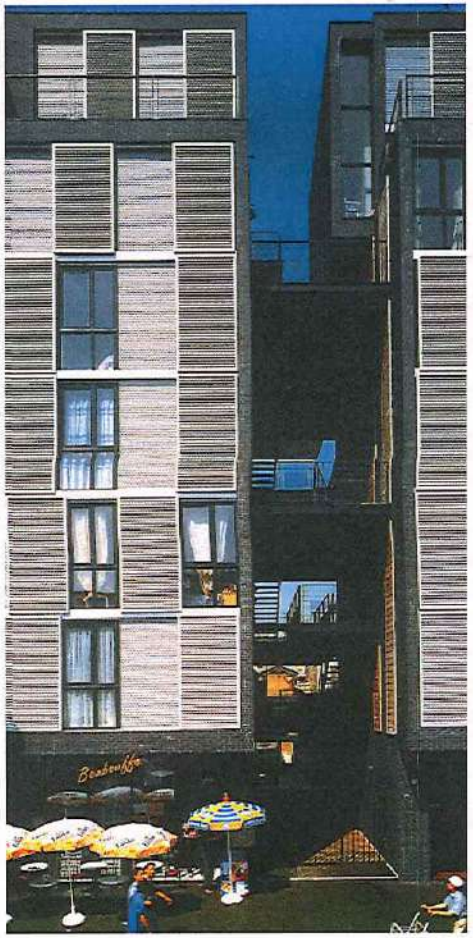
- Orient buildings to take advantage of views to green spaces and surrounding vistas.
- Orient buildings with careful consideration for wind and sun direction, particularly as they affect the experience of the public realm.
- Buildings should have a carefully articulated base of one or two floors with high level of transparency and lightness at the ground floors. Tall floor to ceiling space and visibility is encouraged for commercial.
- A clearly articulated middle section of the building mass is recommended for continuity and consistency along street frontages while allowing for individual architectural identity.
- The base and middle sections together define the pedestrian experience of the public realm. Special care should be taken to the scaling, architectural detail, and climate mitigation for pedestrians of these portions of the building.
- The base and middle sections should typically extend to the street right-of-way with multiple entrances encouraged.
- Taller building portions should be set back from the base and the middle section façades by at least 3 m (10 ft). Top sections of the buildings should express variety within the development. They should be treated with care as they present the skyline image for the District from the surrounding neighborhoods and ships arriving in San Juan.
- The view from Miramar should be well considered, since the length of the District aligns with this neighborhood.
- Design mechanical penthouses and vertical roof projections as integral parts of each building composition.
- Avoid blank walls along all public streets, courts and pedestrian walkways.
- Corner articulation of buildings, where appropriate, is encouraged.
- Above grade parking structures should be wrapped as much as possible by other uses and/or treated in design terms to feel like integral parts of the architecture.

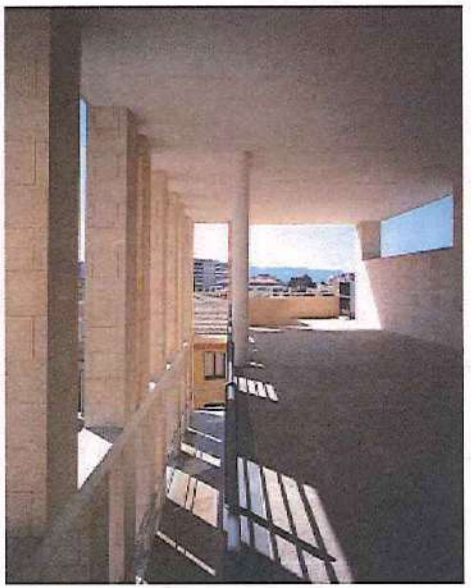
3.12 LIGHTING

Lighting plays an important role in the Vision for the District. It contributes to the District's character and ambience, safety and sustainability goals. Lighting design should be coordinated in all design to:

- Reduce light pollution between buildings and program uses
- Reduce negative impacts on urban ecology
- Reduce energy demand for night lighting
- Improve visual quality in the public realm in the spirit of the specific qualities of each urban character zone
- Provide for safety and security throughout the District
- Enhance commercial visibility and restaurant/entertainment ambience
- Enhance night views that contribute to the District's tourism appeal
- Lighting fixtures with cut-off angles that prevent light from spilling upwards or too far laterally is encouraged
- Height of luminaries should be considered relative to property boundaries to reduce spill to neighbors









3.13 SIGNAGE

Site signage in the District will gracefully direct people through its neighborhoods with strategic placement and easily readable type.
Commercial and commercial signage will

- Support the central themes of the Vision and Guidelines
- Remain within specified areas of building facades
- Generally create no interference with adjacent uses
- Observe concerns outlined in Lighting, Section 3.12





3.14 BUILDING MATERIALS AND SYSTEMS

Designs must ensure the design coherence and integrity of the whole, but at the same time encourage a variety of materials and expression which exemplify Puerto Rico in the 21st century, in all its richness. New and innovative materials and building systems are encouraged, as are new interpretations of traditions, which are employed and detailed to articulate a sense of scale and visual interest, especially at the pedestrian level.

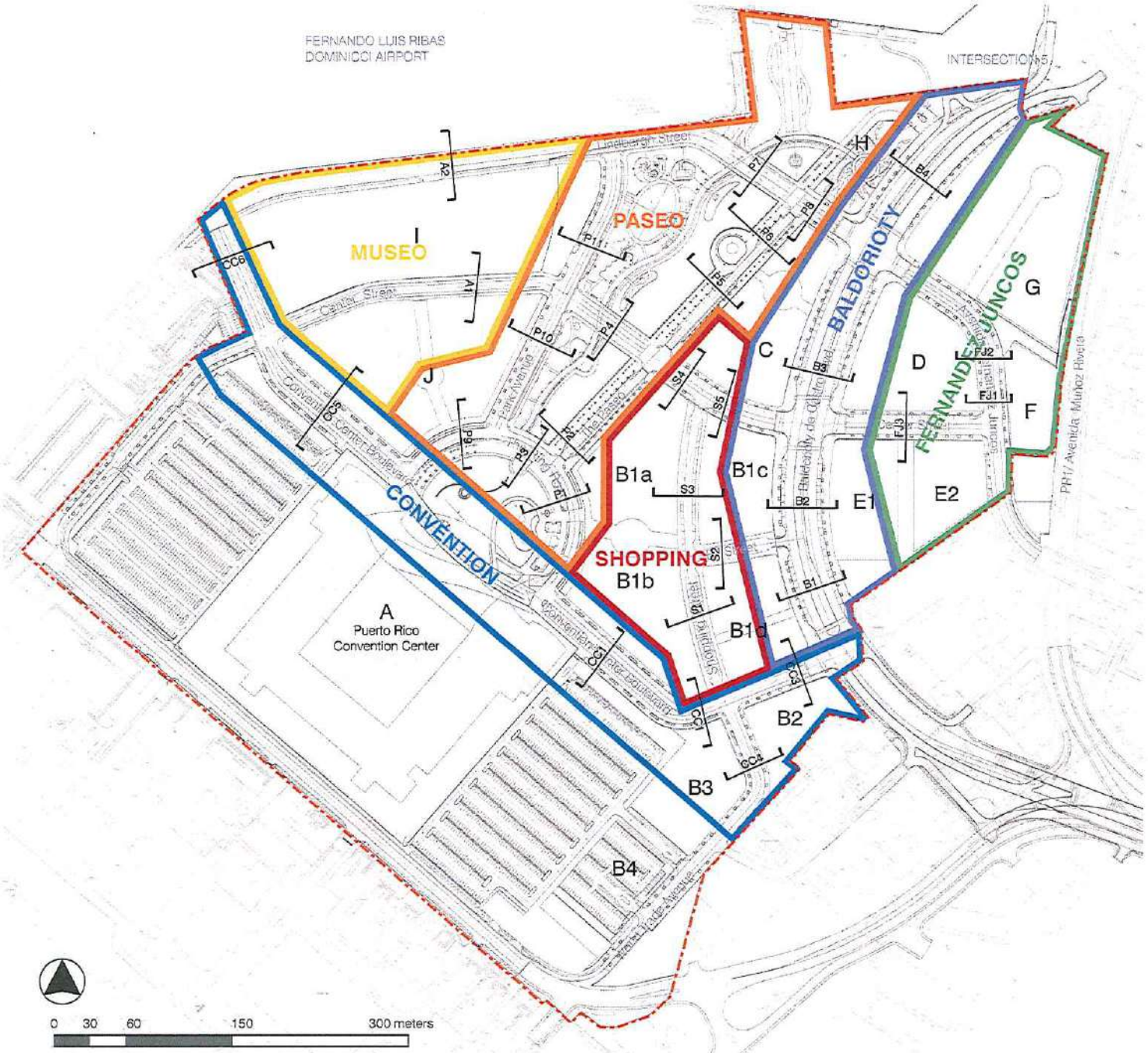
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4.0
URBAN CHARACTER ZONES

4.0
URBAN CHARACTER ZONES

The Puerto Rico Convention District contains five interlinked zones, each with a strong and complementary character. The relationship between these areas provides the underlying structure for the successful mix of uses and animation of the District neighborhood. These character zones are:

4.1 Convention Center
4.2 Paseo
4.3 Shopping Street
4.4 Baldorioty
4.5 Fernandez Juncos
4.6 Museo



LEGEND

- Convention Center
- Paseo
- Shopping
- Baldorioty
- Fernandez Juncos
- Museo

FIG. 4.0.1

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4.0 URBAN CHARACTER ZONES
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4.1 CONVENTION CENTER

With its festive and monumental character, the Convention Center is the major focal point of the District neighborhood, presenting a unique architectural statement. Convention Center Boulevard itself is a quiet, elegant drive with tall palms that culminates at the Crescent Basin and the Convention Center drop-off. The Convention Center urban character zone encompasses the arrival and departure sequences to the Convention Center itself for both pedestrians and vehicles. As such, it has a very ceremonial aspect while introducing the variety of other activities within the District on the way. A strong corporate presence starts the sequence at Baldorioty de Castro Boulevard, followed by a gateway to the Shopping Street, then the Ring Road lined with hotels, restaurants and nightlife, and after the Convention Center, access to the Block J hotel and the Aquarium of Puerto Rico.







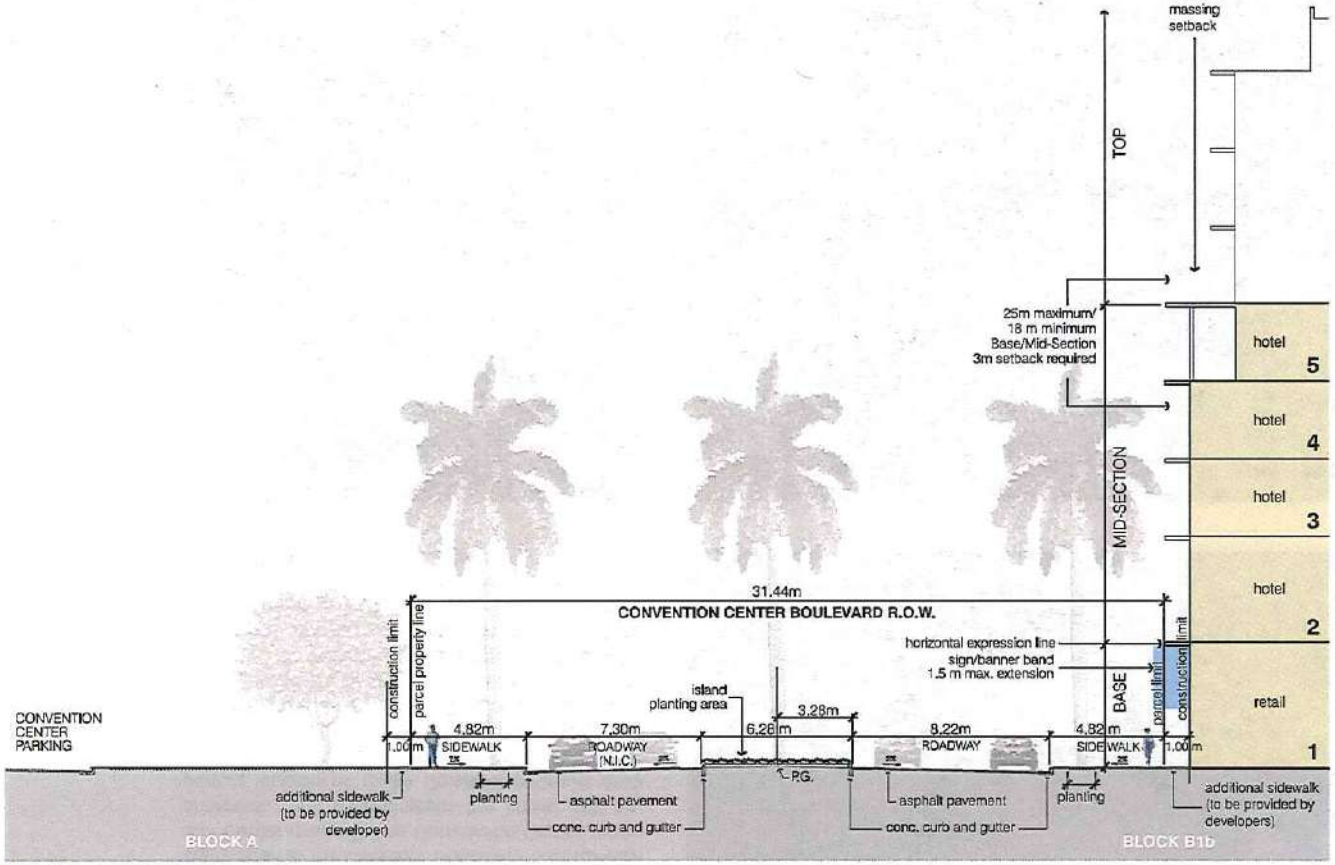


FIG. 4.1.1: SECTION CC1



FIG 4.1.1
SECTION CC1
Convention Center Boulevard

PRCD MASTER PLAN VOLUME 7

CONVENTION CENTER DISTRICT AUTHORITY
Commonwealth of Puerto Rico
COLLIERS INTERNATIONAL

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4.0 URBAN CHARACTER ZONES
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FIG. 4.1.2
SECTION CC2
Convention Center Boulevard

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4.0 URBAN CHARACTER ZONES
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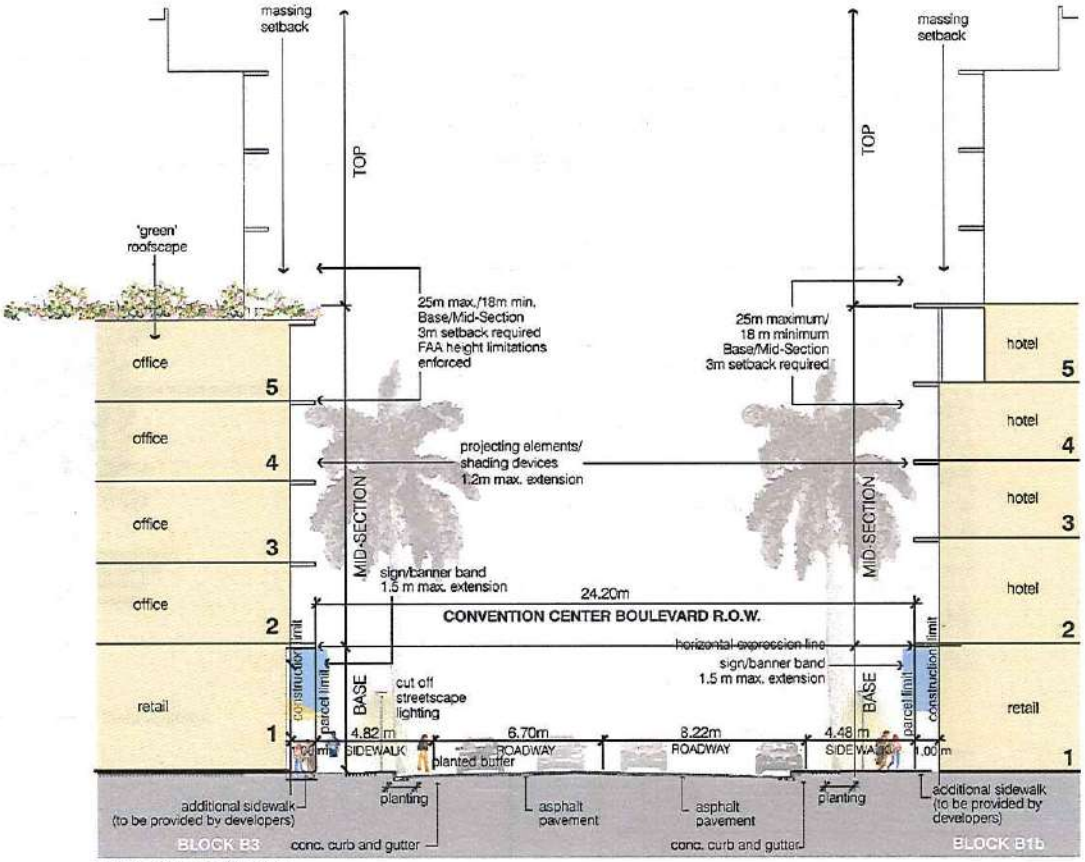


FIG. 4.1.2: SECTION CC2

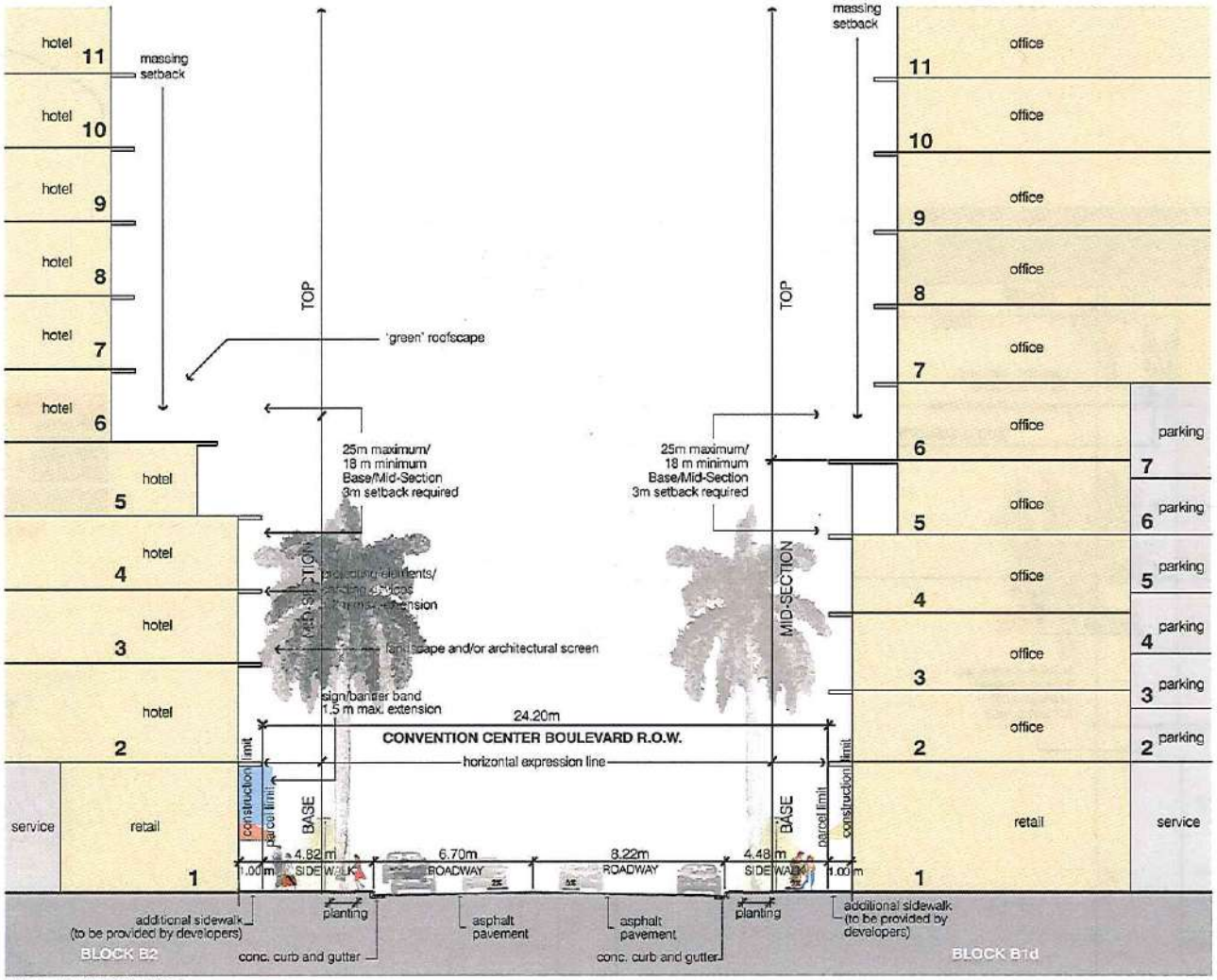


FIG. 4.1.3: SECTION CC3





FIG. 4.1.3
SECTION CC3
Convention Center Boulevard

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

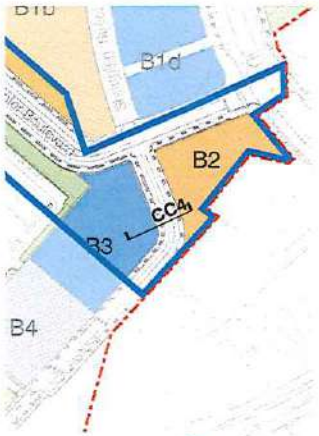




FIG. 4.1.4
SECTION CC4
World Trade Avenue

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

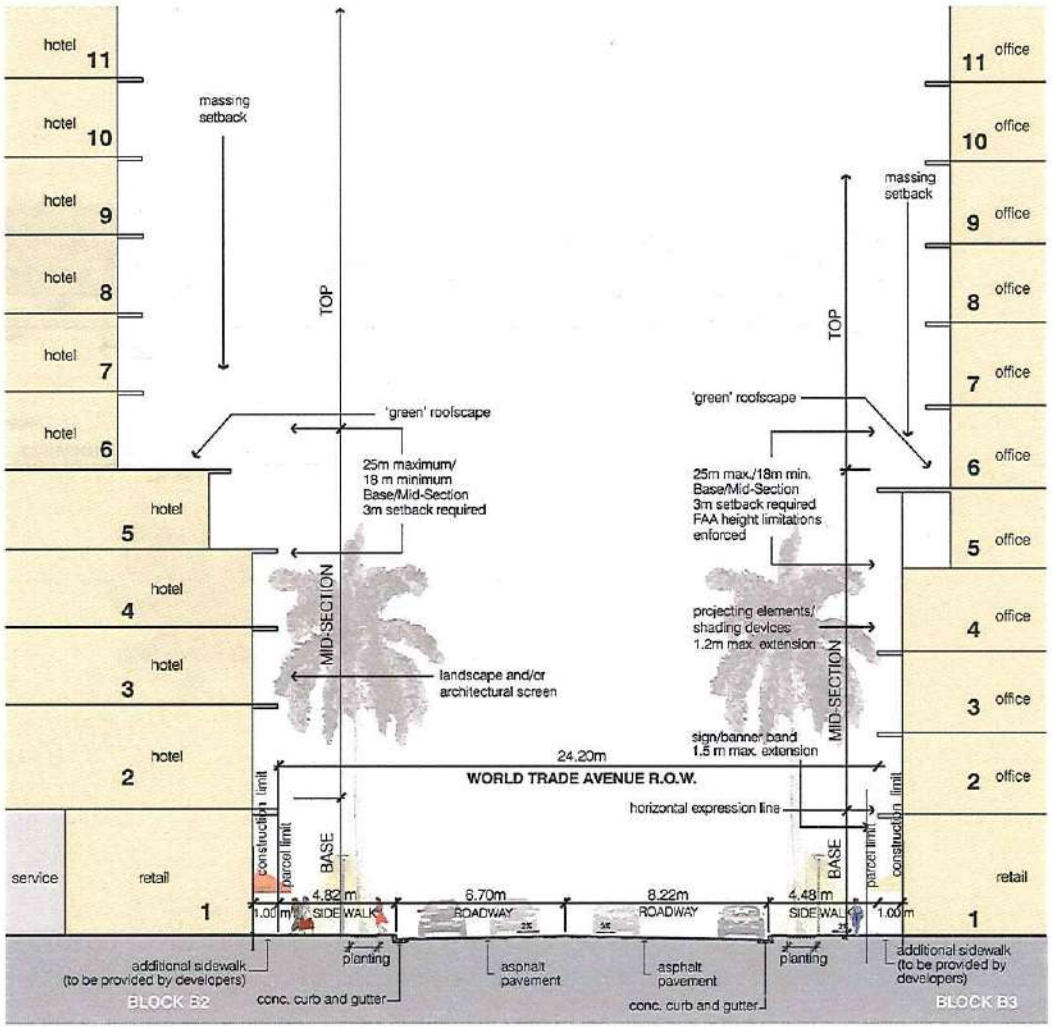


FIG. 4.1.4: SECTION CC4

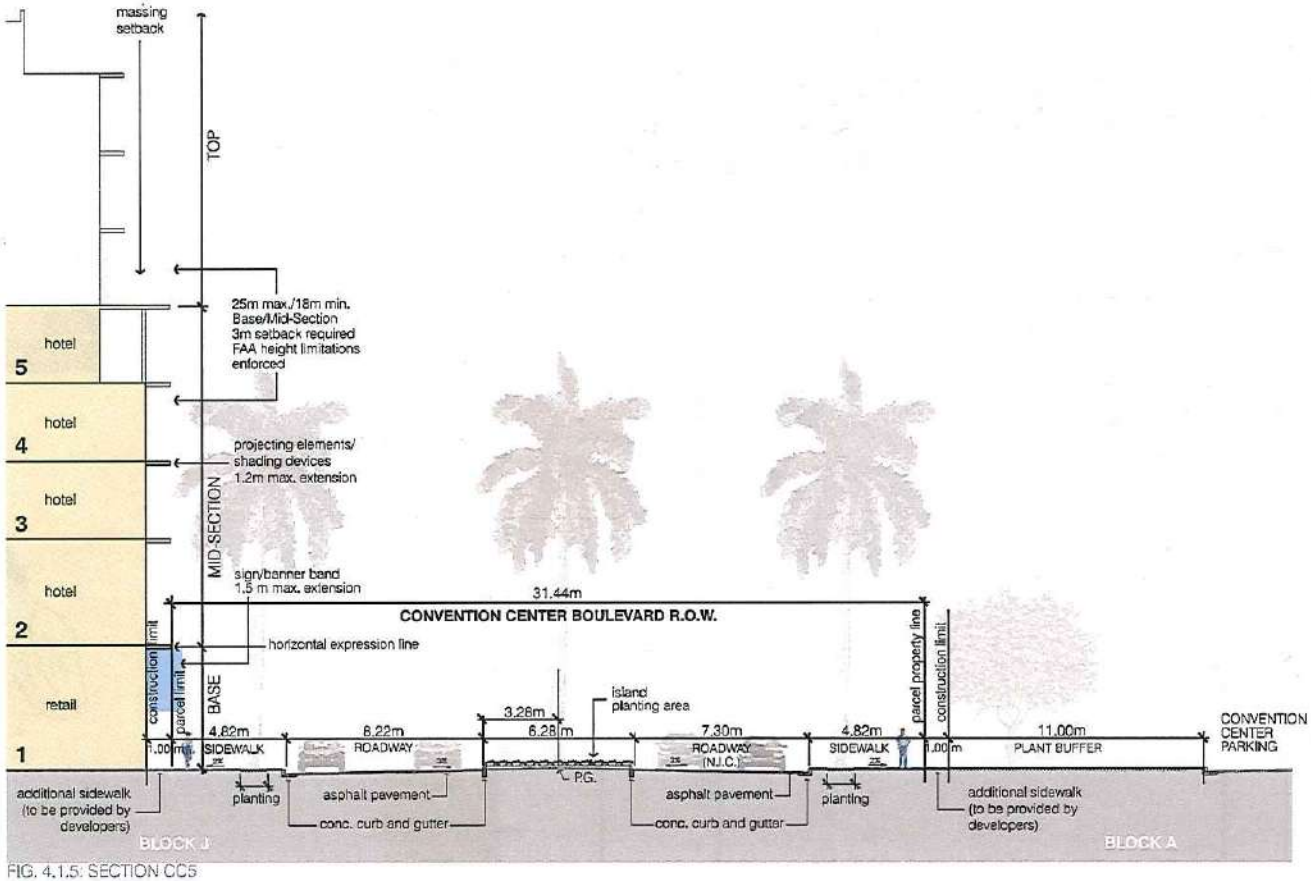


FIG. 4.1.5: SECTION CC5



FIG. 4.1.5
SECTION CC5
Convention Center Boulevard

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

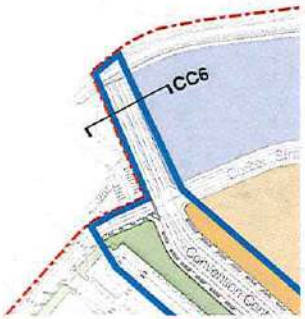




FIG. 4.1.6
SECTION CC6
Convention Center Boulevard

1.0
2.0
3.0
4.0
URBAN CHARACTER ZONES
5.0
6.0
A

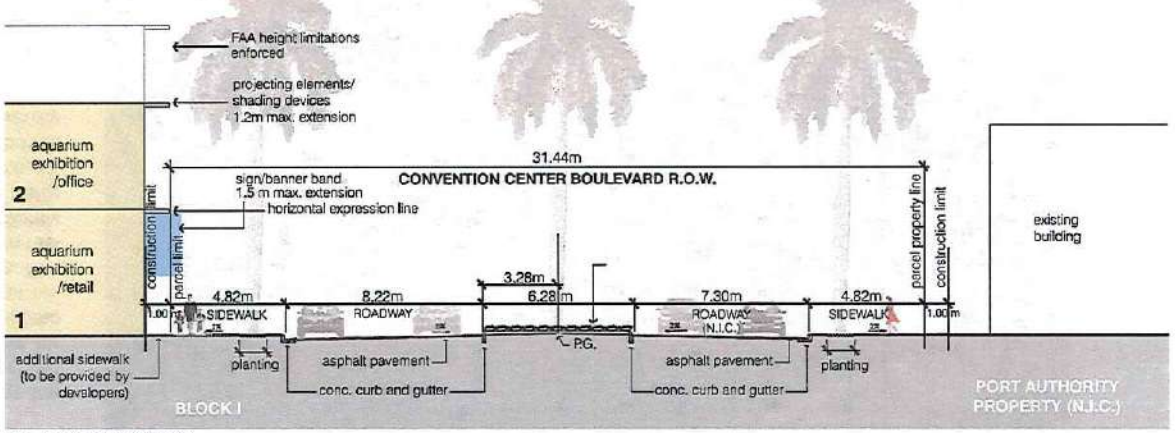


FIG. 4.1.6: SECTION CC6

4.2 PASEO

The Paseo urban character zone brings the worlds of business and recreation together for both tourists and citizens of Puerto Rico. Attractive for strolling and sitting along the edge of the pools, the Paseo itself provides a specialized pedestrian environment on the edge of the B and C blocks. The ground floors of the buildings primarily contain restaurant uses that spill onto terraces raised slightly above the sidewalks. Slow moving vehicular traffic and limited on-street parking contribute to the accessibility of this unique park/street. The Paseo Park is a recreational venue which caters to a diversity of age groups and activities, and celebrates Puerto Rico's natural beauty. It physically and visually connects the District to the San Antonio Canal. The Plaza at Block C ties residences and the adjacent Shopping Street zone into that of the Paseo.



VIEW OF THE PASEO FROM THE CONVENTION CENTER



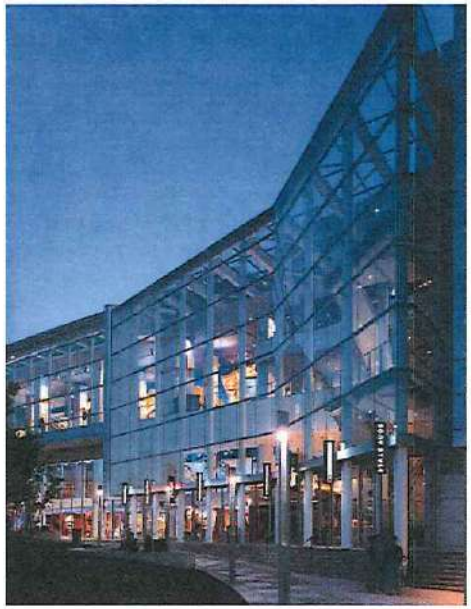






FIG. 4.2.1

4.2.1
ILLUSTRATIVE VIEW
Block C Plaza and Paseo

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A



1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A



MIAMI BEACH, MIAMI



SANTA MONICA, CALIFORNIA











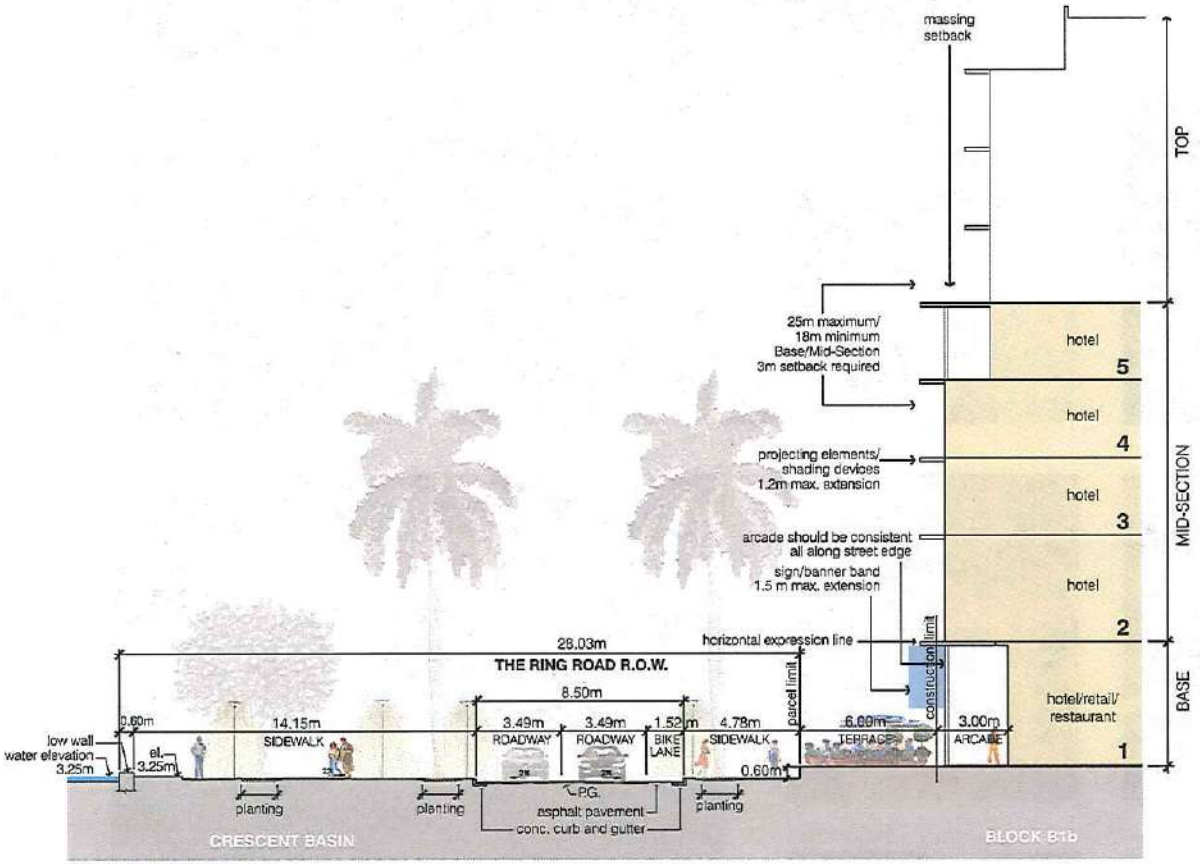


FIG. 4.2.2: SECTION P1



FIG. 4.2.2
SECTION P1
The Ring Road

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A



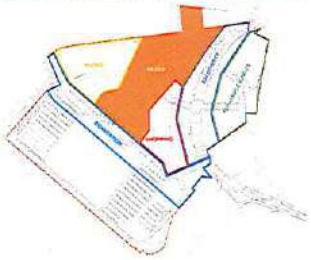


FIG. 4.2.3
SECTION P2
The Paseo

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

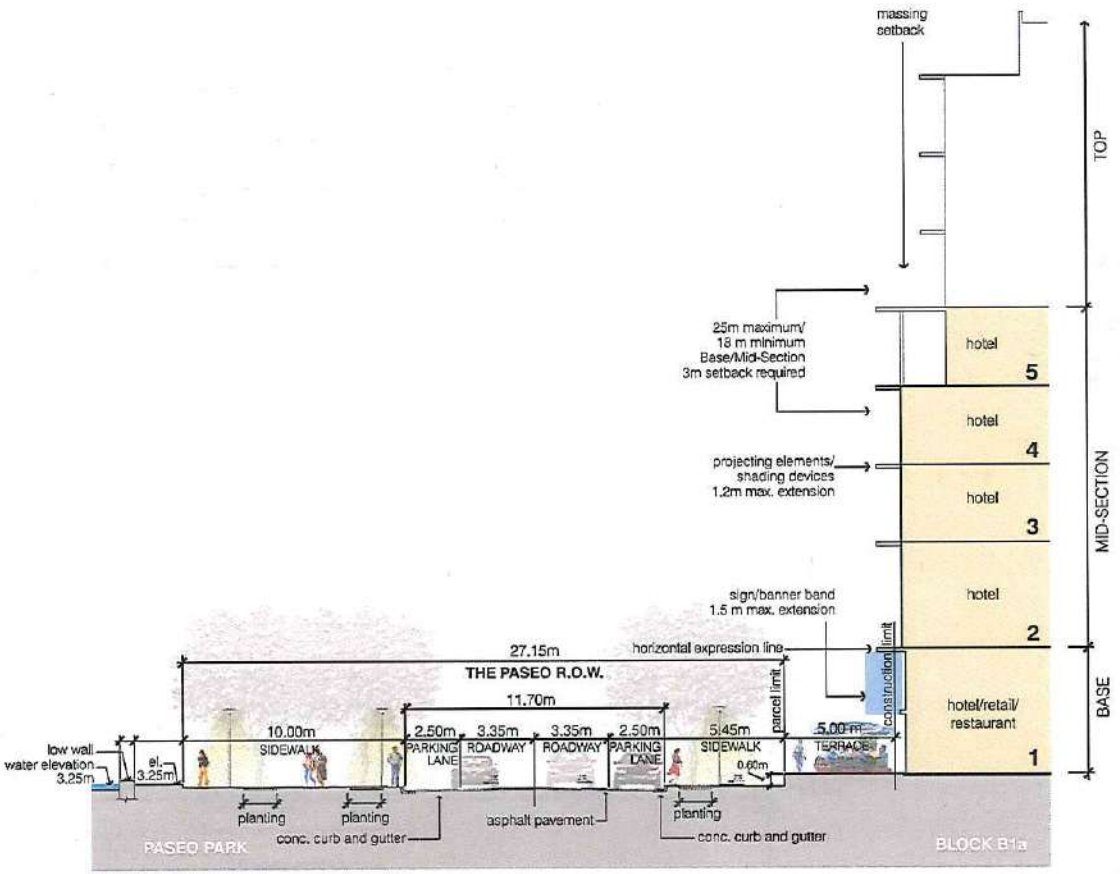


FIG. 4.2.3: SECTION P2

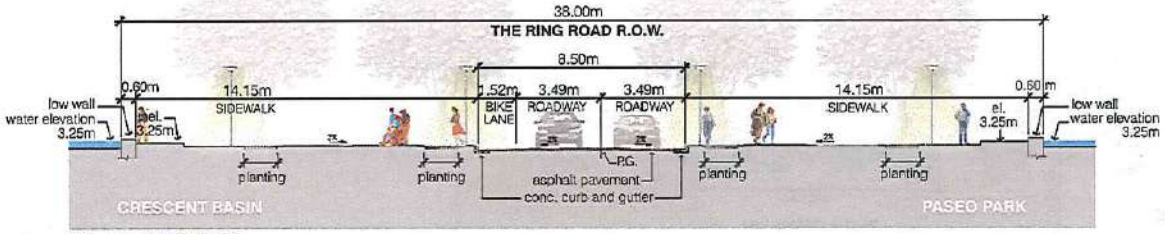


FIG. 4.2.4: SECTION P3

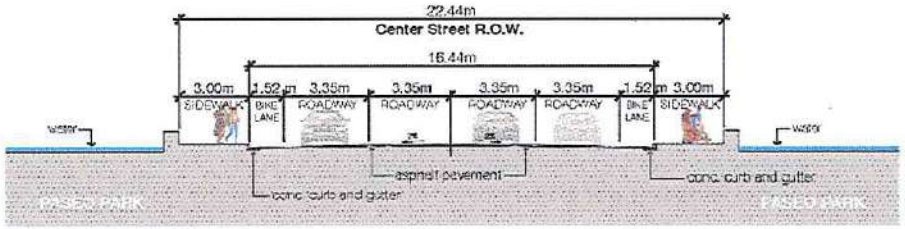
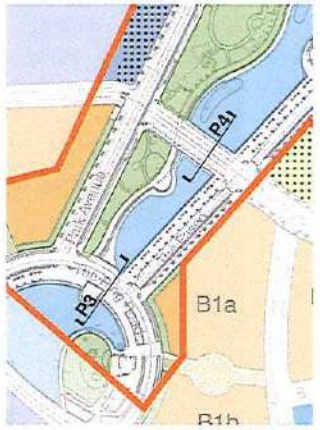
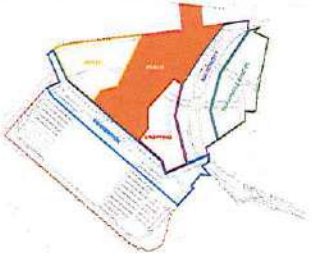
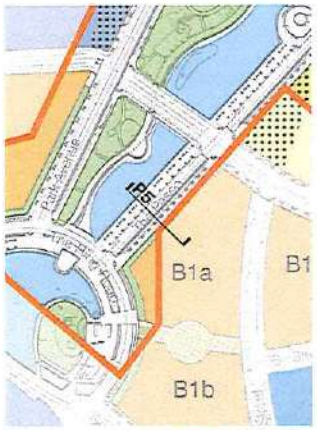


FIG. 4.2.5: SECTION P4





FIGS. 4.2.4/4.2.5
SECTIONS P3/P4
The Ring Road/Center Street



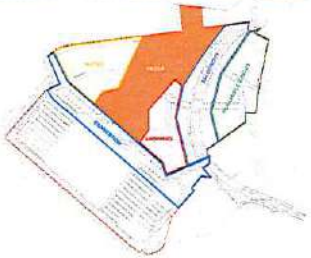


FIG. 4.2.6
SECTION P5
The Paseo

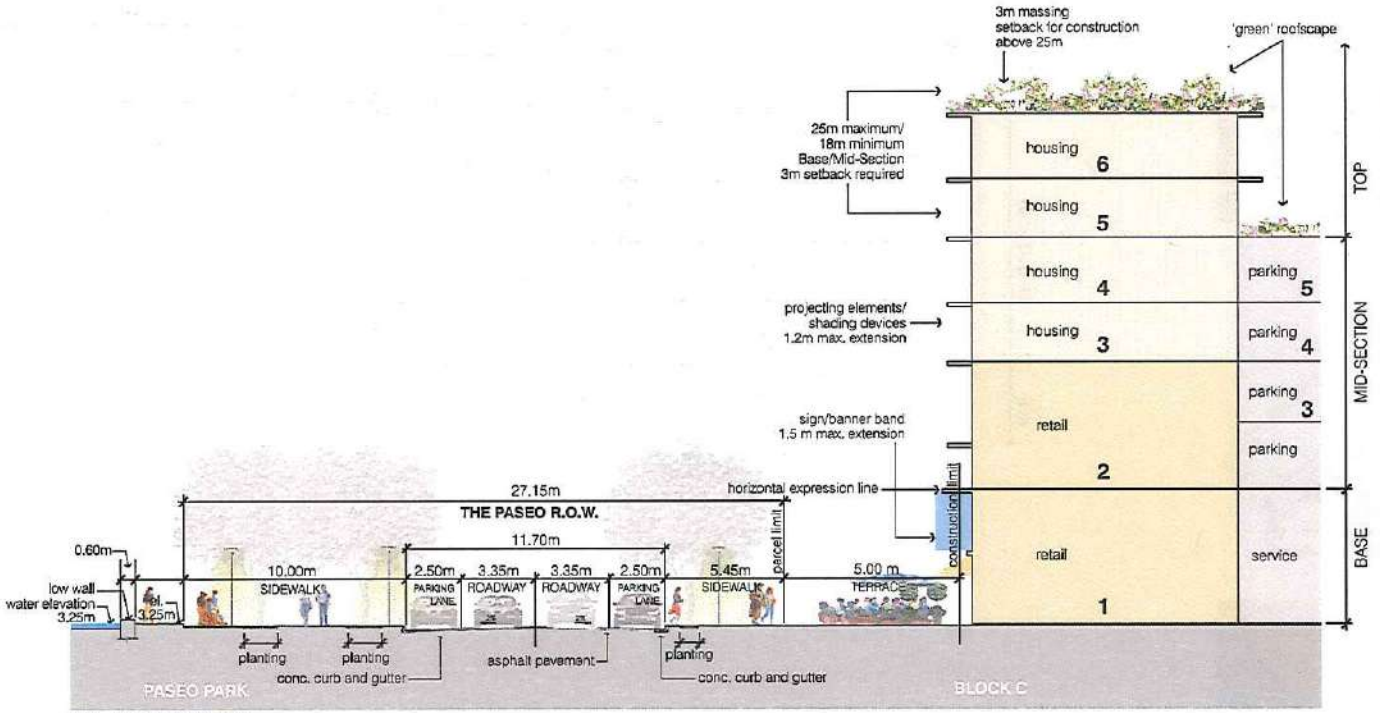


FIG. 4.2.6: SECTION P5

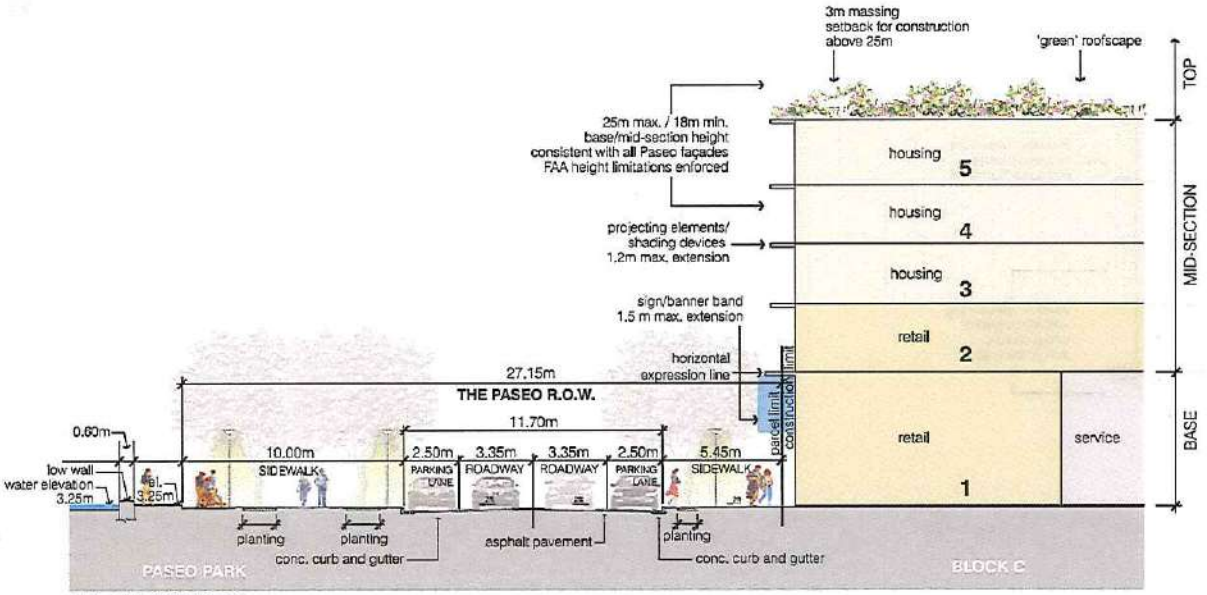


FIG. 4.2.7: SECTION P6



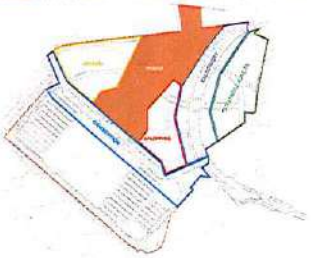


FIG. 4.2.7
SECTIONS P6
The Paseo

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A



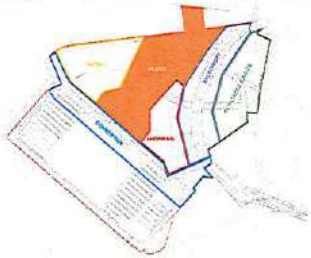


FIG. 4.2.8/4.2.9
SECTIONS P7/P8
Lindbergh Street (Both Figures)

1.0
2.0
3.0
4.0
URBAN CHARACTER ZONES
5.0
6.0
A

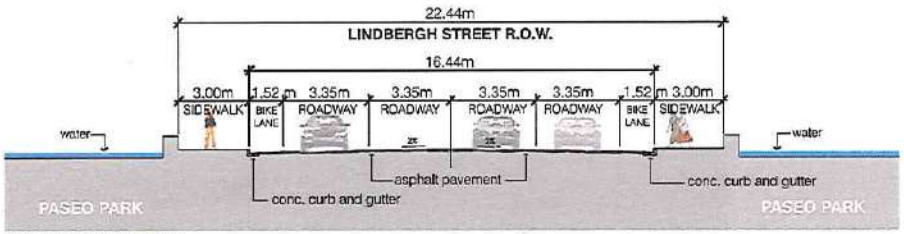


FIG. 4.2.8: SECTION P7

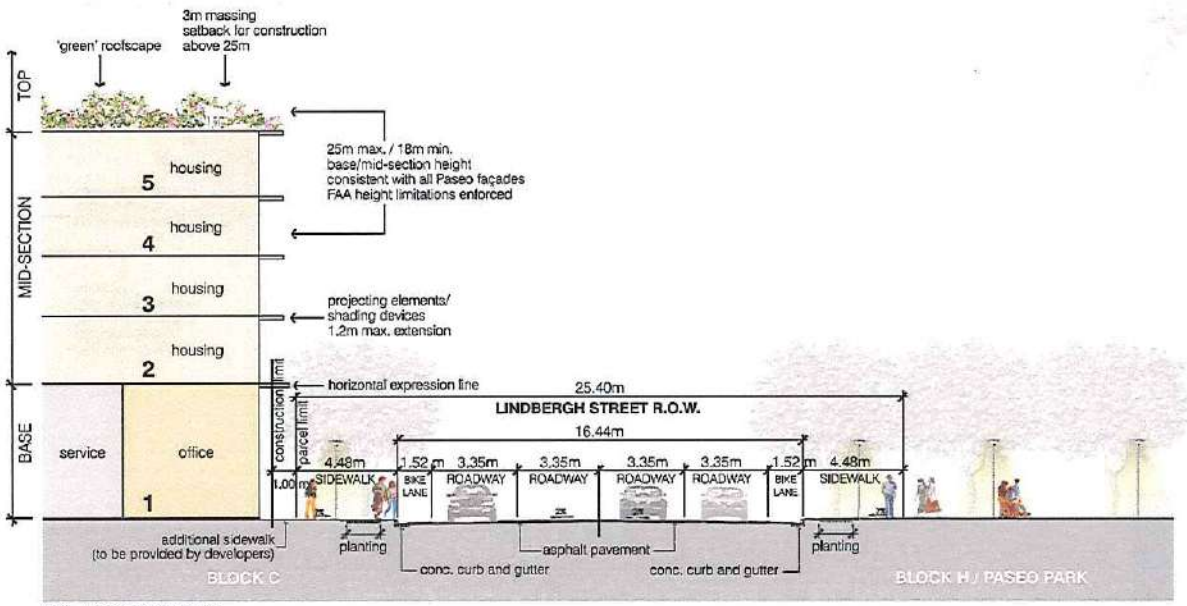


FIG. 4.2.9: SECTION P8

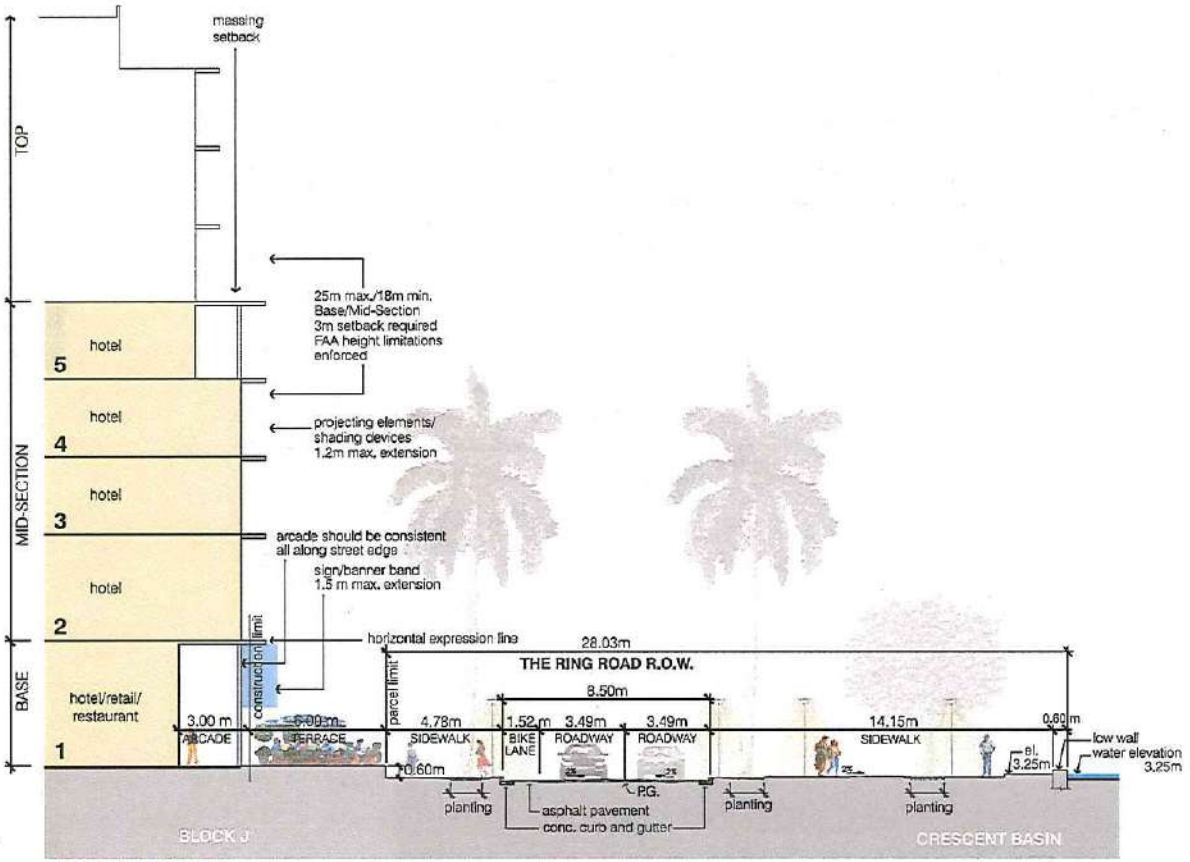


FIG. 4.2.10: SECTION P9



FIG. 4.2.10
SECTION P9
The Ring Road

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A



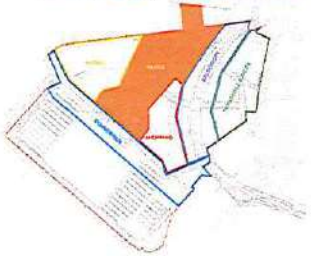


FIG. 4.2.11
SECTION P10
Park Avenue

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

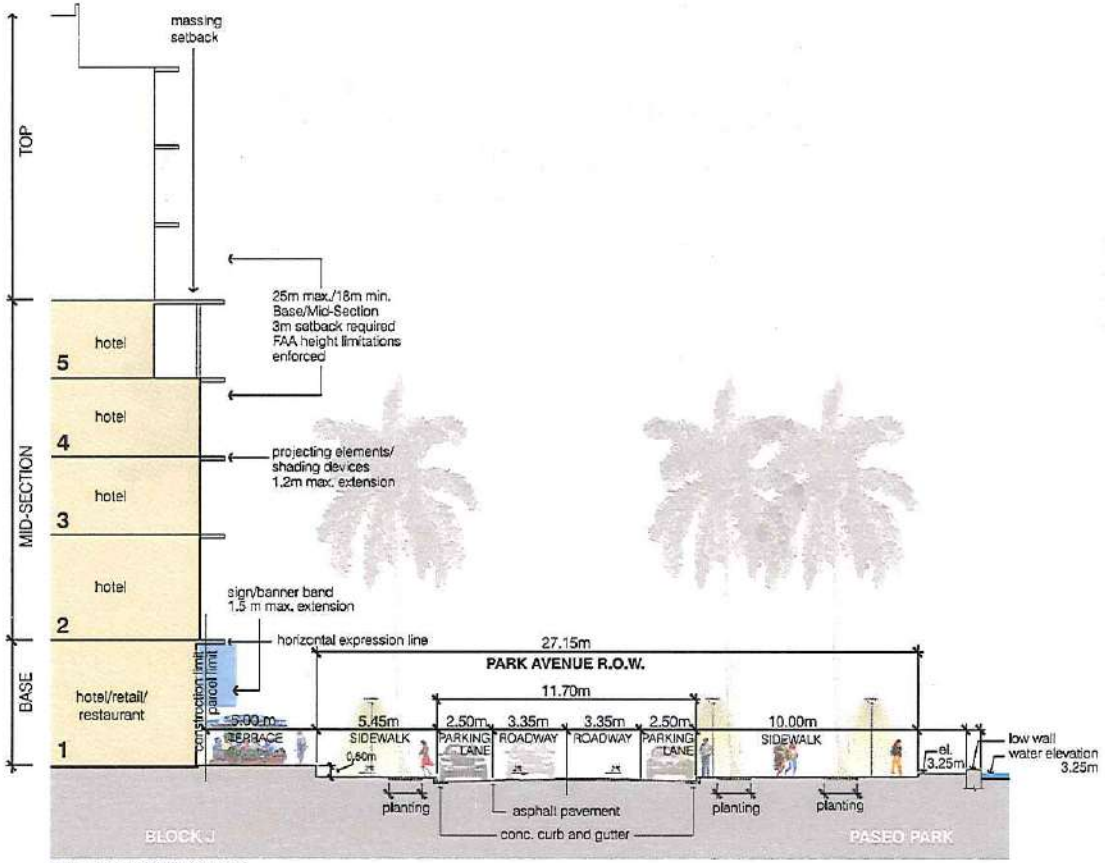


FIG. 4.2.11: SECTION P10

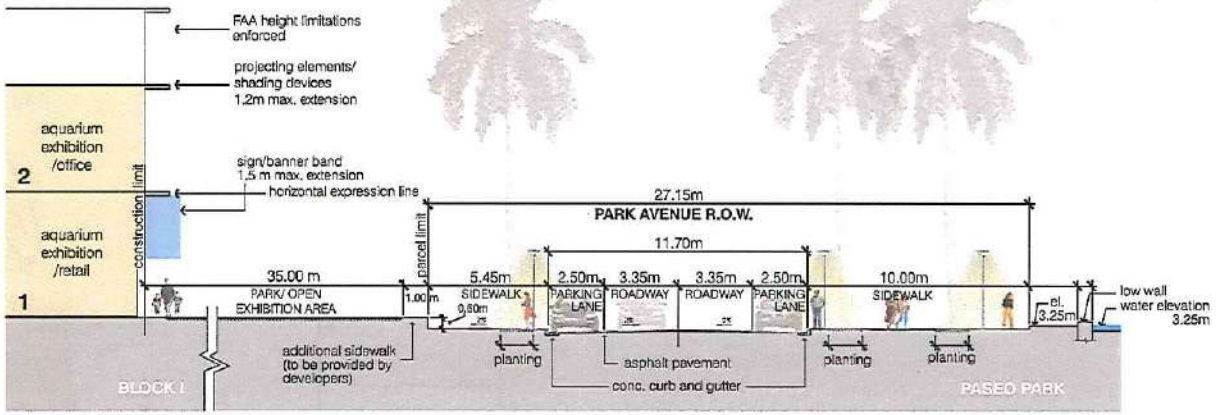


FIG. 4.2.12: SECTION P11



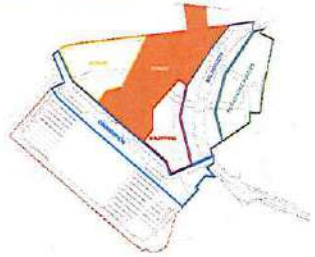


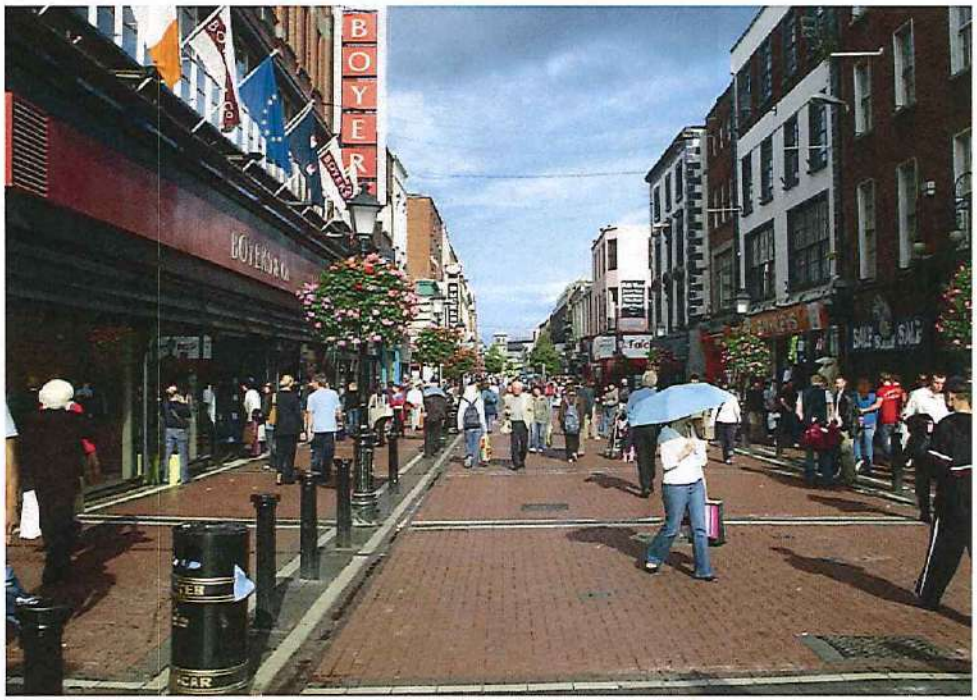
FIG. 4.2.12
SECTION P11
Park Avenue

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

1.0
2.0
3.0
4.0
URBAN CHARACTER ZONES
5.0
6.0
A

4.3 SHOPPING STREET

This character zone is the commercial core of the District. Centered on the internal north-south pedestrian-scaled street within the B blocks, it is intended for specialty commercial establishments anchored at two ends by larger stores forming gateways to the zone. With hotel, office and residential uses above the street level, this space presents a true mixed-use experience. The section of the Shopping Street is narrower and its scale is more intimate than other streetscapes in the District, emphasizing synergy between its sides, a shaded streetscape and intermingled pedestrian and vehicular use. The Shopping Street links a number of destinations and uses from the parking structure on B4, hotel on B3, and a multi-screen cinema complex in B1a or B1b to the triangular plaza on C and restaurants along the Paseo.

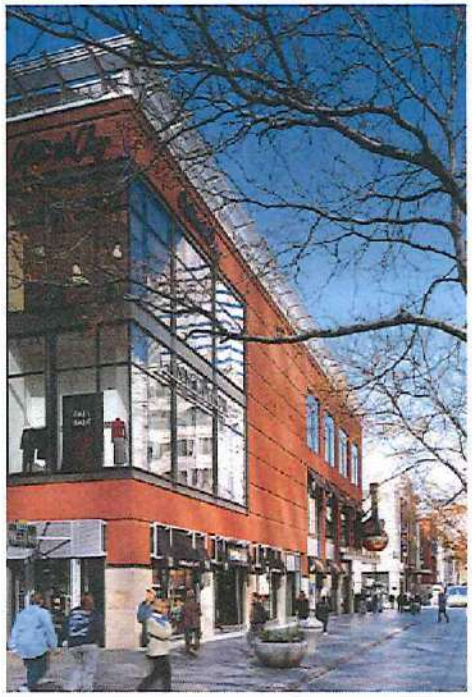


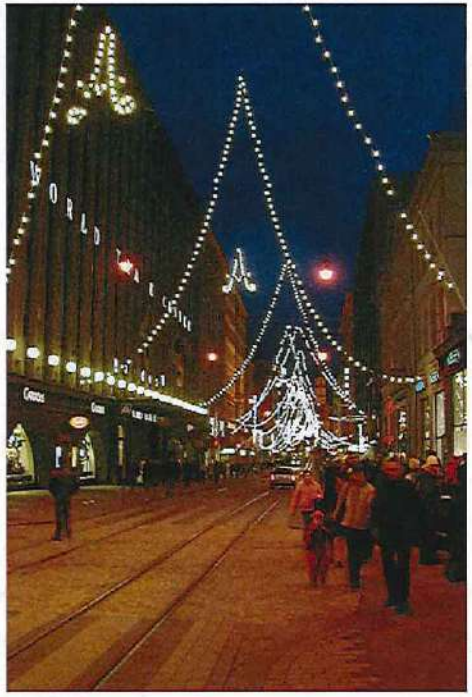
TALBOT STREET, DUBLIN (IRELAND)


BOGOVI STREET, ZAGREB (CROATIA)


SAVILE ROW, LONDON (UNITED KINGDOM)







ARCADE IN ZWICKAU (GERMANY)



ARCADE IN ZWICKAU (GERMANY)



1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A





FIG. 4.3.1
SECTION S1
The Shopping Street

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

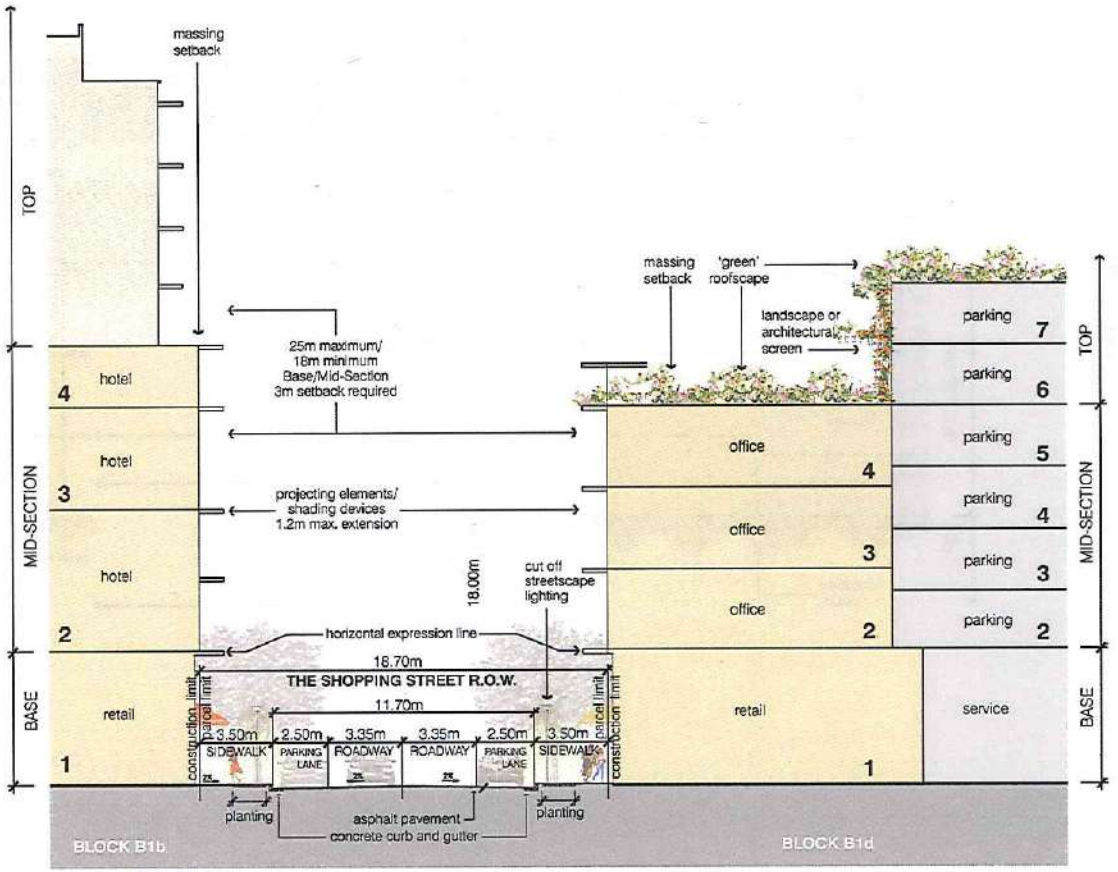


FIG. 4.3.1: SECTION S1

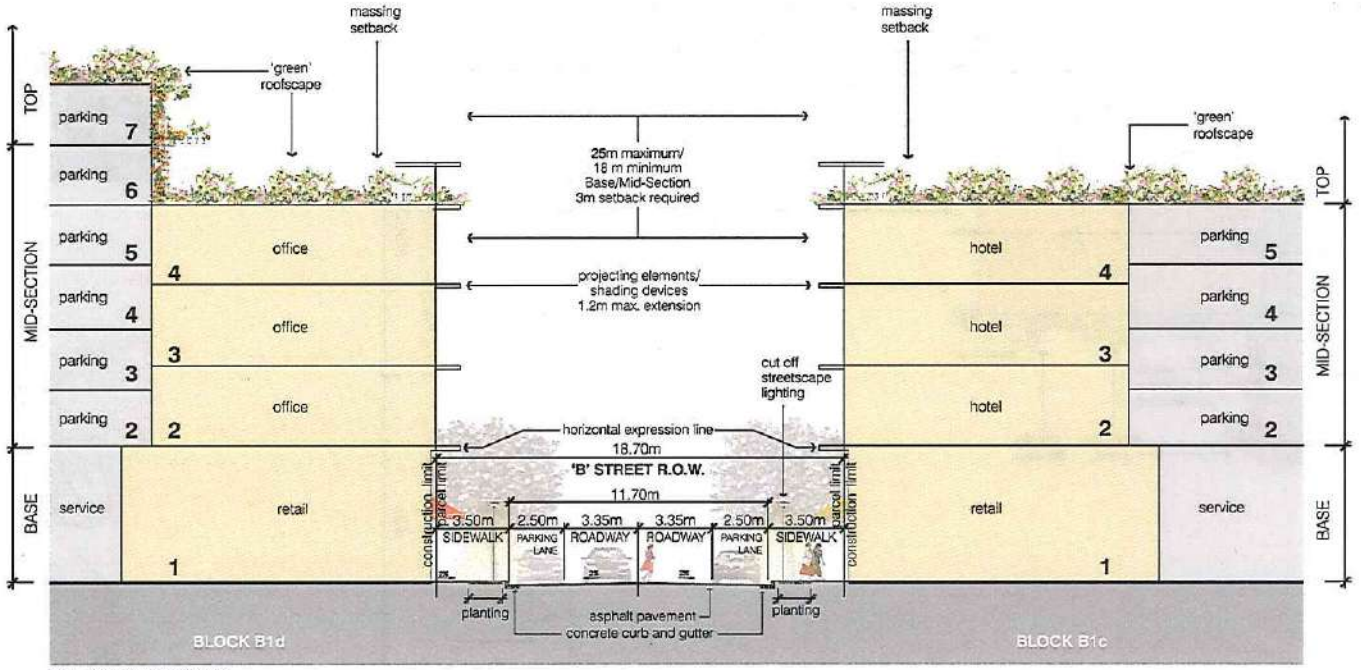
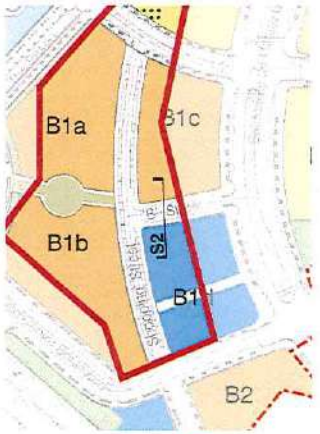


FIG. 4.3.2: SECTION S2



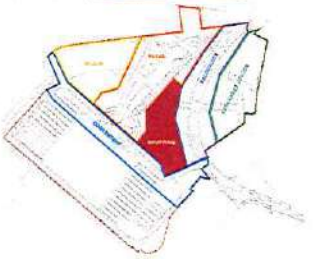
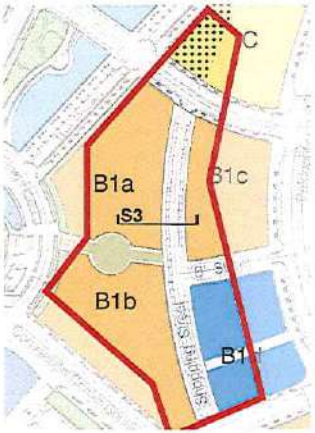


FIG. 4.3.2
SECTION S2
'B' Street

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A



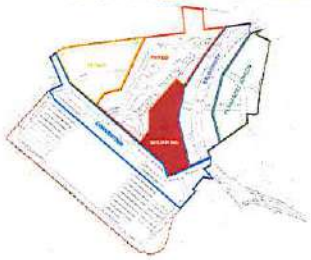


FIG. 4.3.3
SECTION S3
The Shopping Street

1.0
2.0
3.0
4.0
URBAN CHARACTER ZONES
5.0
6.0
A

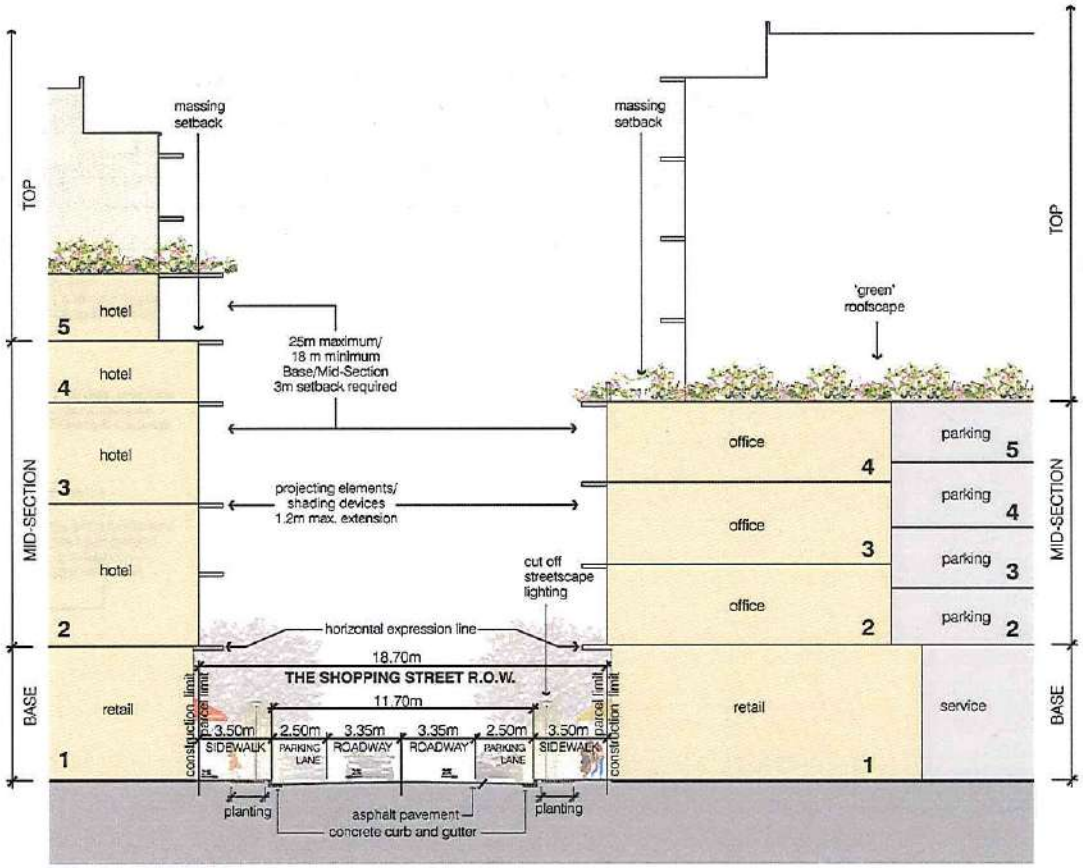


FIG. 4.3.3: SECTION S3

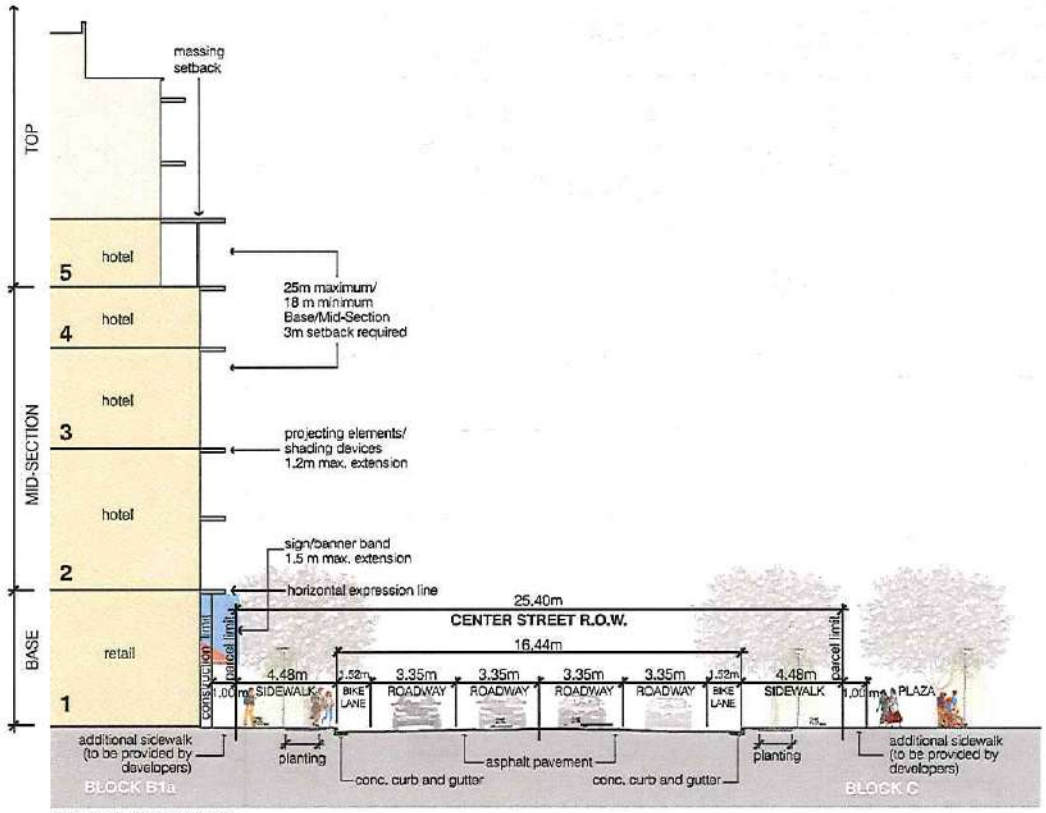
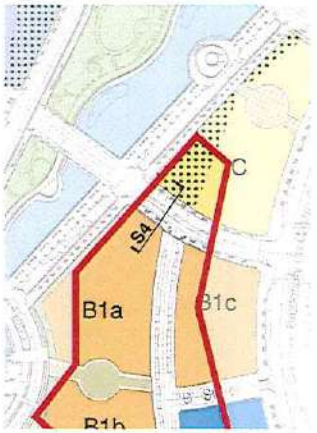


FIG. 4.3.4: SECTION S4



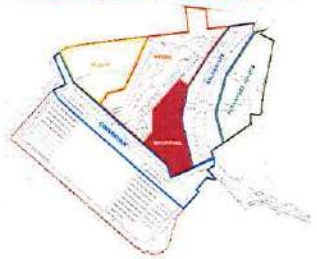


FIG. 4.3.4
SECTION S4
Center Street



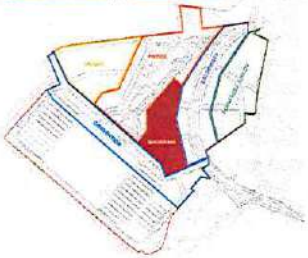


FIG. 4.3.5
SECTION S5
Center Street

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

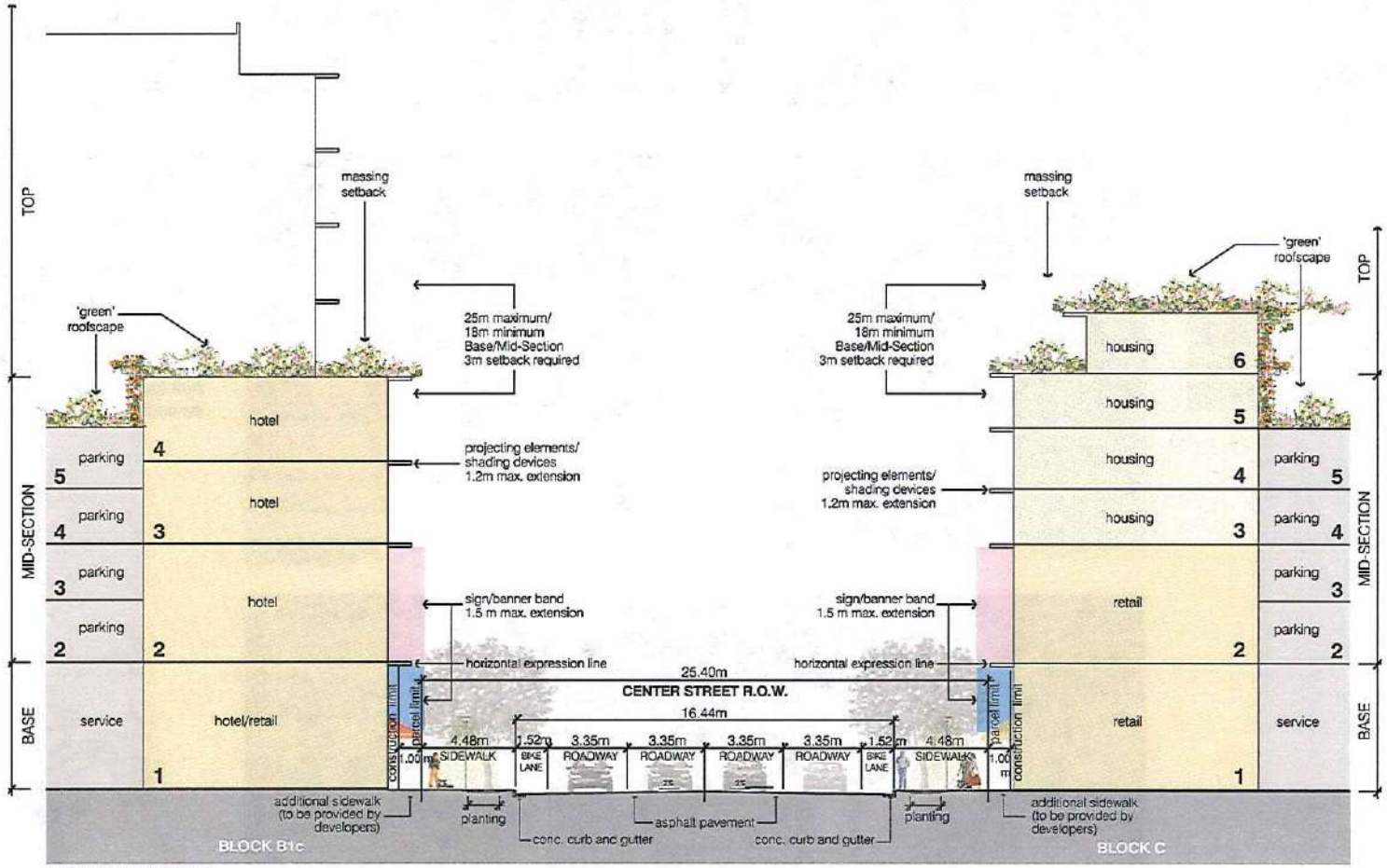


FIG. 4.3.5: SECTION S5

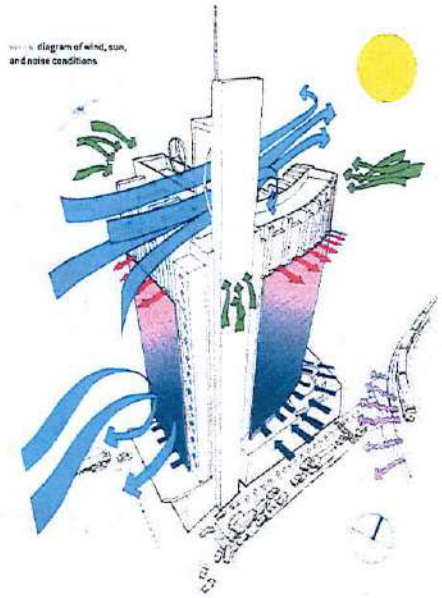


diagram of wind, sun, and noise conditions













4.4 BALDORIOTY

Baldorioty de Castro Boulevard functions as a grand urban boulevard traversing the District and creating a strong urban identity while connecting the District to the region. Facing east, the Boulevard is the outer facade of the District, with a mix of headquarters and professional offices, residences, hotel and commercial in a mix of high and low rise buildings. Facing west, amenity commercial lines the sidewalks, mixed with housing that continues to the adjacent Fernandez Juncos zone.

Traffic calming measures such as pedestrian bump outs, on-street parking, modifications to tree planting and street lighting and bicycle lanes are intended to create a more pedestrian-oriented character to the boulevard. Opportunities to open up multiple views to and from the Convention Center Ring Road and the Paseo are created at intersections. The visual and pedestrian connection between the Paseo and Baldorioty Boulevard is enhanced by the plaza at Block D and by a pedestrian passage on Block C aligned with an existing mature tree in the Paseo which will be preserved. A new internal east-west street within the B block from Baldorioty de Castro Boulevard to the Convention Center Ring Road provides another important cross connection.

4.4.1
ILLUSTRATIVE VIEW
Baldorioty de Castro Boulevard

1.0
2.0
3.0
4.0
URBAN CHARACTER ZONES
5.0
6.0
A



FIG. 4.4.1



1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

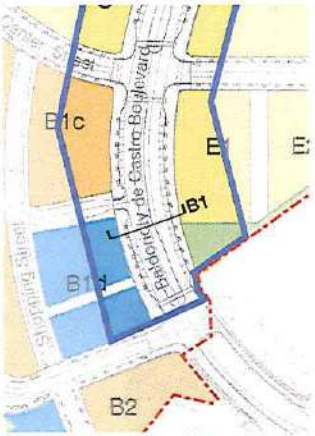




FIG. 4.4.2
SECTION B1
Baldorioty de Castro Boulevard

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

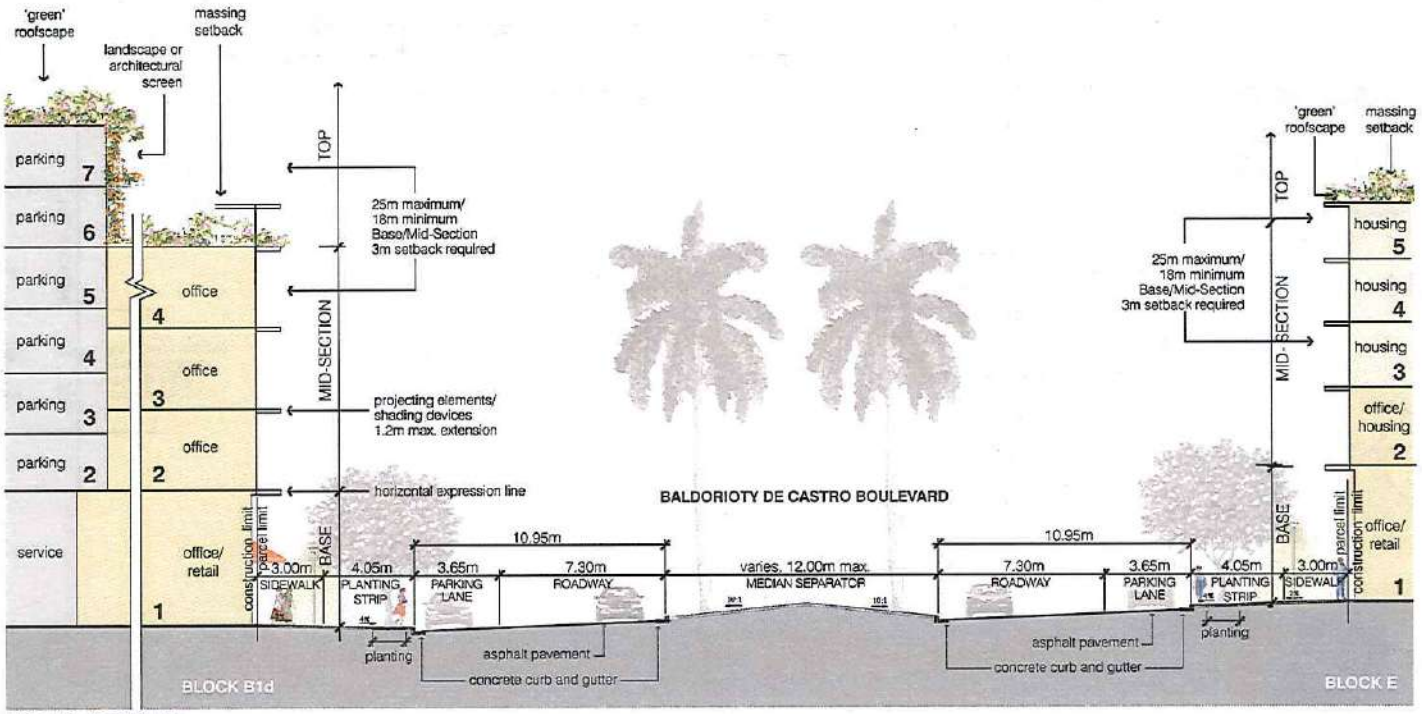


FIG. 4.4.2: SECTION B1

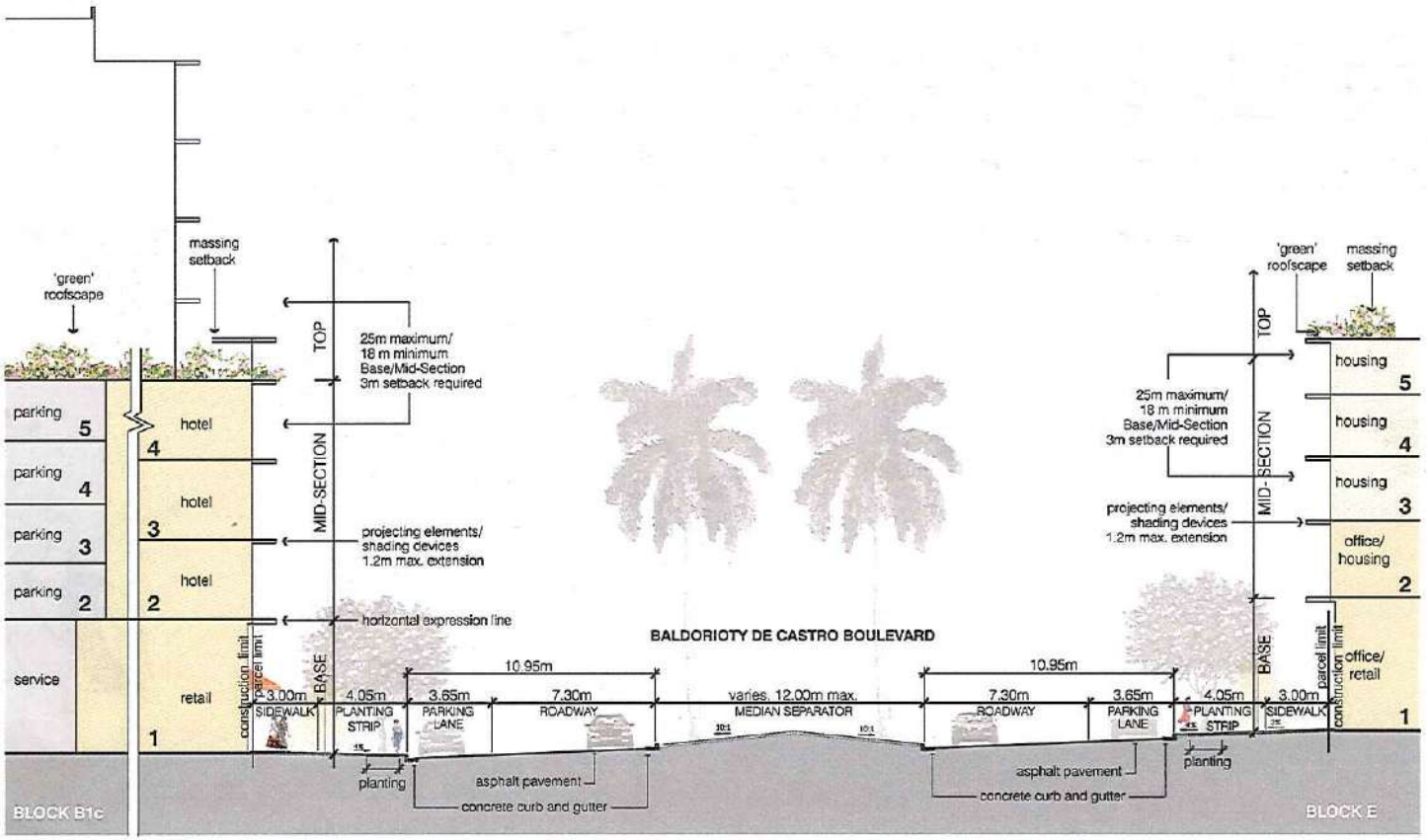


FIG. 4.4.3: SECTION B2

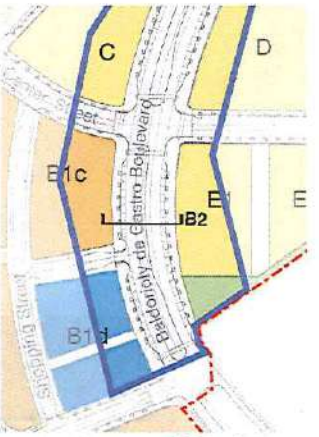
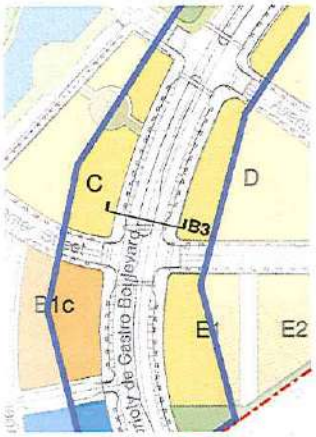


FIG. 4.4.3
SECTION B2
Baldorioty de Castro Boulevard

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A



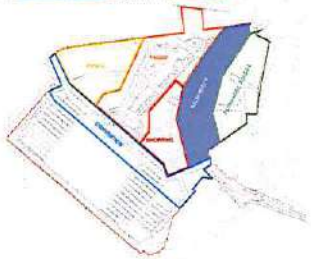


FIG. 4.4.4
SECTION B3
Baldorioty de Castro Boulevard

1.0
2.0
3.0
4.0
URBAN CHARACTER ZONES
5.0
6.0
A

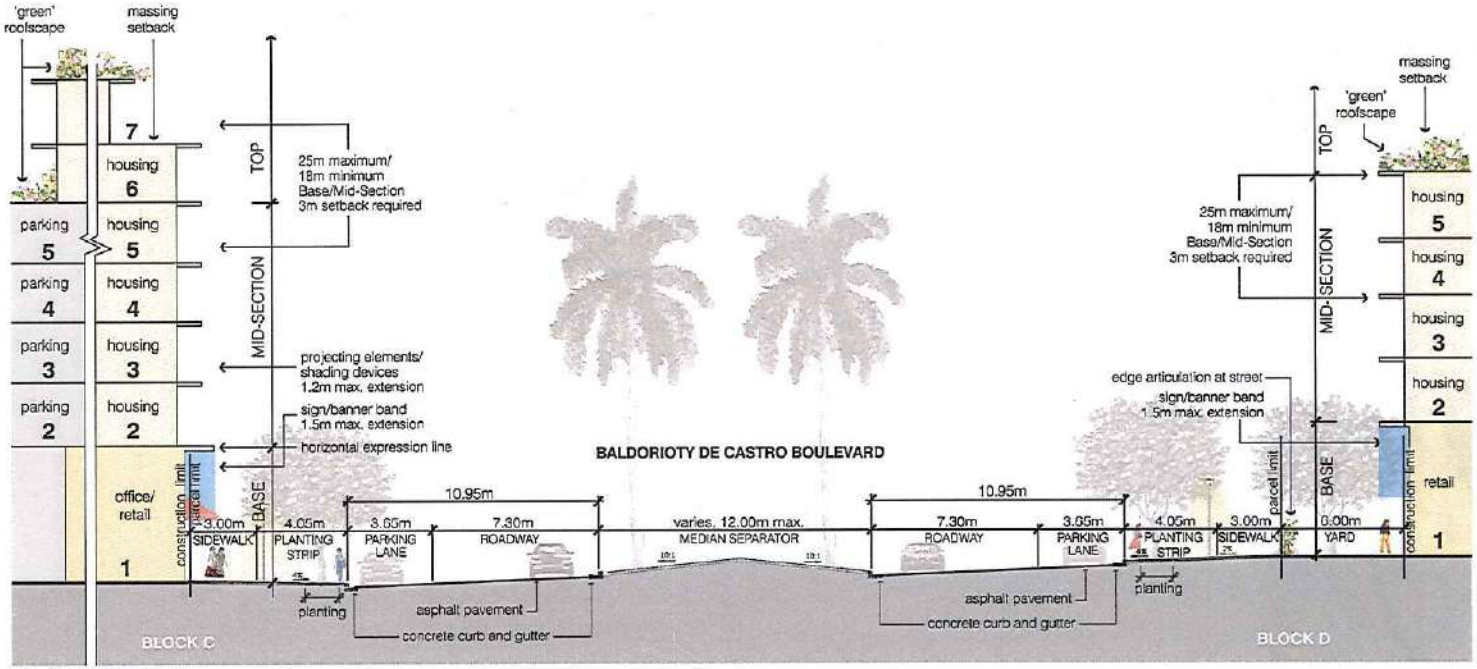


FIG. 4.4.4: SECTION B3

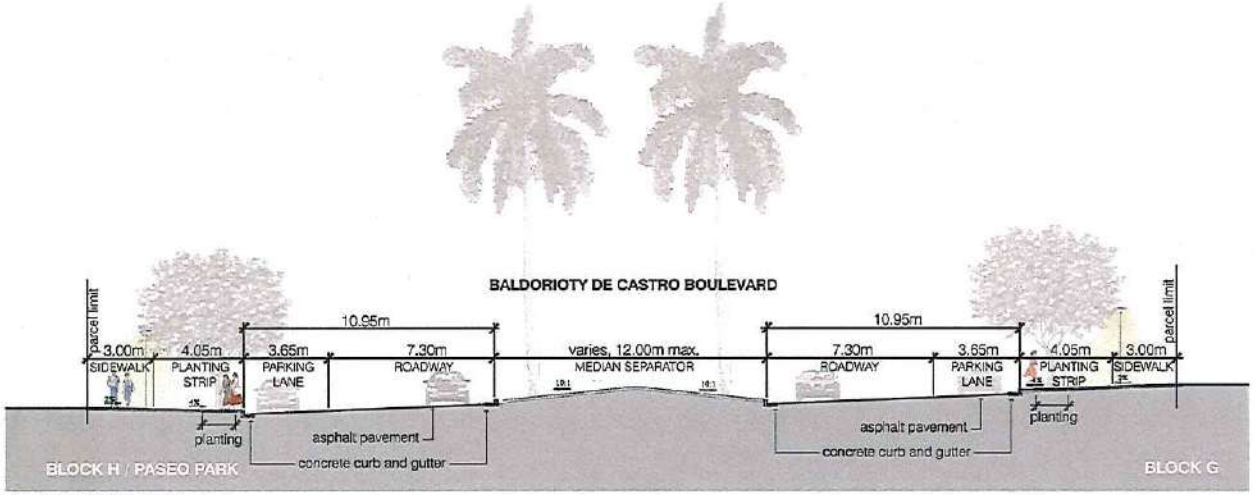


FIG. 4.4.5: SECTION B4

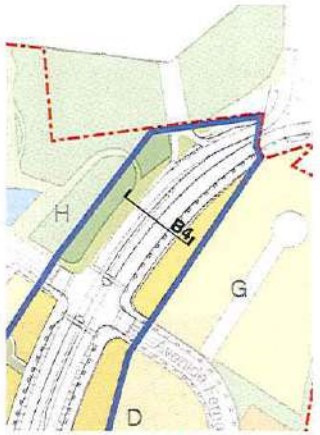
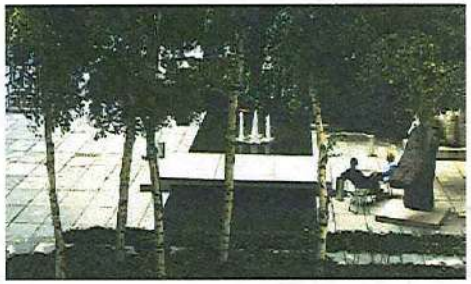
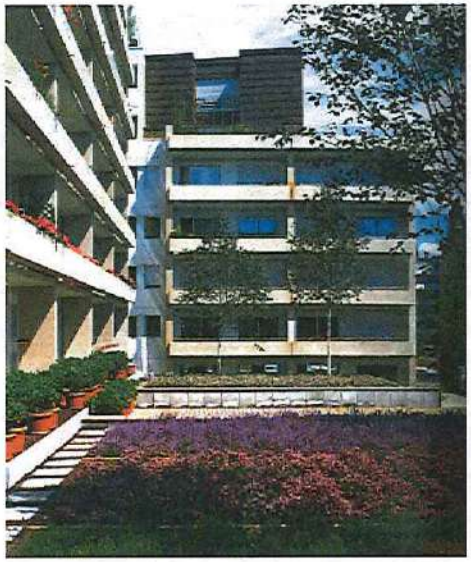


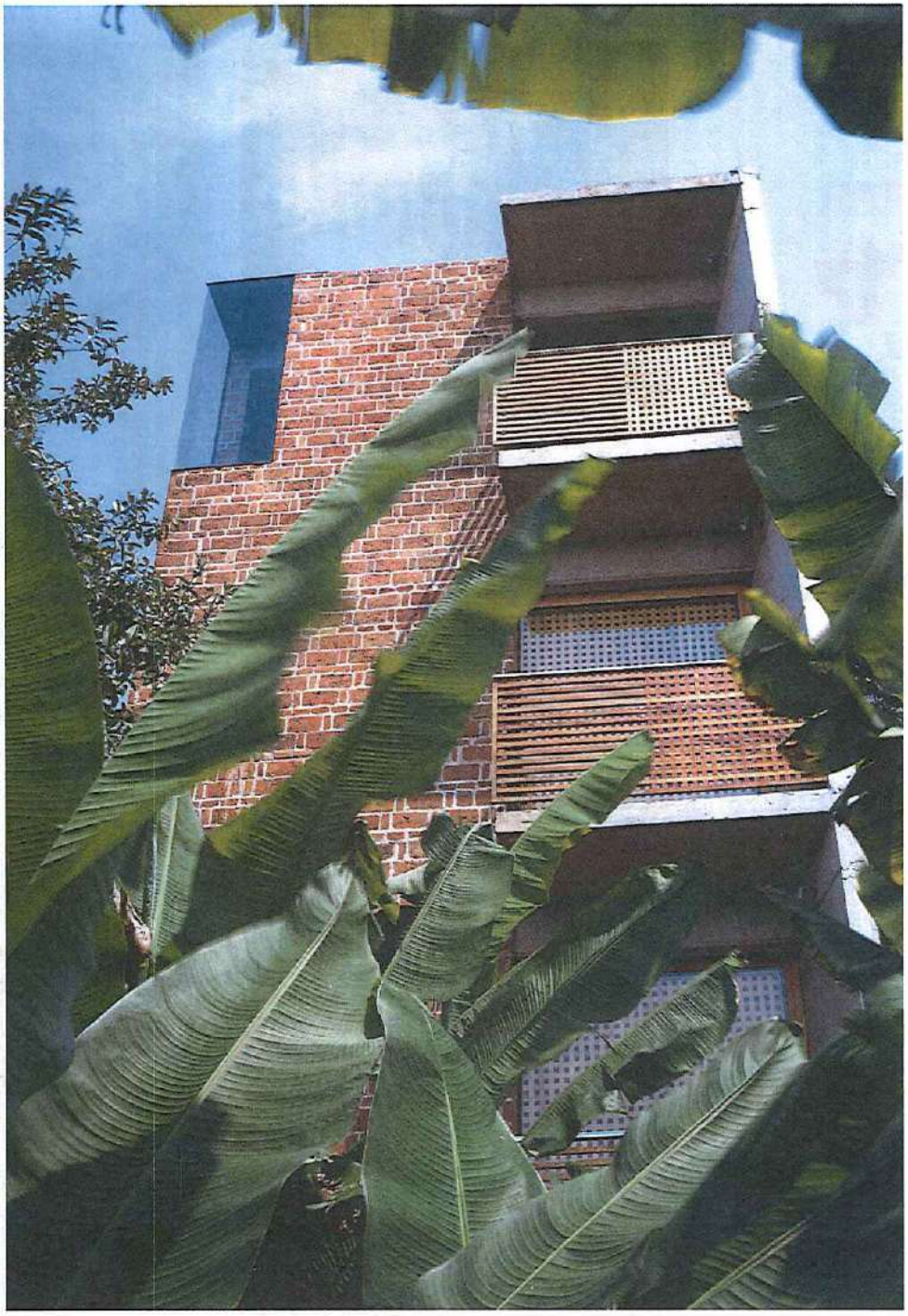
FIG. 4.4.5
SECTION B4
Baldorioty de Castro Boulevard

4.5 FERNANDEZ JUNCOS

Centered on Avenida Fernandez Juncos, this urban zone is the transition to the Miramar residential neighborhood and holds the largest expected concentration of housing in the District. Its scale is residential, with parks, professional offices and convenience commercial interspersed between or at the edge of housing developments. Housing is envisioned in a variety of forms, but all share the notion of a quiet, peaceful core to the urban blocks as a private refuge for this neighborhood. The streetscape is shaded and pleasant for walking, with landscaped front yards to buffer the living space from busy streets. As in the rest of the District, parking and service are hidden within the blocks.

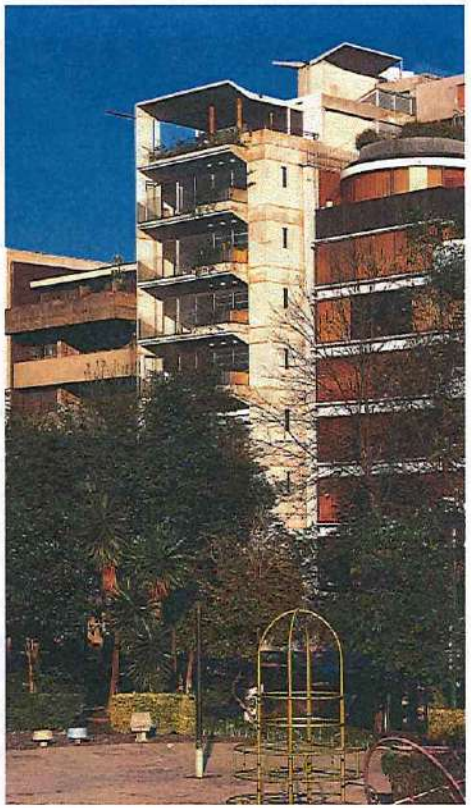


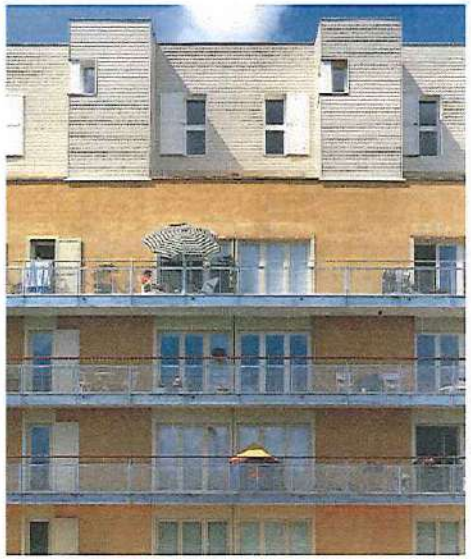


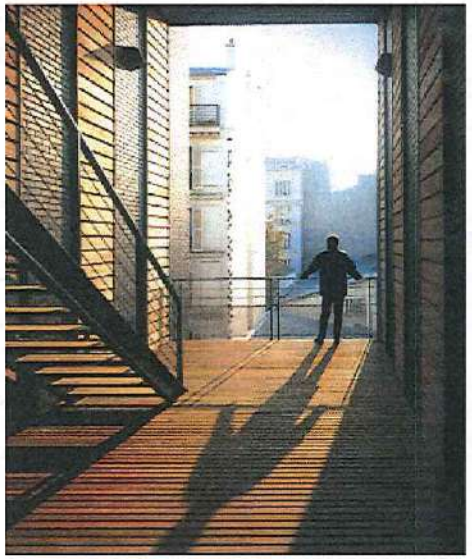


1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A





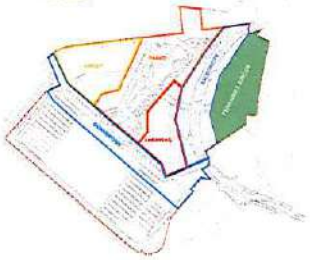






1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A





FIGS. 4.5.1/4.5.2
SECTIONS FJ1/FJ2
Avenida Fernadez Juncos (Both Sections)

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

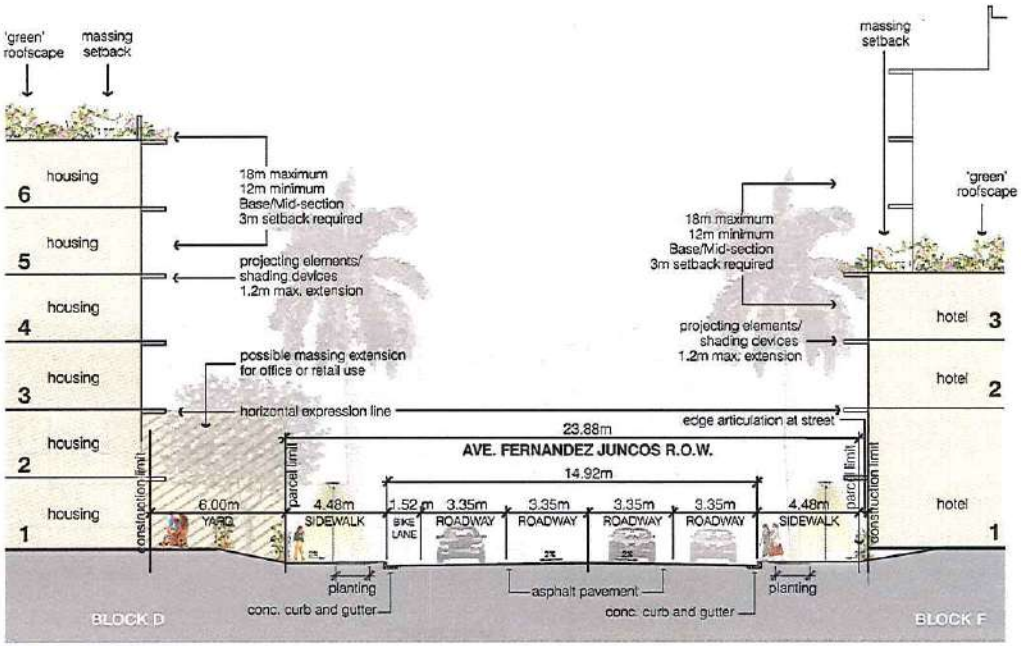


FIG. 4.5.1: SECTION FJ1

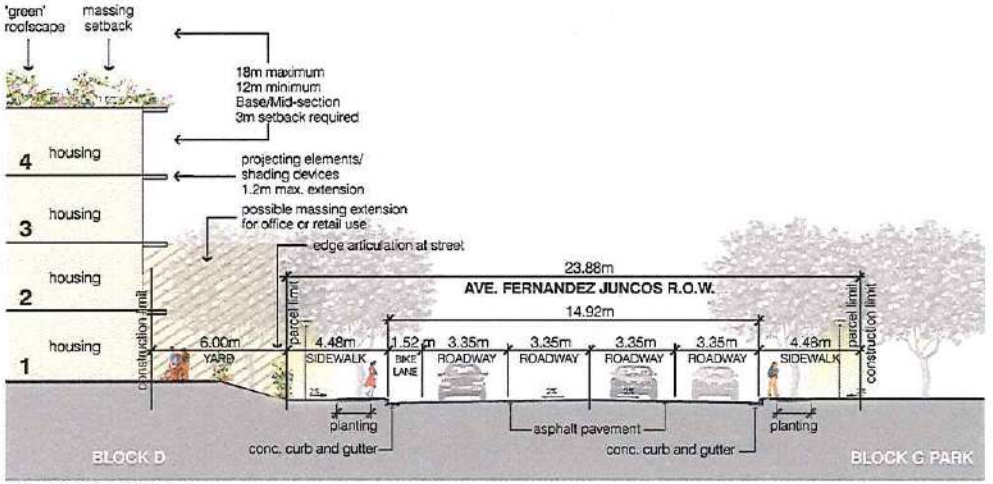


FIG. 4.5.2: SECTION FJ2

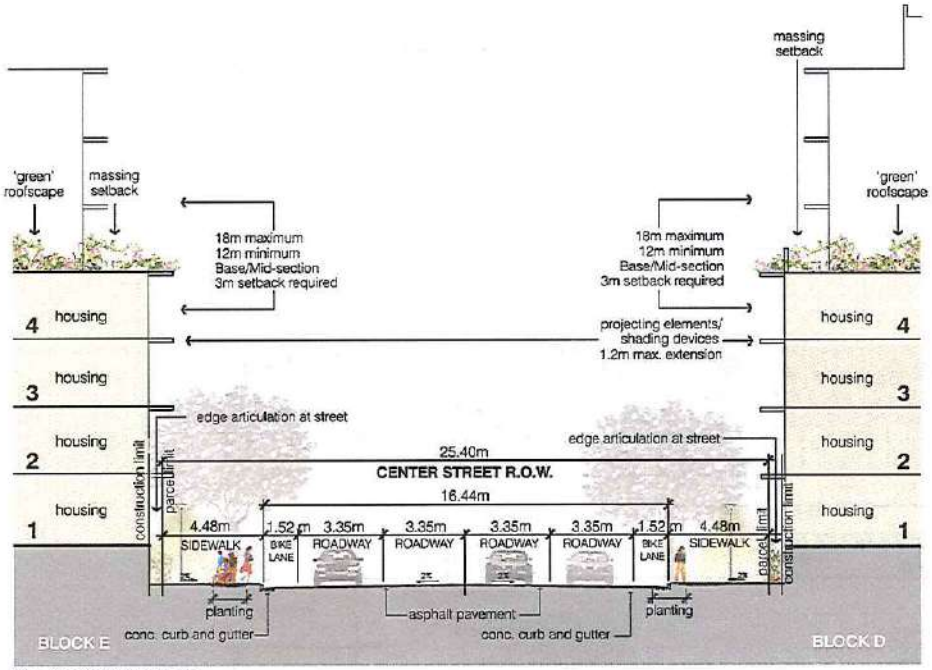


FIG. 4.5.3: SECTION FJ3



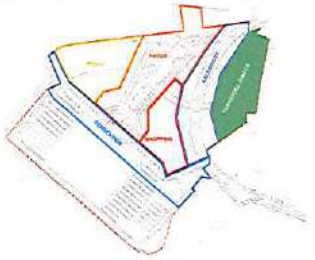


FIG. 4.5.3
SECTION FJ3
Center Street

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

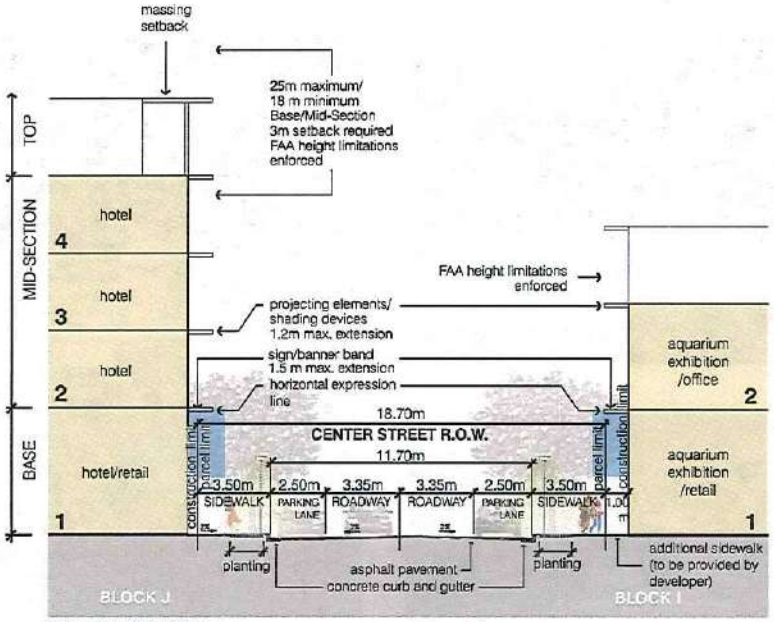
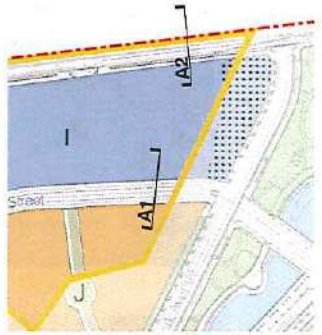
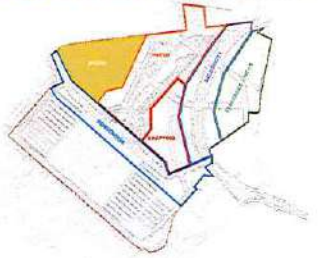


FIG. 4.6.1: SECTION A1





FIGS. 4.6.1/4.6.2
SECTIONS A1/A2
Center Street/Lindbergh Street

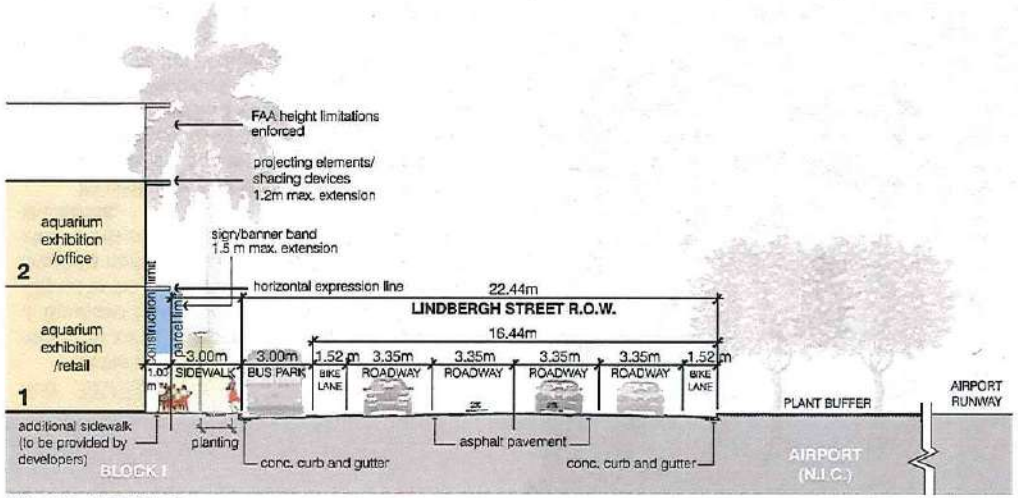


FIG. 4.6.2: SECTION A2

1.0
2.0
3.0
4.0 URBAN CHARACTER ZONES
5.0
6.0
A

4.6 MUSEO

At the western side of the District is the Museo character zone, comprised entirely of blocks I and J. Bounded by Lindbergh Street and the Dominicci Airport to the north, it also forms a large part of the District's northern face. Due to its proximity to the airport, this zone is most constrained by FAA height limitations.

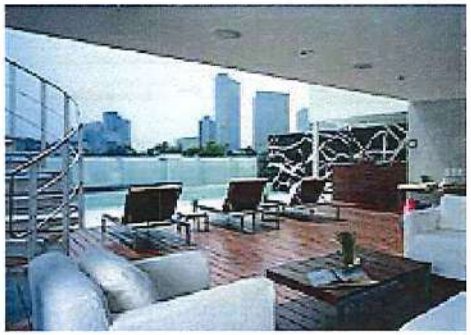
Its character is of lower masses intermingled with landscaped space which distinguishes this area from the denser eastern blocks. The planted buffer to the airport forms one boundary. The Aquarium of Puerto Rico on Block I is a significant feature that completes the northwest end of the Paseo and the east-west open space sequence. The hotel on Block J solidifies the western edge of the Crescent Basin and Paseo. Both blocks share the possibility of meandering internal landscaped open space for pedestrian accessibility.







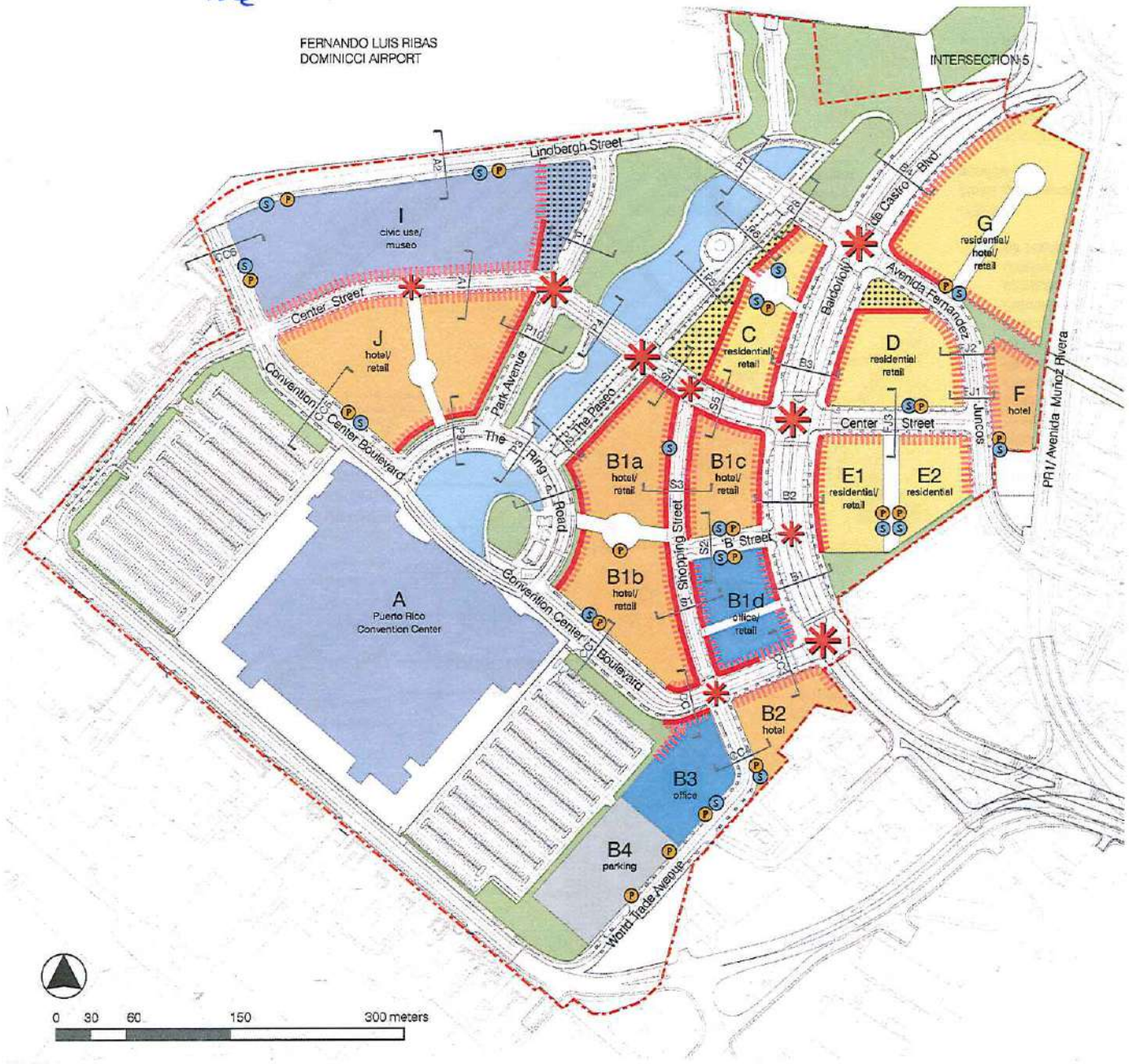






5.0
INDIVIDUAL BLOCK GUIDELINES

5.0
INDIVIDUAL BLOCK GUIDELINES



LEGEND

- Convention/Civic
- Office
- Residential
- Hotel/Entertainment
- Commercial
- Parking
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Gateway
- District Boundary

FIG. 5.0.1
BLOCK GUIDELINES

FIG. 5.0.1

LEGEND

- Hotel/Entertainment
- Commercial
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary

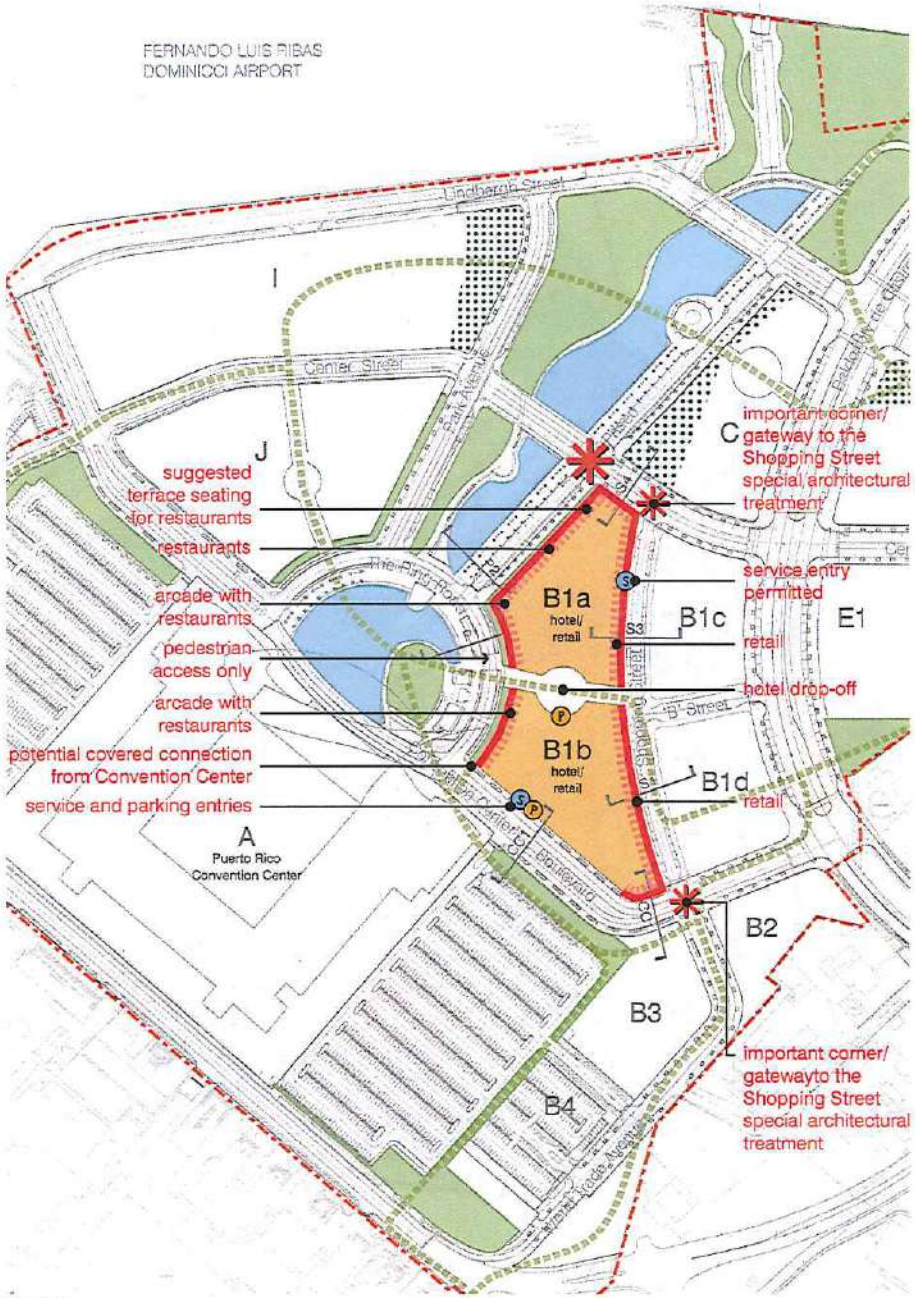


FIG. 5.1.1

FIG. 5.1.1
BLOCK PLAN
Blocks B1a and B1b

5.1 BLOCKS B1a AND B1b HEADQUARTERS HOTEL DEVELOPMENT

LOCATION

- Parcels B1a and B1b are bounded by the Ring Road and the Paseo to the west, Convention Center Boulevard to the south, the Shopping Street to the east, and Center Street to the north.
- Primary Pedestrian Access: 'B' Street Pedestrian Connection, the Ring Road, the Paseo, the Shopping Street and Center Street
- Vehicular Access'B' Street (Drop Off) and Convention Center Boulevard

APPROXIMATE DIMENSIONS

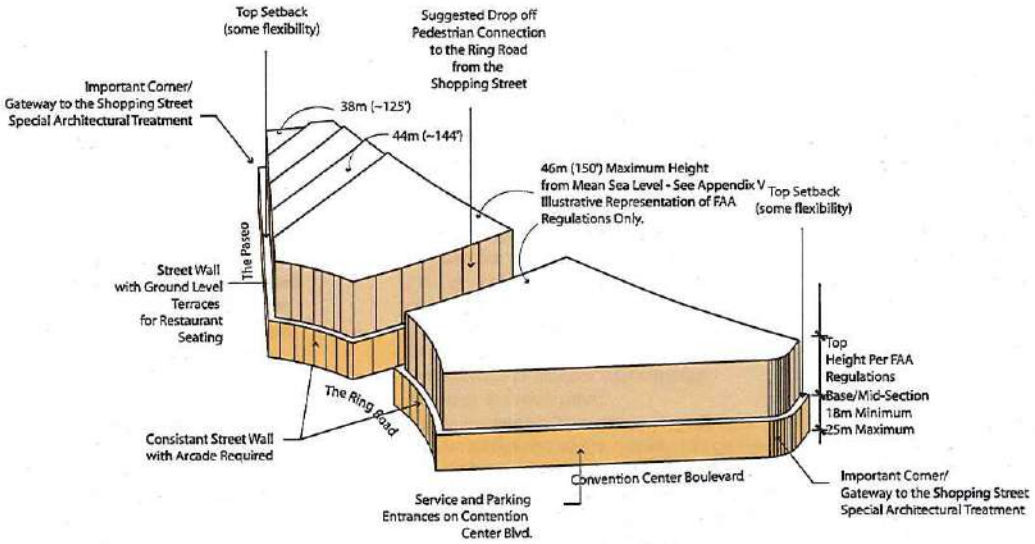
- Parcel Size: 18,651 SM (200,756 SF)
- Height of the Base and Middle: At least 18m (60')
- Max. Height of Construction: Block B1a falls within the FAA regulated height envelope, with construction height limited from approximately 38m (125') to 46m (151') from Mean Sea Level in a 7:1 slope roughly north to south across the block [See Fig. 2.10.1 and Appendix 8].
- Block B1b Maximum Construction Height: 46m (150') from Mean Sea Level per FAA regulation.
- Exemption from height limitations may be possible within the horizontal surface at 46m (150') with FAA approval.
- FAA airspace restrictions apply due to its proximity to the Fernando L. Ribas Dominicci Airport.
- Parcel developers are responsible for conducting an Aeronautical Study and obtaining a Determination of No Hazard to Air Navigation from the FAA.

USES

Hotel, commercial and entertainment, parking and service.

GROSS SQUARE FOOTAGE

- Hotel: 455,470 SF (503 keys)
- Commercial/Entertainment: 115,132 SF (Maximum 12 cinema screens)
- Parking: 467 spaces
- Parking Levels: 6 levels maximum



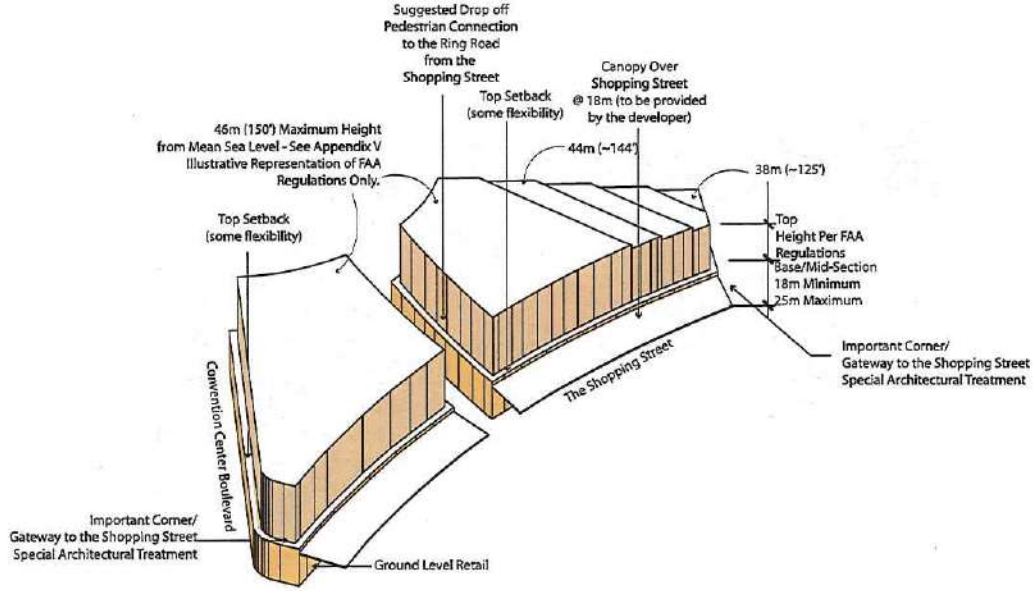


FIG. 5.1.2



FIG. 5.1.2
BUILDING ENVELOPES
Blocks B1a and B1b

LEGEND

- Hotel
- Commercial
- Parking

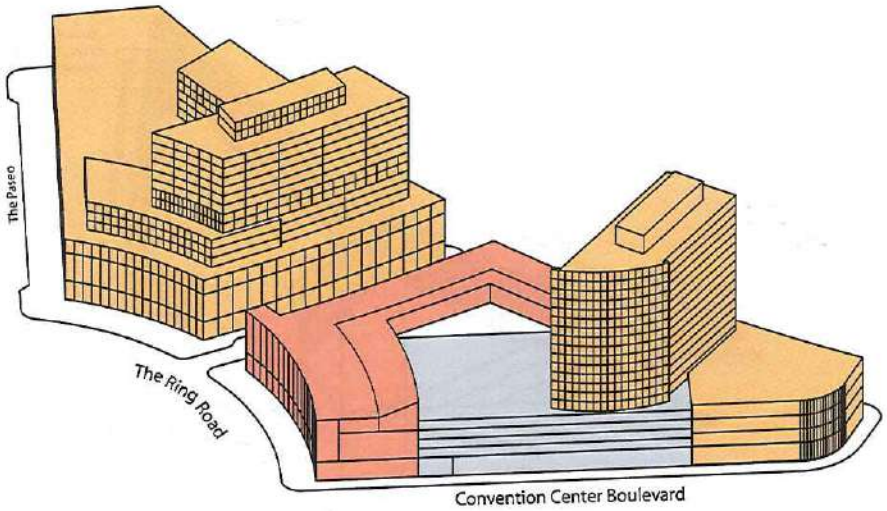


FIG. 5.1.3

FIG. 5.1.3
USE DIAGRAM
Blocks B1a and B1b

DESIGN OBJECTIVES

A. General

- Parcels B1a and B1b are seen as a signature hotel buildings situated prominently in front of the Convention Center and abutting the Shopping Street and the Paseo.
- Proceeding in tandem with the mixed-use development including Parcel C and complementing the Convention Center, the development of B1a and B1b holds an important place in the overall masterplan.
- The Hotel buildings have an important role in defining the Shopping Street and ensuring the success of commercial in the District. They will also produce grade level commercial along the Ring Road, the Paseo and the triangular Plaza on Parcel C.

B. Hotel

- Give the hotel prominence within the block pattern.
- Optimize views and visibility for oncoming traffic.
- Hotel towers should contribute to the skyline presence of the District when seen from a distance.
- Provide an interesting arrival sequence and approach to the Convention Center.
- Continue the new internal east/west street from the Baldorioty de Castro Boulevard between B1c and B1d as a drop off inside the B1a and B1b blocks, creating a grand entry feature. This entry/pedestrian passage should provide views from Baldorioty de Castro Boulevard to the Convention Center and a pedestrian path from the Shopping Street to the Ring Road.
- Have regard for access, internal traffic circulation and maximization of view corridors.
- Orient public uses to the Paseo and the Shopping Street.
- Locate hotel pre-function areas with transparent facades along the edges of the block to animate the streets. Blank elevations on public faces of buildings should be avoided.
- Service and BOH functions should be tucked inside the block and their visibility to the public streets minimized.
- Create a special, public, pedestrian-oriented entry point at the intersection of the Shopping Street and the hotel drop-off area.

C. Commercial/Commercial Use

- Commercial frontage along the Paseo should emphasize restaurant use with opportunities for use of outdoor terraces. The hotel is encouraged to locate its restaurant functions on the Paseo to reinforce the character of this edge, as well as take advantage of views and access to the Paseo Park.
- Restaurant use with opportunities for use of outdoor terraces. The hotel is encouraged to locate its restaurant functions on the Paseo to reinforce the character of this edge, as well as take advantage of views and access to the Paseo Park.
- All commercial establishments should be high quality specialty stores serving a variety of users. The commercial strategy should be integrated with the emerging public nature of the District as a draw for visitors and locals and should anticipate additional complementary commercial across the Shopping and Center Streets. Commercial strategy should plan for single-sided commercial in the interim.
- Commercial use on Center Street should



FIG. 5.1.4

FIG. 5.1.4
PROPOSED MASSING
Blocks B1a and B1b

typically occupy two floors. Uses can include both restaurants and commercial up to a maximum of 25,000 sf per establishment.

D. Theaters

- Locate the theaters to strategically located to enhance street life and the public realm.
- Locate pre-function and public circulation spaces along the major streets with transparent facade treatment to create an animated backdrop for streetlife.
- Minimize blank walls facing main streets. Where blank walls are inevitable, architectural treatment should animate the streetscape.
- Reinforce a distinct commercial identity by revealing internal activities through the use of transparent facades and well articulated massing.

E. Parking and Service

- Provide an integrated solution for access and service of public and support areas, including parking, employment access, supply delivery, storage, waste management and security.
- Parking or service entries on the Paseo are not permitted.
- Service entries should be minimized on the Shopping Street. Where unavoidable, they should lead to an internal service area.
- Service entry from the drop-off connection can be established with care. The quality of the public / pedestrian realm and the integrity of place should not be compromised.

MASSING

- Building design should carefully define the pedestrian scale while maintaining a strong streetedge on all sides of the block.
- Building massing should have a clearly articulated base and mid-section defining the street-wall with a height between 18m (60') minimum and 25m (85') maximum with towers above set back and rising to FAA height limitations.
- Building envelope height of the base/mid-section on the Shopping Street should be at least 18m (60'), creating a street section of approximately 1:1 proportions. Any height added to the base/mid-section massing on the Shopping Street should be coordinated with the canopy design. Maximum height of the base shall be 25m (85').
- Buildings should respect the scale and the importance of the Convention Center. Their massing should compliment the Convention Center and not overshadow it.
- Buildings should maintain a strong street wall around the Ring Road and provide arcades as specified in the streetscape sections (See



FIG. 5.1.5

FIG. 5.1.5
ILLUSTRATIVE VIEW
Blocks B1a and B1b

Fig. 4.7.2a and sample massing).

- Building envelope height of the base/mid-section on the Paseo should be at least 25m (85') tall. It is essential to maintain a strong edge to the Paseo Park.
- Locate towers in the area indicated in the block guideline diagrams. These general locations are in keeping with the overall massing of the District.
- Towers should ideally be set back from the base/mid-section by at least 10', however, designers should feel free to propose alternative solutions while still maintaining the spirit of the Design Guidelines.
- Orient the towers in the east- west direction to take full advantage of vistas looking north and south, and so as not to block views from the D and E blocks and existing buildings in Miramar.

DESIGN CHALLENGES

- Finding a way to make the two blocks work as a coherent whole in defining the edge of the Ring Road and the Paseo even though the program may be asymmetrically distributed. The key may lie in strengthening the articulation of the base massing on these two blocks.
- Expressing and articulating the common entry plaza. The desire is to make this a very active grade-level pedestrian space with sidewalk level access between the two blocks and connections from the hotel to the Convention Center. A high-level overhead canopy to provide shading is encouraged.
- The Hotel blocks will provide the canopy for the Shopping Street. The canopy would be connected to the hotel building and will be temporarily supported on the other side of the street until the remaining blocks are built out. The canopy should anticipate a similar base massing across the street.
- The canopy over the Shopping Street is a unifying urban and architectural element that clearly gives commercial in the District a character unique in the San Juan metropolitan area. Its design should be elegant and of particular distinction, as well as functionally creating shade, protection from wind and rain, and an intimate scale and character for this animated shopping district. Creative lighting design should reinforce this identity at night and at a distance. Innovation in structural and sustainable design is encouraged, especially as related to the seismic and wind load parameters of the site.

ENGINEERING AND GEOTECHNICAL

- The important structural issues for Block B1a and B1b are expected to be large base shears for both wind and seismic and the differing seismic response of the low-rise and high-rise portions. The high base shears will be a result of the building height, the large base and the wind exposure of the towers.
- Column loads are expected to range from 1,600 to 2,000 kips for interior columns and from 1,000 to 1,300 kips for exterior columns. Base shears are expected to range from 2,500 to 3,600 kips for seismic and from 3,200 kips to 3,600 kips for wind.
- Block B1b may require implementation of several different types of structural systems to meet the specific requirements of different program spaces.
- Column loads are expected to range from 800 to 1,000 kips for interior columns and from 500 to 800 kips for exterior columns. Base shears are expected to range from 800 to 1,000 kips for seismic and from 600 kips to 800 kips for wind.

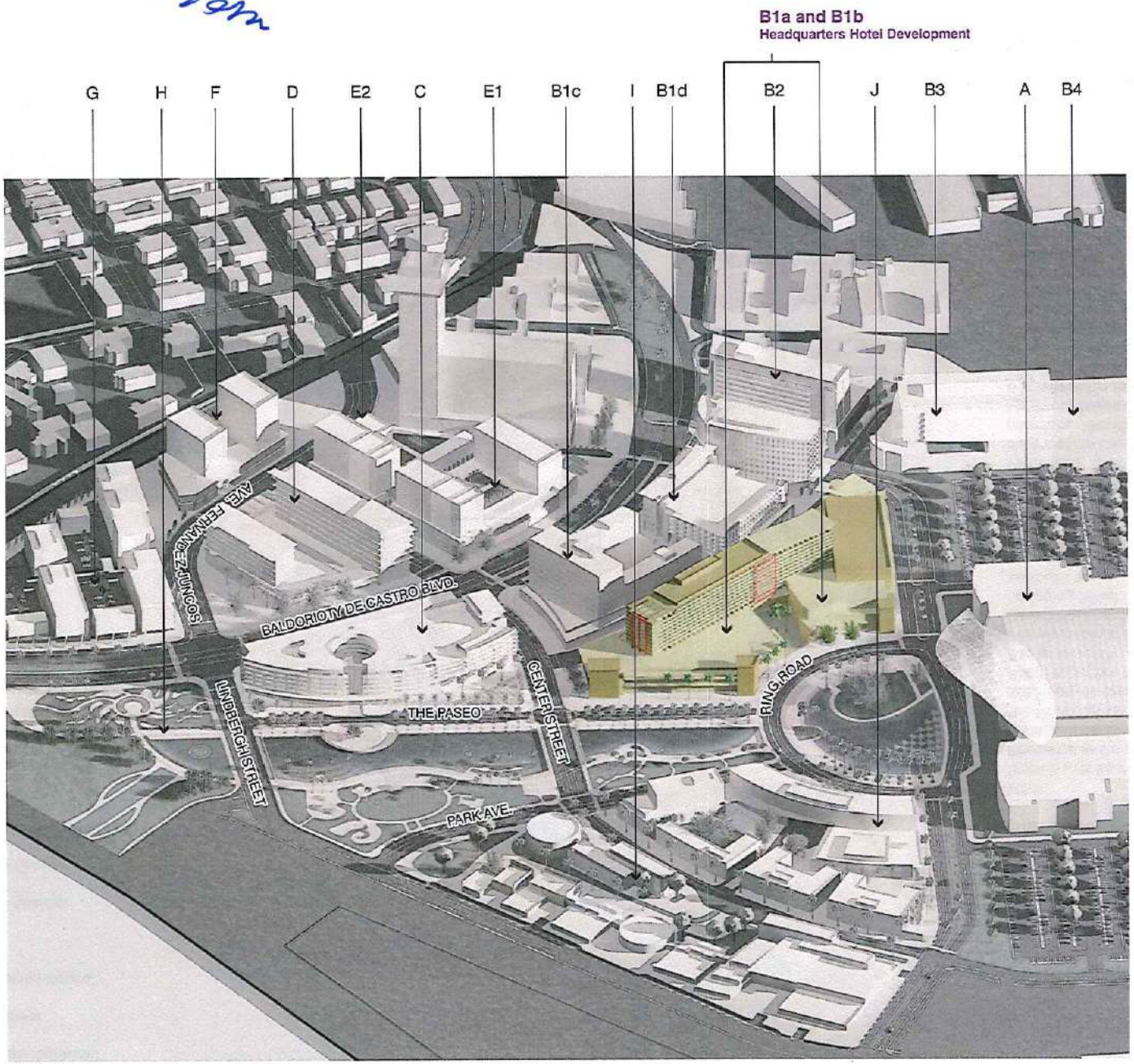


FIG. 5.1.6

FIG. 5.1.6
SAMPLE AXONOMETRIC
Blocks B1a and B1b

LEGEND

- Hotel/Entertainment
- Commercial
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary

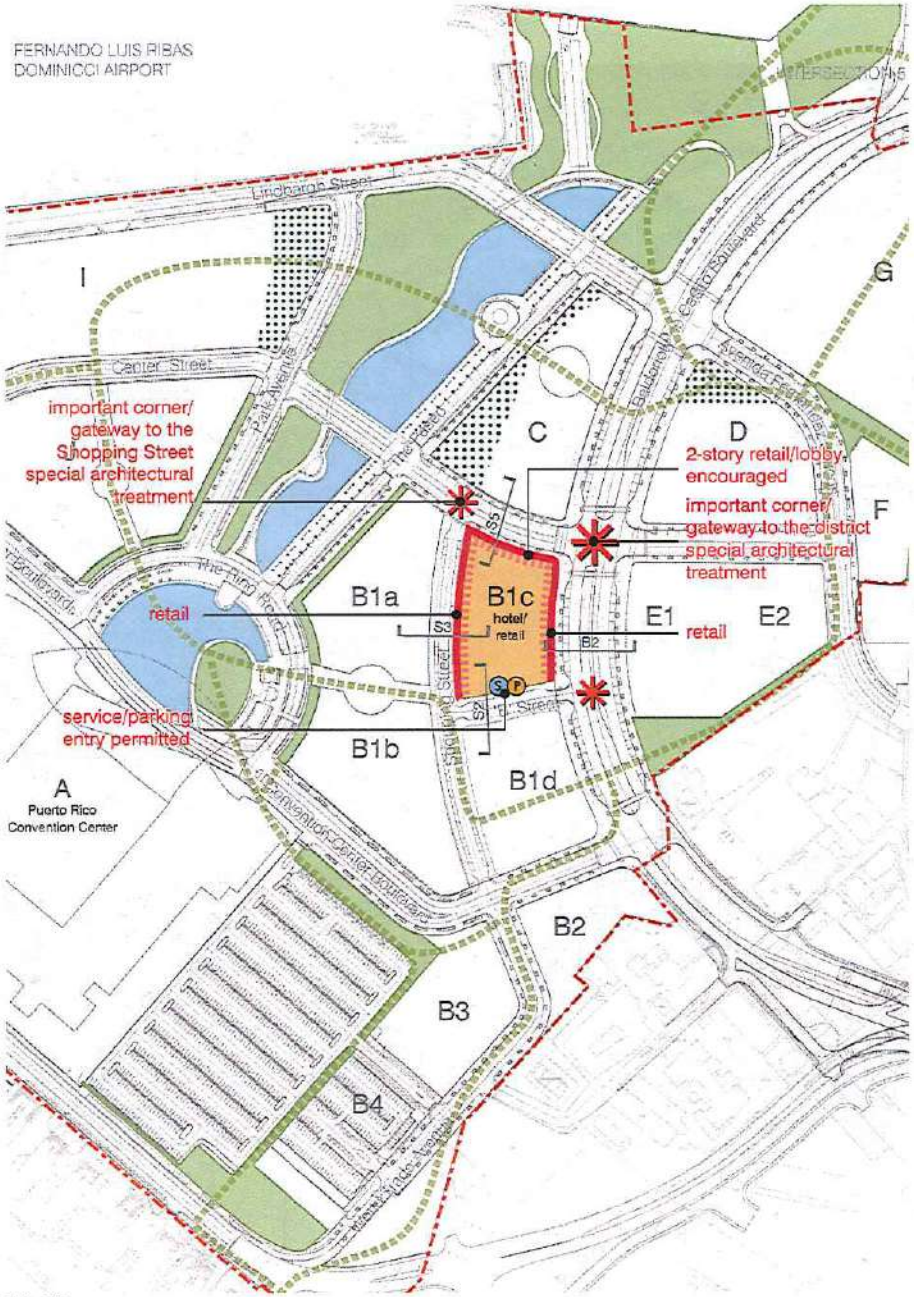


FIG. 5.2.1

FIG. 5.2.1
BLOCK PLAN
Block B1c

1.0
2.0
3.0
4.0
5.0 BLOCK GUIDELINES
6.0
A

5.2 BLOCK B1c HOTEL

LOCATION

- Block B1c is bound by Baldorioty de Castro Boulevard to the east, Center Street to the north, and the Shopping Street to the west. "B" Street, an east-west alleyway between Baldorioty de Castro Boulevard and the Ring Road, separates block B1c from from Block B1d to its south.
- Primary pedestrian access: Baldorioty de Castro Boulevard, Center Street, and the Shopping Street
- Vehicular access: On "B" Street. No entries for parking and service are allowed from Center Street, the Shopping Street or Baldorioty de Castro Boulevard.

APPROXIMATE DIMENSIONS

- Parcel size: 5,820.54 SM (62,651.78 SF)
- Height of the base and middle: 12m (40') minimum, 18m (60') maximum
- Maximum height of construction: Block B1c falls within the FAA regulated height envelope, with construction height limited to between 38m (125 ft) and 46m (151 ft) from Mean Sea Level in a 7:1 slope roughly north to south across the block. [See Fig. 2.10.1 and Appendix 8].
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Hotel, commercial, parking and service

GROSS SQUARE FOOTAGE

- Hotel: 158,368 sf (250 rooms)
- Commercial: 11,000 sf
- Parking: 277 spaces
- Parking levels: 4 levels max. above grade

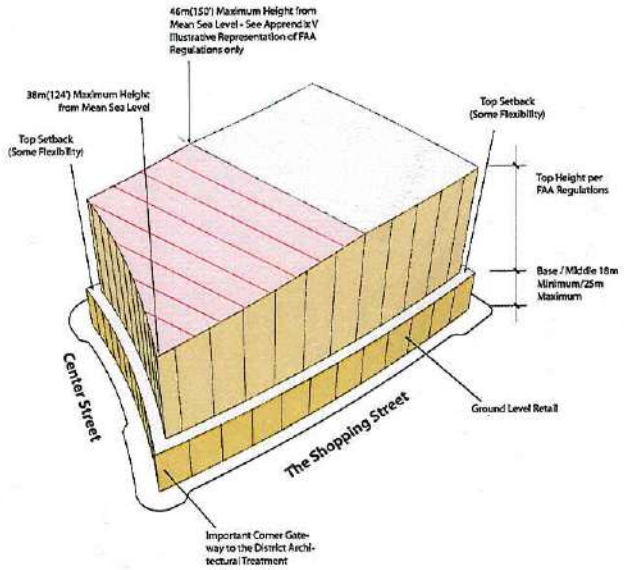


FIG. 5.2.2: BUILDING ENVELOPE FROM THE SOUTH (LEFT), AND NORTH (RIGHT)



FIG. 5.2.2
BUILDING ENVELOPES
Block B1c

DESIGN OBJECTIVES

A. General

- Block B1c is a centrally located hotel block bridging the Shopping Street and Baldorioty de Castro Boulevard, with ground floor commercial (or office use) on both streets. Like the Headquarters Hotel (Blocks B1a and B1b) to its west, the hotel on Block B1c will cater to a mixed clientele of Convention Center visitors, international business travelers and tourists.
- Block B1c has a valuable commercial edge on the Shopping Street and Baldorioty de Castro Boulevard, which will become destinations for San Juan residents, as well as for tourists and Convention Center visitors.

B. Hotel

- Provide and interesting arrival sequence and approach to the Shopping Street, with hotel drop-off located on Center Street.
- Provide pleasant, landscaped street edges along the Shopping Street and Baldorioty de Castro Boulevard for the comfort of pedestrians visiting the commercial stores.
- The public functions of the hotel should be distributed equally along the Shopping Street, Baldorioty de Castro Boulevard and Center Street to reinforce the urban character of the District.
- Create a contemporary, urban architectural expression that compliments the massing of the Headquarters Hotel, while also differentiating Block B1c from the other hotels in the District.

C. Commercial/Commercial use

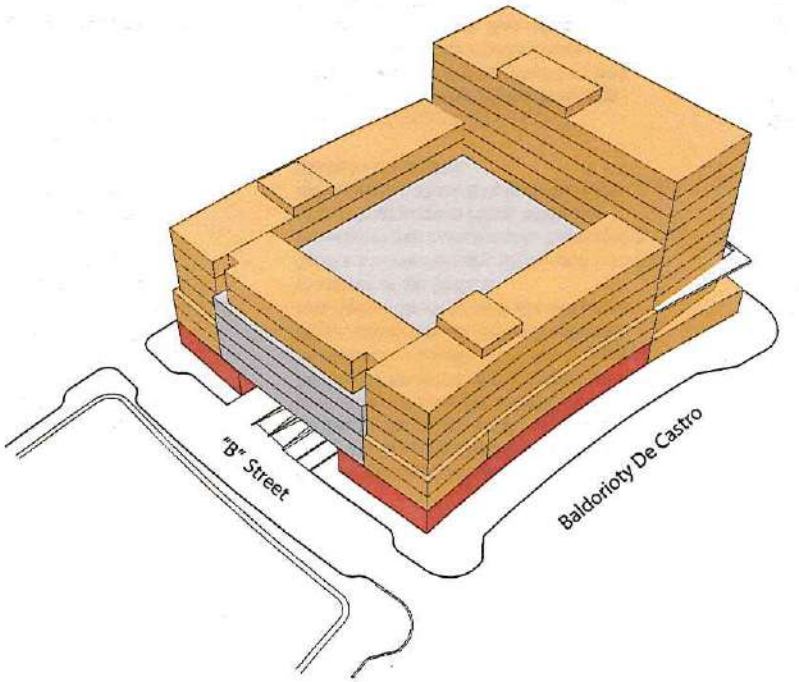
- Commercial frontage on the Shopping Street and Baldorioty Boulevard should be accompanied by landscape and architectural elements that shield pedestrians from the sun and street traffic.
- All commercial establishments should be high quality specialty stores serving a variety of users. The commercial strategy should be integrated with the emerging public nature of the District as a draw for locals and visitors, with special attention paid to the needs of its new residents and daytime workers.
- Commercial use on the Shopping Street can occupy two floors, with a maximum total floor area of 11,184 square feet.

D. Parking and Service

- Provide an integrated solution for access and service of both public and support areas, including parking, supply delivery, storage, waste management and security.
- Service and BOH functions should be accessed from "B" Street, which will include the entrance to the parking structure encase within the block. This service use of the alley should not prevent its use by pedestrians.
- Hotel will have on-street drop-off on Center Street with valet parking service.

LEGEND

- Hotel
- Commercial
- Parking



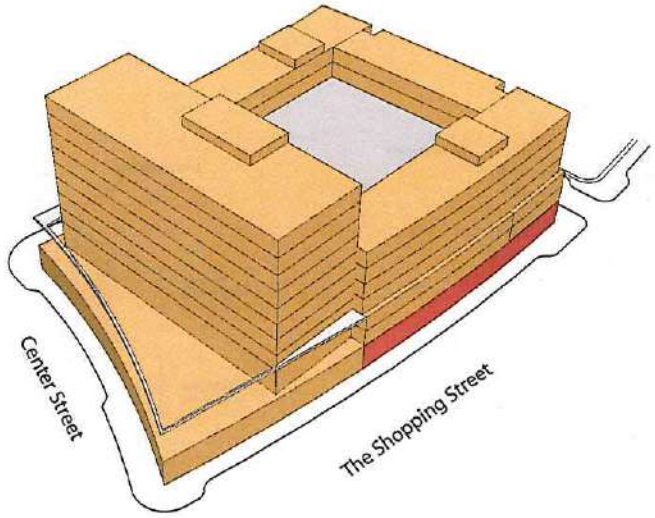


FIG. 5.2.3
USE DIAGRAM
Block B1c

FIG. 5.2.3

MASSING

- Building design should carefully define the pedestrian scale on the all open sides of the block and maintain a strong street edge.
- The building should maintain a strong street wall along the Shopping Street, Baldorioty de Castro Boulevard and , as specified in the streetscape sections (See Fig. 4.1.2. and 4.1.4.) and sample massing).
- Building massing should have a clearly articulated base and mid-section defining the street-wall with a height between 12m (40') minimum and 18m (60') maximum with a minimum setback of 3m for towers above rising to FAA height limitations.
- All openings facing east and west should be shaded with overhangs and fins, or balconies.
- Building massing should not be monolithic in the direction of the prevailing winds. Elevations facing north and south can be articulated to pull air into rooms for natural ventilation.

DESIGN CHALLENGES

- Block B1c, like Block B1d to its south, straddles the Shopping and Baldorioty character zones. The elevations of the hotel on these two major streets should be designed uniquely to conform to their different scale, use and character, as described in Chapter 4. (See Fig. 4.3.2, 4.3.3., and 4.4.2.)
- The northwest corner of Block B1c must be emphasized architecturally as part of the pedestrian and vehicular gateway to the Shopping Street.
- The northeast corner of the block marks the transition from residential to hotel and civic use along Center Street, and requires special architectural treatment.
- The Headquarters Hotel, located on Blocks B1a & B1b, creates a monolithic edge along

the entire western side of the Shopping Street, countered by Blocks B1c and B1d on the opposite side. The design of Block B1c must, likewise, create a strong street wall that balances the massing of the Headquarters Hotel.

- Given the prominence of its four facades on major avenues, parking for hotel guests in Block B1c and service entrances should be located within the block, accessed from "B" Street.
- Innovation in architectural and sustainable design is encouraged, especially demonstrating an understanding of local climate, the interaction between interior and exterior space, orientation, pedestrian comfort, and the image of a culturally grounded yet contemporary and sophisticated Puerto Rico.
- The development should meet LEED Silver rating standards or better.

ENGINEERING AND GEOTECHNICAL

- The important structural issues for Block B1c are expected to be large base shears for both wind and seismic loads and the differing seismic response of the low-rise and mid or high-rise portions of the building. The high base shears will be a result of the building height, the size of the base and the wind exposure of towers.
- Column loads are expected to range from 1,600 to 2,000 kips for interior columns and from 1,000 to 1,300 kips for exterior columns. Base shears are expected to range from 2,500 to 3,600 kips for seismic and from 3,200 kips to 3,600 kips for wind.
- Implementation of several different types of structural systems may be necessary to meet the specific requirements of different program spaces within the development.

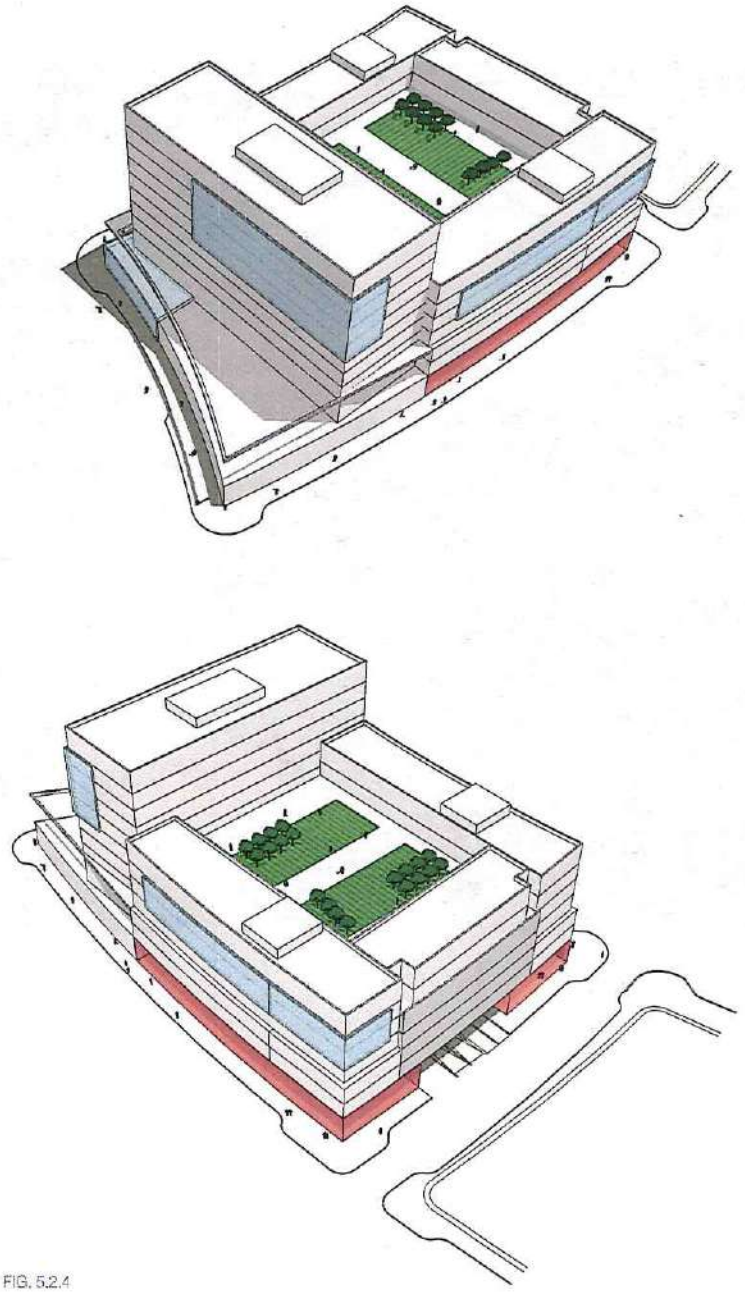


FIG. 5.2.4

FIG. 5.2.4
SAMPLE MASSING
Block B1c

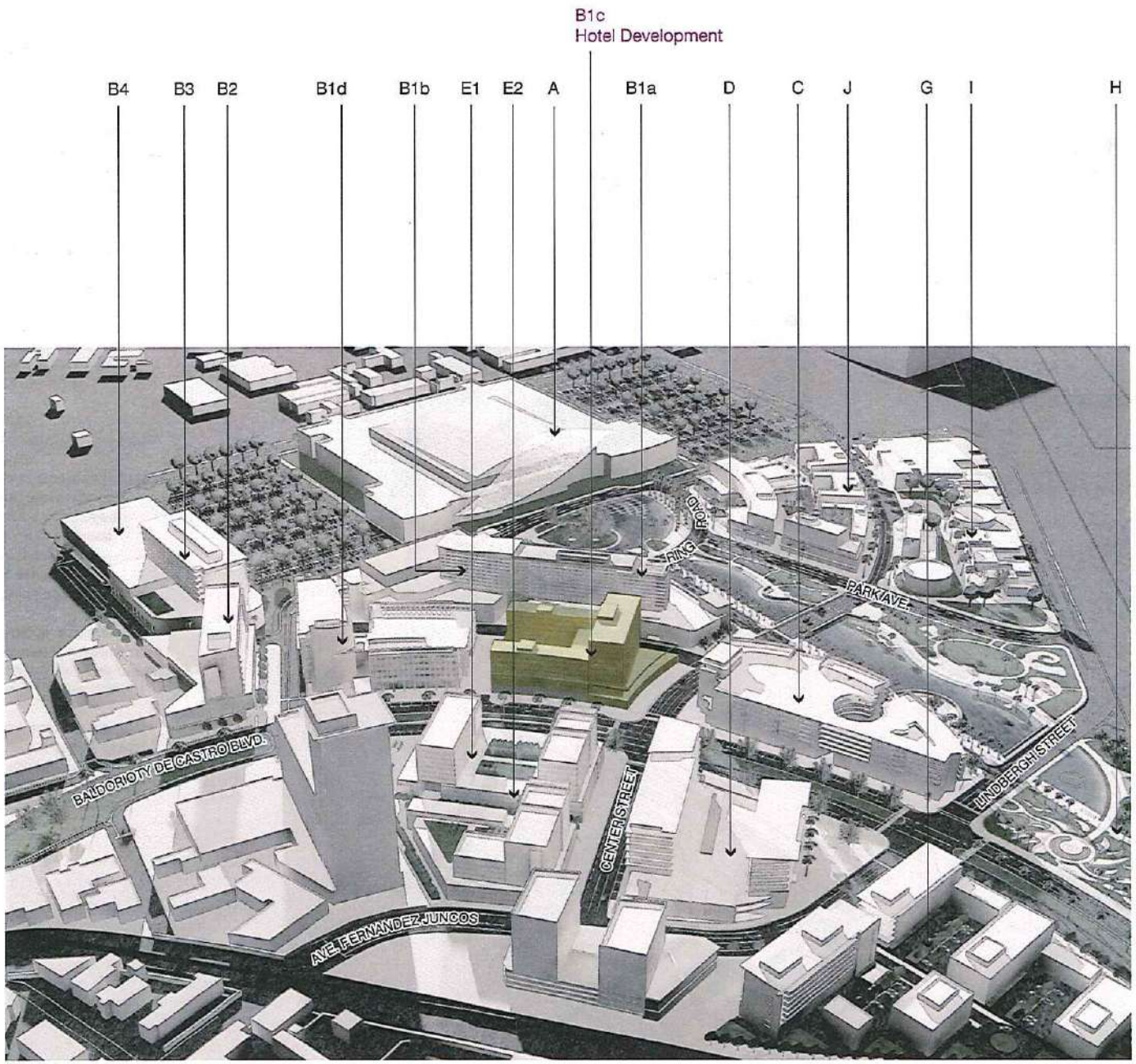


FIG. 5.2.5

FIG. 5.2.5
SAMPLE AXONOMETRIC
Block B1c

5.3 BLOCK B1d
OFFICE DEVELOPMENT

LOCATION

- Block B1d is bounded by the Shopping Street to the west, 'B' Street to the north, Convention Center Boulevard to the south and Baldorioty de Castro Boulevard to the east.
- Primary Pedestrian Access: The Shopping Street, 'B' Street, Convention Center Boulevard and Baldorioty de Castro Boulevard.
- Vehicular Access: 'B' Street

APPROXIMATE DIMENSIONS

- Parcel Size: 6,513.77 SM (70,113.63 SF)
- Height of the base and middle: 18m (60')minimum, 25m (85')maximum
- Maximum Height of Construction: 46m (150') from Mean Sea Level as per FAA regulation; exemptions may be possible within the horizontal surface at 46m (151') with FAA approval. [See Fig. 2.10.1 and Appendix 8].
- FAA airspace restrictions apply due to its proximity to the Fernando L. Ribas Dominicci Airport.
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Office, commercial, parking and service.

GROSS SQUARE FOOTAGE

- Office: 250,000 SF.
- Commercial/Commercial: 24,322 SF.
- Parking: 527 spaces
- Parking Levels: 6 Levels Maximum

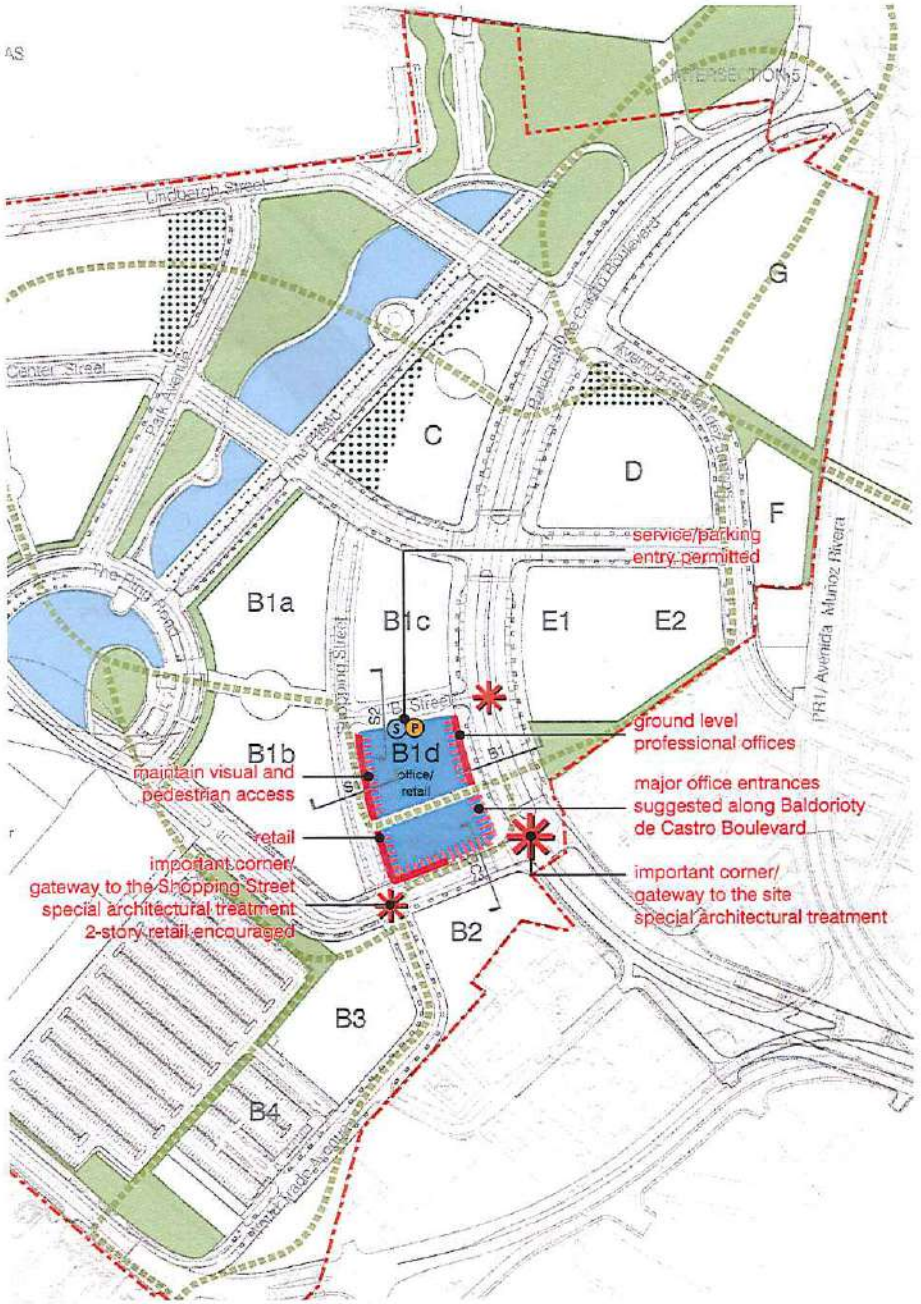


FIG. 5.3.1

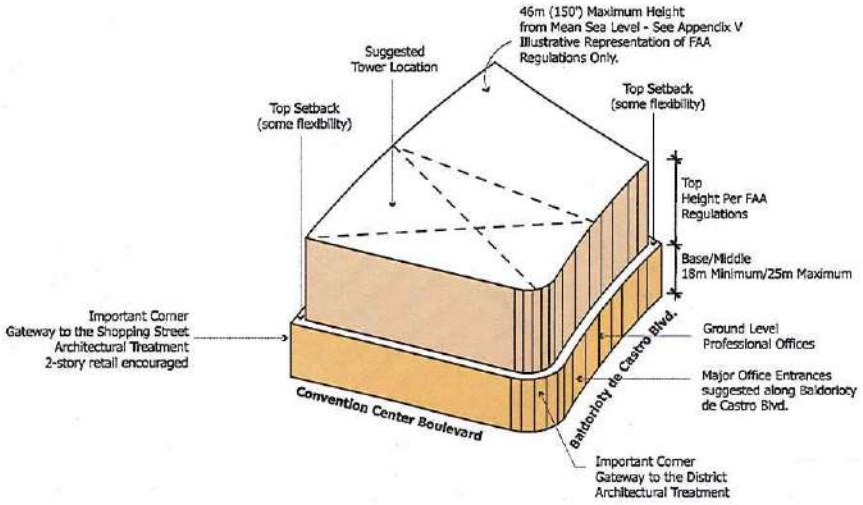
LEGEND

- Office
- Commercial
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary

FIG. 5.3.1
BLOCK PLAN
Block B1d



FIG. 5.3.2
BUILDING ENVELOPES
Block B1d



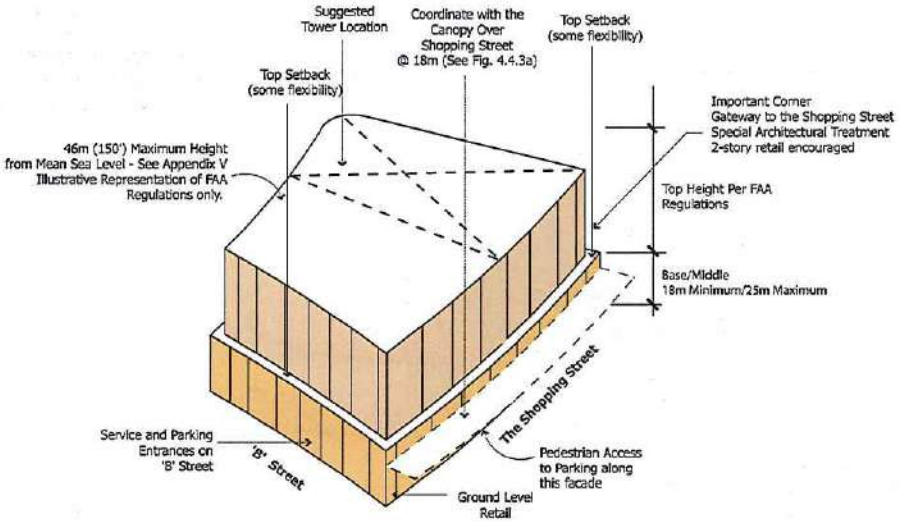


FIG. 5.3.2: BUILDING ENVELOPE FROM THE SOUTH (TOP), AND THE NORTH (BOTTOM)

DESIGN OBJECTIVES

A. General

- Parcel B1d is seen as an important 'gateway' building emphasizing the office presence in the District at the convergence of the Balodrioty de Castro and the Convention Center Boulevard.
- Building design at this intersection should provide cues to the automobiles signifying the movement towards the Convention Center.
- Parcel B1d has an important role in defining the shopping street and its success of commercial in the District.

B. Office

- Office use is defined as a mix of headquarters and professional offices.
- Locate major office entrances on Baldorioty de Castro Boulevard.
- Entrances for professional offices above commercial may be located intermittently on all streets, with an emphasis on Baldorioty de Castro Boulevard.
- Corner articulation at the intersection of Baldorioty de Castro Boulevard and Convention Center Boulevard should architecturally reinforce the gateway described in the Proposed Development Concept–see Fig. 3.5.3 and 3.6.1.
- Office tower should contribute to the skyline presence of the District when seen from a distance.

C. Commercial

- Locate the majority of commercial frontage along the Shopping Street.
- All commercial establishments should be high quality specialty stores serving a variety of users. The commercial strategy should be integrated with the emerging public nature of the District as a draw for visitors and locals and should anticipate additional complementary commercial across the

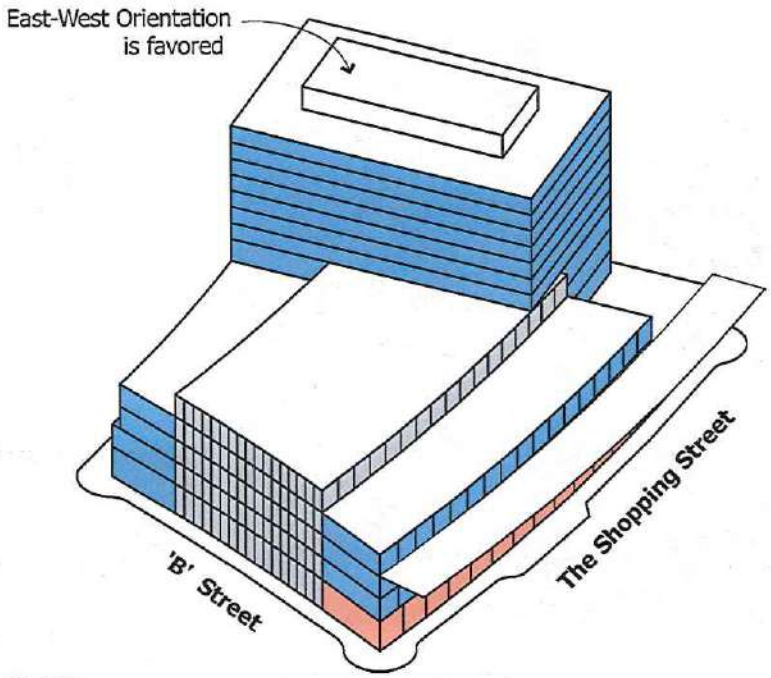


FIG. 5.3.3

Shopping and Center Streets. Commercial strategy should plan for single-sided commercial in the interim.
- Commercial includes commercial up to a maximum of 25,000 sf per establishment.
- Corner articulation at the intersection of Convention Center Boulevard and the Shopping Street should be two stories and architecturally reinforce the entrance to the commercial core of the District.

D. Parking and Service
- Provide an integrated solution for access and service of public and support areas, including parking, supply delivery, storage, waste management and security.
- Parking and service entries must be located on 'B' Street. No entries for parking and service are allowed from the Shopping Street, Convention Center Boulevard or Baldorioty de Castro Boulevard.
- Conceal parking structures with commercial and office uses, or where necessary with landscape or architectural screening to minimize their visibility from the streets.
- Service and parking entries should be treated with care so as not to compromise the quality of public realm.

MASSING
- Building design should carefully define the pedestrian scale of all sides of the block.
- Building massing should have a clearly articulated base and mid-section defining the street-wall with a height between 18m (60') minimum and 25m (85') maximum with towers set above and rising to FAA height limitations.
- Buildings should maintain a strong street edge on all sides of the block.
- Locate towers in the area indicated in the block guideline diagrams. These general locations are in keeping with the overall massing of the District.
- Towers should ideally be set back from the base/middle by at least 3m (10'), however, designers should feel free to propose alternative solutions while still maintaining the spirit of the Design Guidelines.
- Orient the towers in the east- west direction to take full advantage of vistas looking north and south, and so as not to block views from the E block and existing buildings in Miramar.
- Building design should carefully observe the scale and character of each of the urban character zones within which block B1d is located.

DESIGN CHALLENGES
- The canopy over the shopping street is a unifying urban architectural element that clearly gives commercial in the District a character unique in the San Juan metropolitan area. Building design should respond to the canopy and take advantage of it.
- Entrances to commercial, offices and parking should be articulated to enhance the quality of mixed-use environment, while retaining the distinct character of the Shopping Street and Baldorioty de Castro Boulevard.
- The office tower on block B1d forms one half of the 'gateway' expression at the beginning of Convention Center Boulevard and the major vehicular approach to the Puerto Rico Convention Center. This 'gateway' also emphasizes the corporate image of the District. Special attention should be given to the architectural expression to support this concept.

ENGINEERING AND GEOTECHNICAL
- Large base shears are expected for both wind and the differing seismic response of the low-rise and high-rise portions of construction on block B1d. Seismic separation will likely be required should the tower be located on one edge of the parcel.
- Column loads are expected to range from 1,300 to 1,800 kips for interior columns and from 1,000 to 1,300 kips for exterior columns. Base shears are expected to range from 1,000 to 1,500 kips for seismic and from 1,800 kips to 2,200 kips for wind.
- At the parking portions of the structures, column loads are expected to range from 600 to 800 kips for interior columns and from 400 to 600 kips for exterior columns.

LEGEND
- Office
- Commercial
- Parking

FIG. 5.3.3
USE DIAGRAM
Block B1d



FIG. 5.3.4



FIG. 5.3.5

FIG. 5.3.4 / 5.3.5
PROPOSED MASSING/ ILLUSTRATIVE VIEW
Block B1d

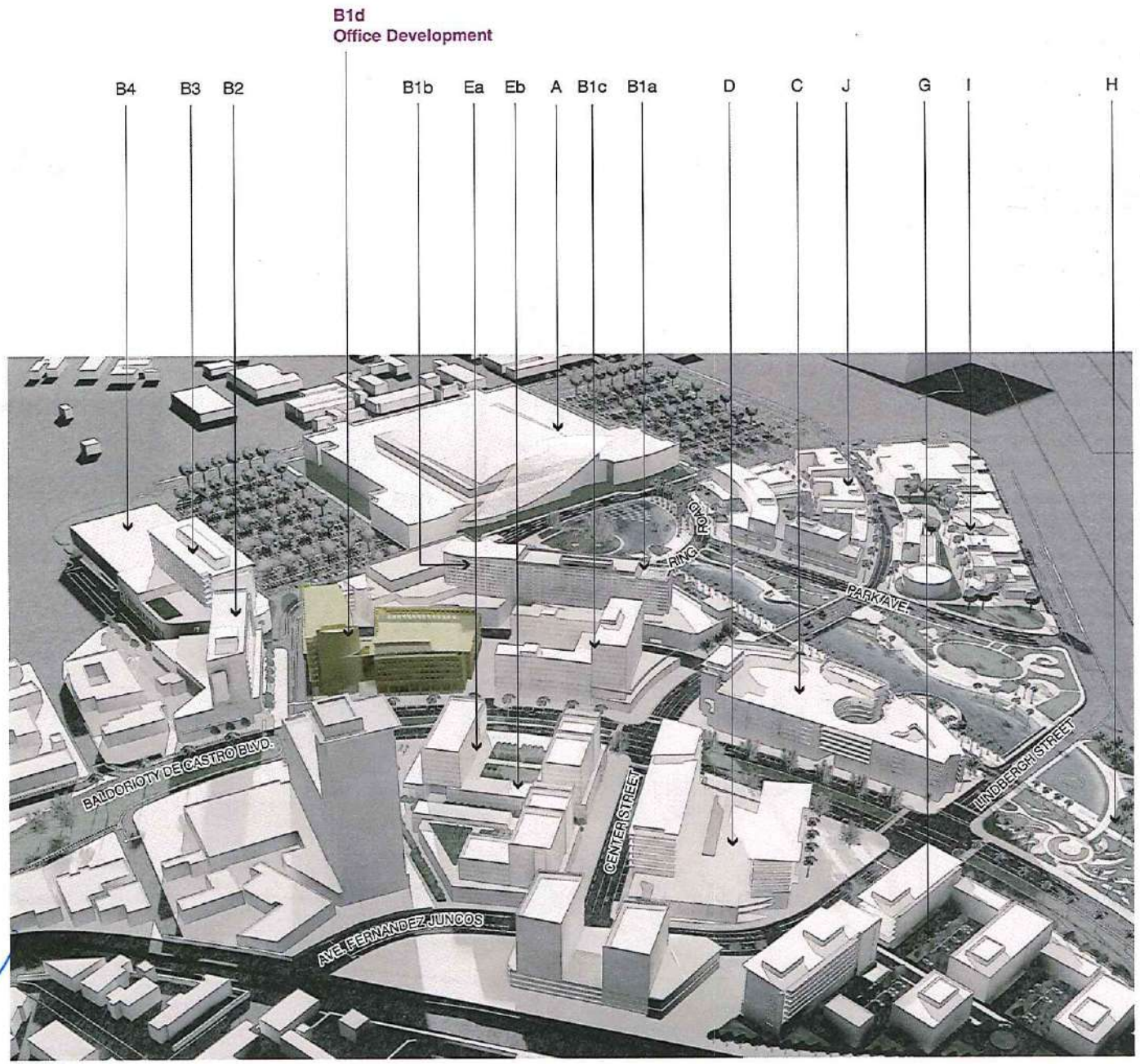


FIG. 5.3.6

FIG. 5.3.6
SAMPLE AXONOMETRIC
Block B1d

LEGEND

- Hotel/Entertainment
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary

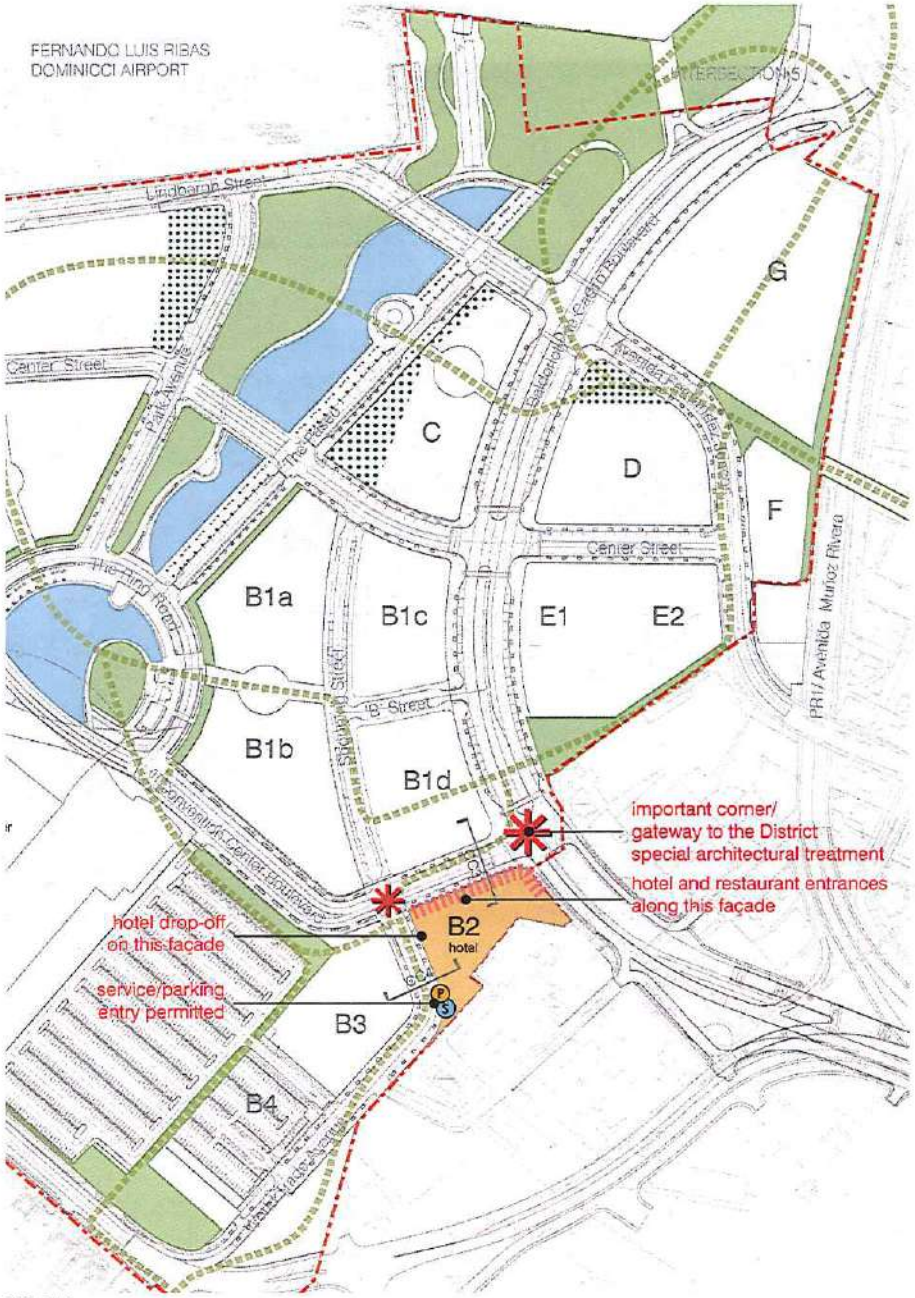


FIG. 5.4.1

FIG. 5.4.1
BLOCK PLAN
Block B2

5.4 BLOCK B2 HOTEL DEVELOPMENT

LOCATION

- Block B2 is bounded by the Convention Center Boulevard to the north and World Trade Avenue to the west and the District boundary south and east.
- Primary Pedestrian Access: Baldorioty de Castro and Convention Center Boulevards
- Vehicular Access: World Trade Avenue

APPROXIMATE DIMENSIONS

- Parcel Size: 4,269.62 SM (45,957.77 SF)
- Height of the base and middle: 18m (60')minimum, 25m (85') maximum
- Maximum Height of Construction: 46m (151') from Mean Sea Level as per FAA regulation; exemptions may be possible within the horizontal surface at 46m (150') with FAA approval.[See Fig. 2.10.1 and Appendix 8].
- FAA airspace restrictions apply due to its proximity to the Fernando L. Ribas Dominicci Airport.
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Hotel, commercial, parking and service

GROSS SQUARE FOOTAGE

- Hotel: 205,558 sf (300 keys)
- Parking: 168 spaces

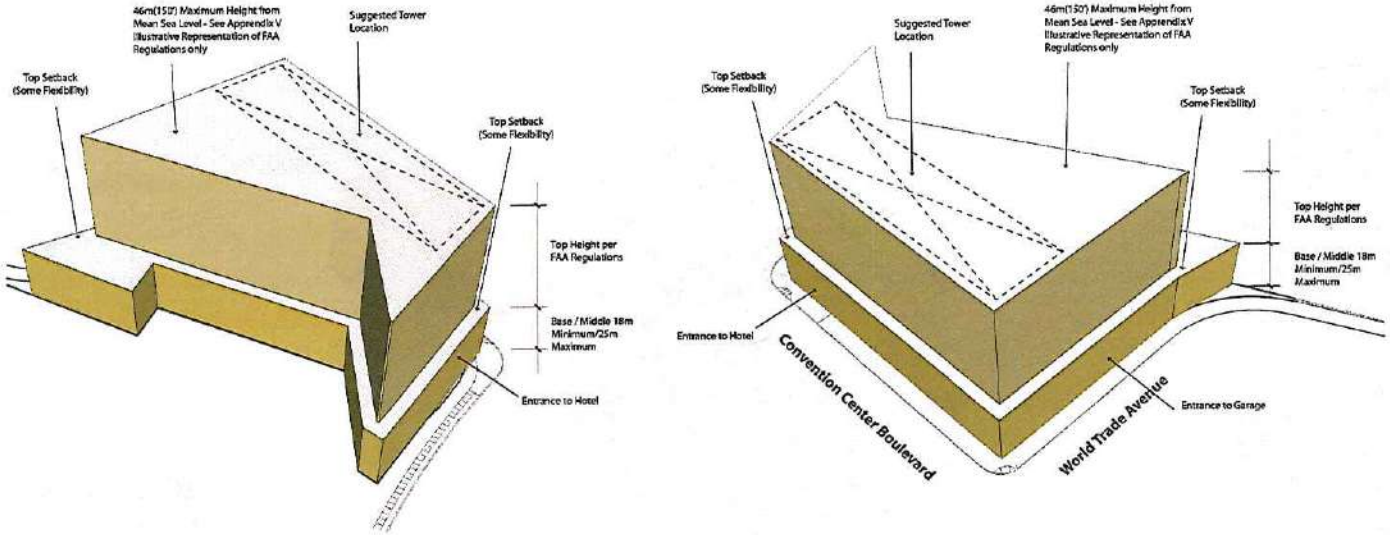


FIG. 5.4.2: BUILDING ENVELOPE FROM THE SOUTH (LEFT), AND FROM THE NORTH (RIGHT)



FIG. 5.4.2
BUILDING ENVELOPES
Block B2

DESIGN OBJECTIVES

A. General

- The hotel on Block B2 is one of three hotels located in the immediate vicinity of the Puerto Rico Convention Center and will serve a select clientele of Convention Center visitors, international business travelers and tourists.
- Parcel B2 is seen as an important gateway building at the convergence of the Baldorioty de Castro and the Convention Center Boulevard. Its east façades is clearly visible from Baldorioty de Castro Boulevard and to visitors as part of the vehicular arrival sequence to the Convention Center.
- Building design at the intersection should signify the movement towards the Convention Center.
- Block B2 Hotel is one of four mid/high-rise buildings that anchor the meeting point of the Convention Center Boulevard, Shopping Street and World Trade Avenue. The design of its frontage will be critical to the articulation of urban character at this important node.
- Block B2, along with Block B3 (office) and the Puerto Rico Convention Center itself, define the southern public edge of the Puerto Rico Convention District. As such, programming and design which gives a lively focus to the streetscape along Convention Center Boulevard and which enhances the experience of arrival at the Convention Center is greatly encouraged.

B. Hotel

- Provide and interesting arrival sequence and approach to the Convention Center, with public uses oriented to the Convention Center Boulevard and the corner at World Trade Avenue.
- The hotel is encouraged to locate its restaurant and café/bar functions on Convention Center and Baldorioty de Castro Boulevards to reinforce the pedestrian character of this edge.

C. Parking and Service

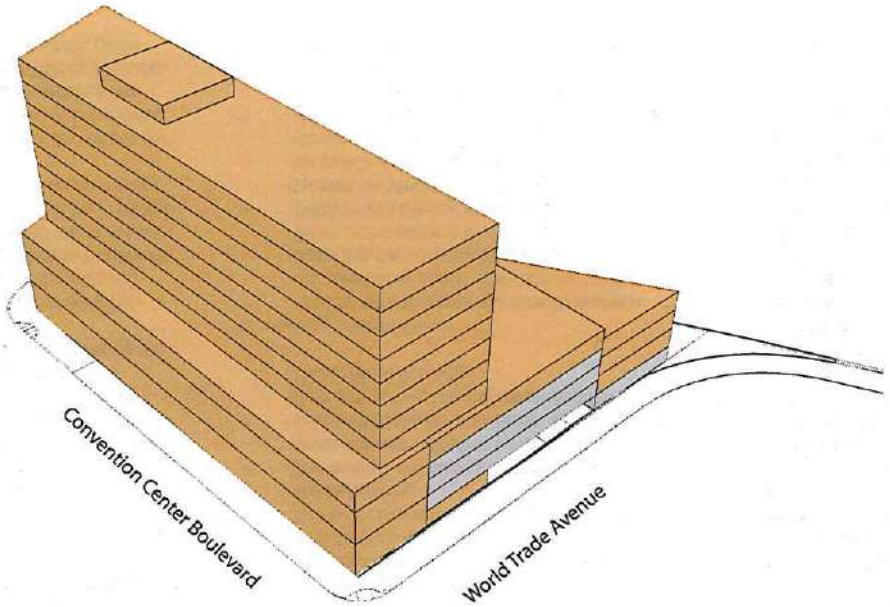
- Provide an integrated solution for access and service of public and support areas, including parking, supply delivery, storage, waste management and security.
- Parking and service entries must be located on World Trade Avenue. No entries for parking and service are allowed from Convention Center Boulevard.
- Conceal parking structures with commercial and office uses, or where necessary with landscape or architectural screening to minimize their visibility from the streets.
- Service and parking entries should be treated with care so as not to compromise the quality of public realm.

MASSING

- Building design should carefully observe the scale and character of both the Baldorioty and Convention Center urban character zones.
- Building design should carefully define the pedestrian scale on the Convention Center Avenue and the World Trade Center Boulevard
- Building massing should have a clearly articulated base and mid-section defining the street-wall with a height between 18m (60') minimum and 25m (85') maximum with towers set above and rising to FAA height limitations.
- Building massing should create a strongly defined street wall on Convention Center Boulevard and as when viewed from Baldorioty de Castro Boulevard.
- Locate towers in the area indicated in the block guideline diagrams. These general locations are in keeping with the overall massing of the District.
- Towers should ideally be set back from the base/middle by at least 3m (10'), however, designers should feel free to propose alternative solutions while still maintaining the spirit of the Design Guidelines.
- Orient the towers in the east-west direction

LEGEND

- Hotel/Entertainment
- Parking



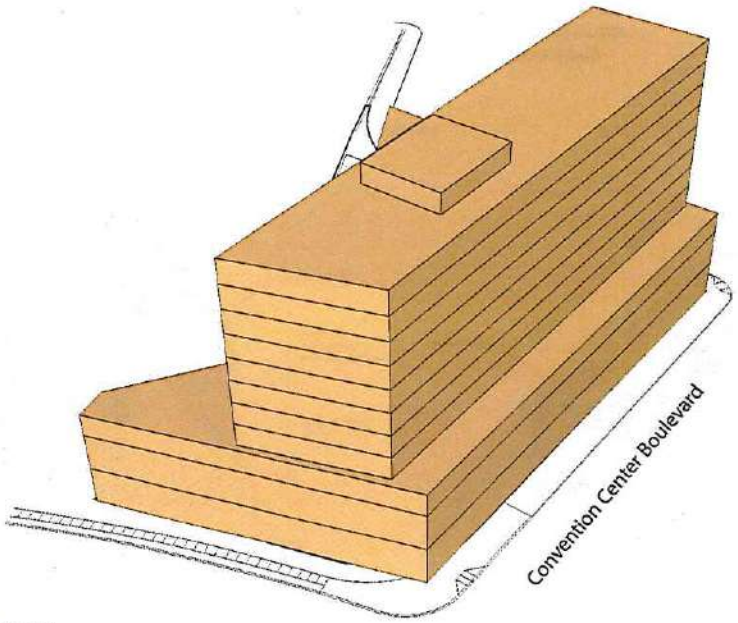


FIG. 5.4.3

FIGS. 5.4.3
USE DIAGRAM
Block B2

to take full advantage of vistas looking north and south, and so as not to block views from existing buildings in Miramar.

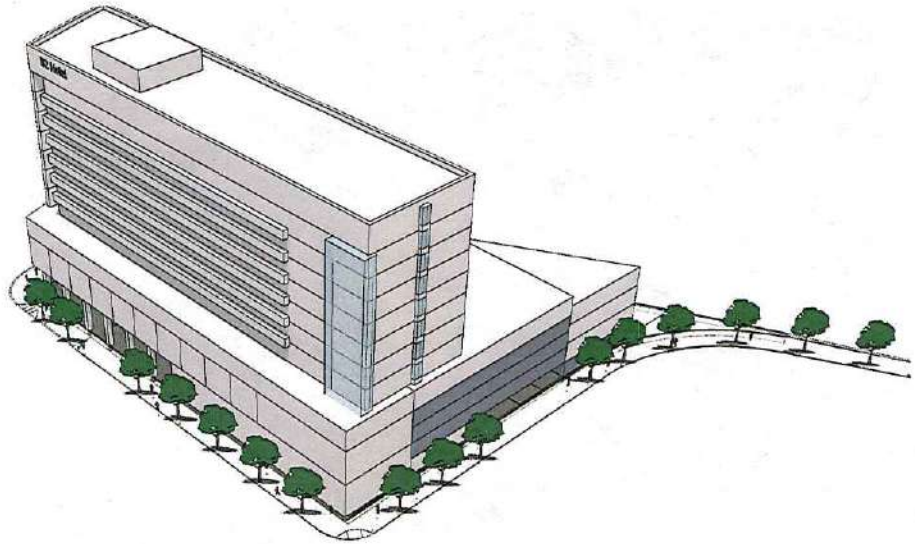
- Towers should be oriented with long facades facing north and south in order to facilitate shading of the structure, and so as not to block the eastern breezes. All openings facing east and west should be shaded with overhangs and fins, or balconies. Elevations facing north and south can be supplemented with wind-walls that pull air into rooms for natural ventilation.
- Building massing should not be monolithic in the direction of the prevailing winds. Apertures in and between masses oriented north-south will allow the cooling winds to penetrate through the structure.

DESIGN CHALLENGES

- The hotel on block B2 forms one half of the 'gateway' expression at the beginning of Convention Center Boulevard and the major vehicular approach to the Puerto Rico Convention Center. This 'gateway' also emphasizes the corporate image of the District. Special attention should be given to the architectural expression to support this concept.
- The office tower will end the view south from the Shopping Street. Care must be taken to resolving this view to emphasize the connection between office and retail activities.
- The size and configuration of the parcel may constrain the disposition of program elements.
- The roadway configuration of Baldorioty de Castro Boulevard beyond Convention Center Boulevard is unknown at this time.

ENGINEERING AND GEOTECHNICAL

- Block B2 will likely be the site of the tallest building in the District, pending FAA approval. The height will produce high base shears for both wind and seismic loads which will require resolution over a fairly small footprint.
- Column loads are expected to range from 2,500 to 2,800 kips for interior columns and from 1,500 to 1,800 kips for exterior columns. Base shears are expected to range from 2,000 to 2,500 kips for seismic and from 3,200 kips to 3,600 kips for wind.



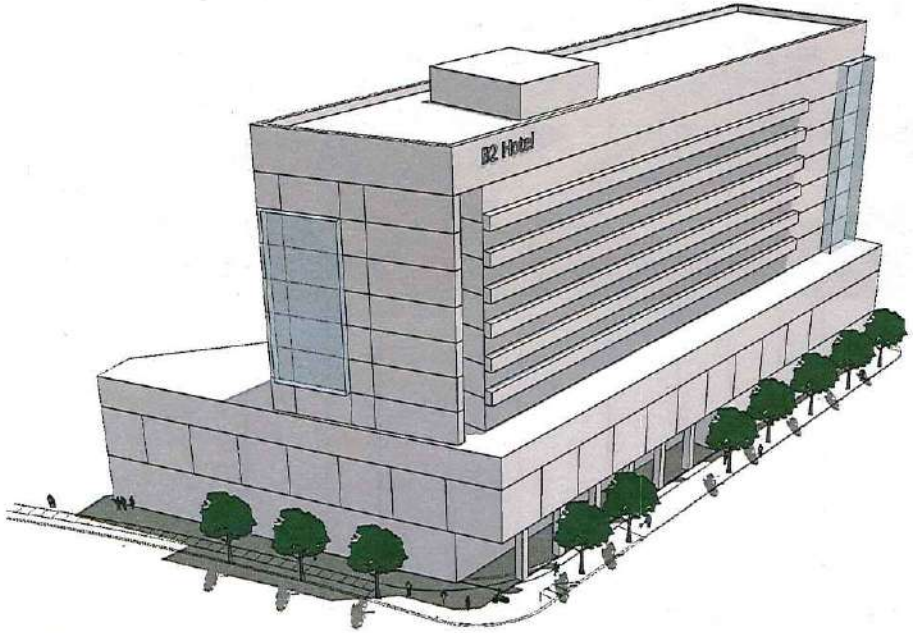


FIG. 5.4.4

FIG. 5.4.4
SAMPLE MASSING
Block B2

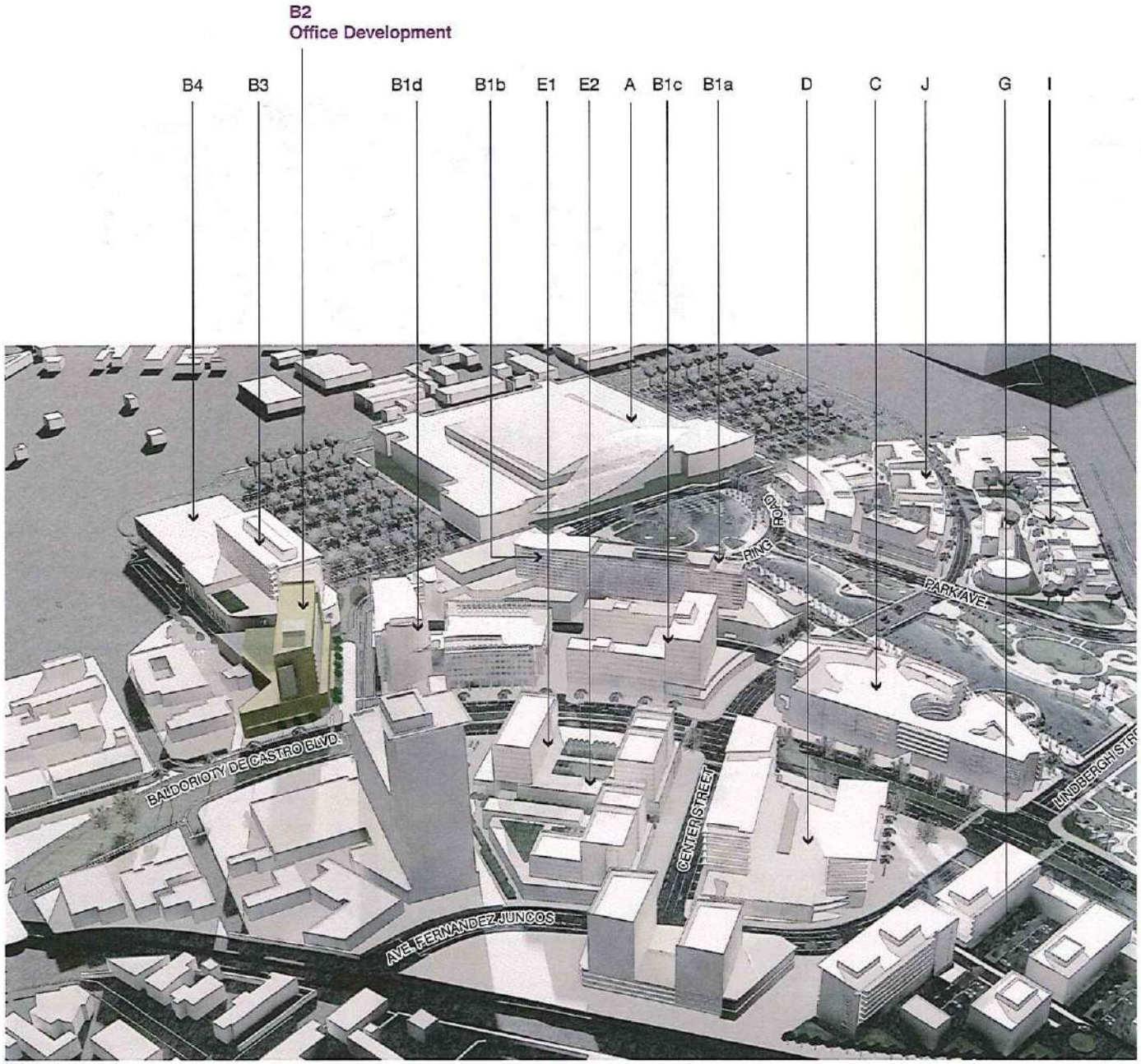


FIG. 5.4.5

FIG. 5.4.5
SAMPLE AXONOMETRIC
Block B2

5.5 BLOCK B3 OFFICE

LOCATION

- Block B3 is located at the intersection of Convention Center Boulevard and World Trade Avenue. It is bound by World Trade Avenue to the northeast, east and south, and abuts Block B4 (Parking) to the southwest and the Convention Center parking lot to the northwest.
- Primary pedestrian access: Convention Center Boulevard and World Trade Avenue.
- Vehicular access: From World Trade Avenue only. No entries for parking and service are allowed from Convention Center Boulevard.

APPROXIMATE DIMENSIONS

- Parcel size: 6,273.69 SM (67,529.48 SF)
- Height of the base and middle: 12m (40') minimum, 18m (60') maximum
- Maximum height of construction: : Block E falls within the FAA regulated height envelope, with construction height limited to 46m (151') from Mean Sea Level [See Fig. 2.10.1 and Appendix 8].
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Office, commercial, parking and service.

GROSS SQUARE FOOTAGE

- Office: 200,000 sf
- Parking: 711 spaces

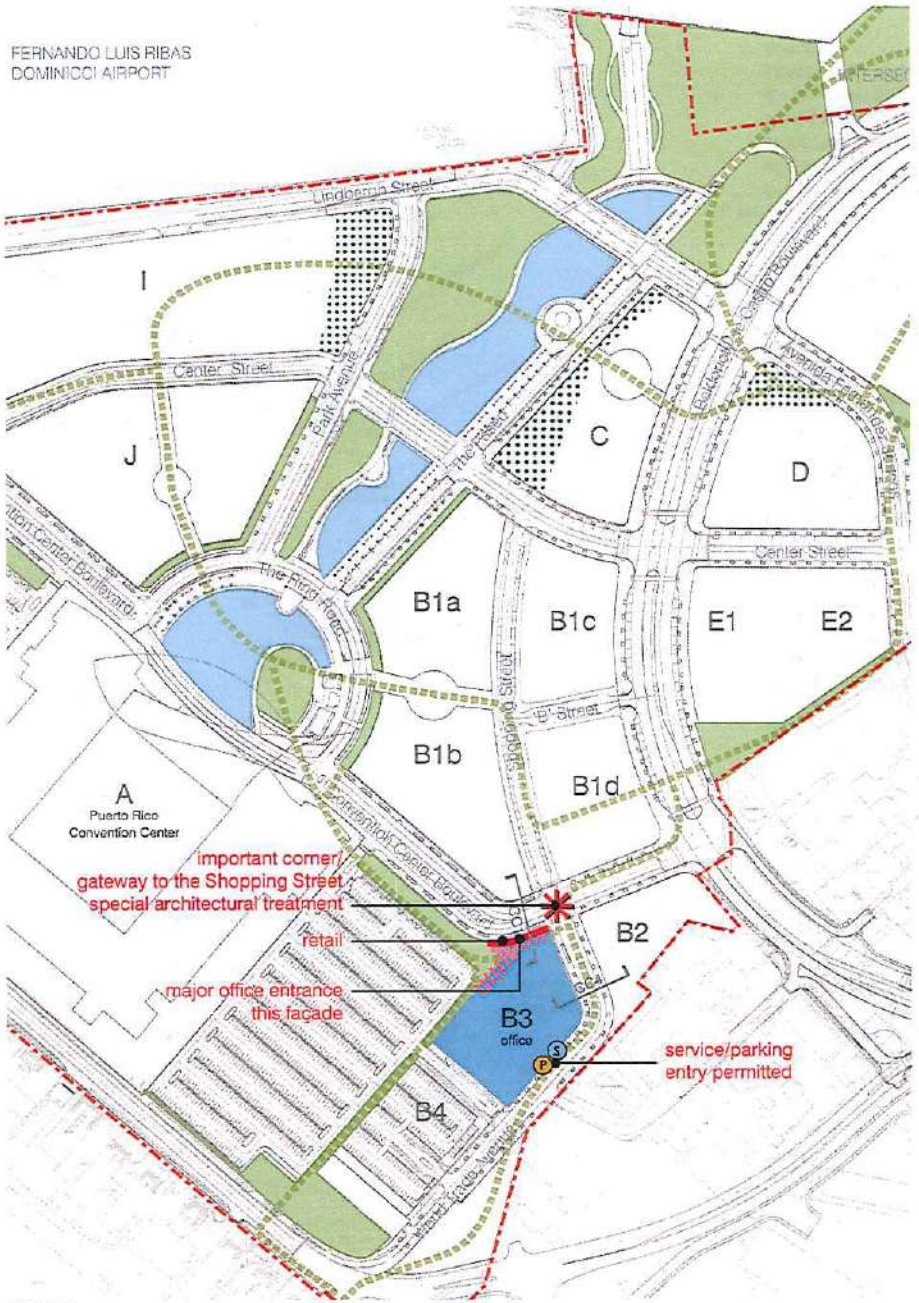


FIG. 5.5.1

LEGEND

- Office
- Commercial
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary

FIG. 5.5.1
BLOCK PLAN
Block B3



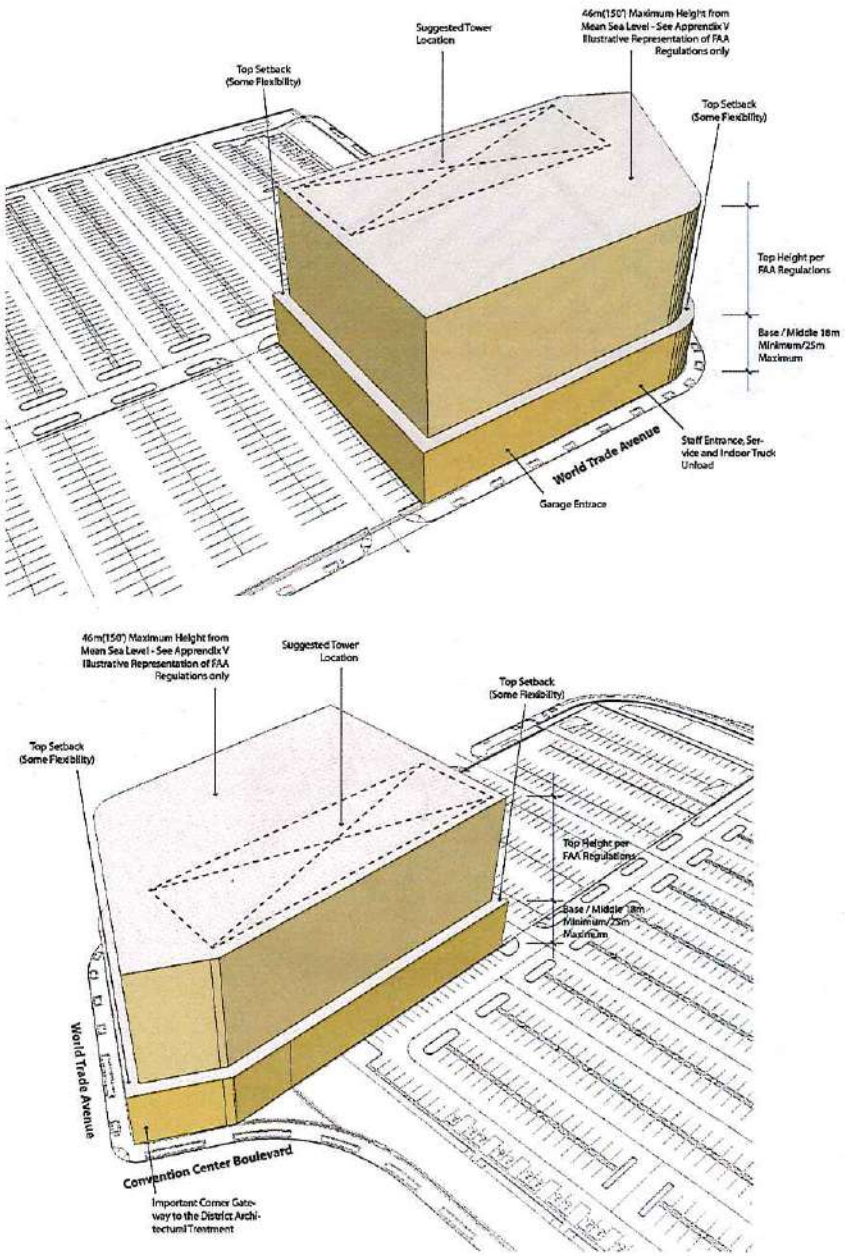


FIG. 5.5.2. BUILDING ENVELOPE FROM THE SOUTH (TOP), AND THE NORTH (BOTTOM)

FIG. 5.5.2
BUILDING ENVELOPES
Block B3

DESIGN OBJECTIVES

A. General

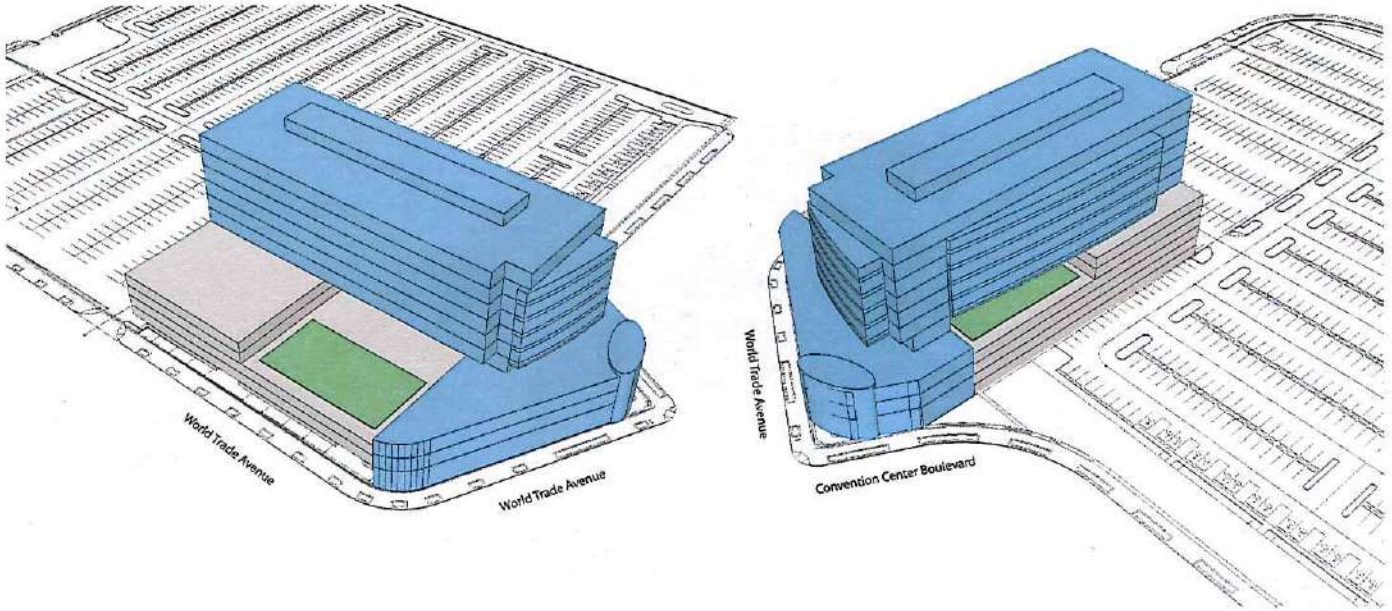
- Block B3 is a signature, high-rise office building situated prominently to the east of the Puerto Rico Convention Center with three very public façades. Its west and north façades are clearly visible to visitors of the Convention Center and the Crescent Park, and form part of the vehicular arrival sequence to the Convention Center. Its east/northeast façades mark the terminus of the pedestrian-oriented Shopping Street.
- Block B3 Office building is one of four mid/high-rise buildings that anchor the meeting point of the Convention Center Boulevard, Shopping Street and World Trade Avenue. The design of its frontage will be critical to the articulation of urban character at this important node.
- Block B3, along with Block B2 (hotel) and the Puerto Rico Convention Center itself, define the southern public edge of the Puerto Rico Convention District. As such, programming and design which gives a lively focus to the streetscape along Convention Center Boulevard and which enhances the experience of arrival at the Convention Center is greatly encouraged.

B. Office

- Office use is primarily headquarters offices.
- Locate major office entrances on Convention Center Boulevard.
- Office tower should contribute to the skyline presence of the District when seen from a distance.
- Provide a pleasant, landscaped street edge along the east of the Convention Center parking lot and along World Trade Avenue for pedestrians walking from the Block B4 parking structure to the Shopping Street and the Convention Center.

C. Parking and Service

- Provide an integrated solution for access and service of both public and support areas, including parking, supply delivery, storage, waste management and security.
- An on-street drop-off, with valet parking service may be located on World Trade Avenue.



LEGEND

- Office
- Parking
- Open Green Space

FIG. 5.5.3

FIG. 5.5.3
USE DIAGRAM
Block B3

- Service entries may be located on World Trade Avenue. Any service entrances located on World Trade Avenue should be shielded from pedestrian view. No service entrance may face directly towards the Puerto Rico Convention Center.

MASSING

- Building design should carefully define the pedestrian scale on the all open sides of the block and maintain a strong street edge.
- The building should maintain a strong street wall along the Convention Center Boulevard and the World Trade Avenue, as specified in the streetscape sections (See Fig. 4.1.2. and 4.1.4.) and sample massing).
- Building massing should have a clearly articulated base and mid-section defining the street-wall with a height between 12m (40') minimum and 18m (60') maximum with a minimum setback of 3m for towers above rising to FAA height limitations.
- The building should respect the scale and the importance of the Convention Center. Its massing should compliment the Convention Center and not overshadow it.
- Towers should be oriented with long facades facing north and south in order to facilitate shading of the structure, and so as not to block the eastern breezes. All openings facing east and west should be shaded with overhangs and fins, or balconies. Elevations facing north and south can be supplemented with wind-walls that pull air into rooms for natural ventilation.
- Building massing should not be monolithic in the direction of the prevailing winds. Apertures in and between masses oriented north-south will allow the cooling winds to penetrate through the structure.

DESIGN CHALLENGES

- Owing to the location of District parks, the airport and FAA height restriction on Blocks I and J, the hotel on Block B3 has privileged views of the Crescent Park and the San Antonio Canal to the northwest. The Block B3 office should take advantage of the views without creating long spans of east and west facades that are difficult to shade. A north-south orientation is best for sun avoidance. The design should take advantage of the cooling effect of the trade winds originating from the east.
- Tall massing at this location will be in the foreground of views directed at the District from Miramar (east), neighborhoods to the south and southeast, and highest points of Old San Juan.
- Block B3 will be immediately adjacent to the Convention Center building after its planned future expansion onto the surface parking lots to the east.





FIG. 5.5.4
SAMPLE MASSING
Block B3

FIG. 5.5.4

- Active port facilities located behind the Puerto Rico Convention Center are in view from Block B3.
- The tower on Block B3 should take advantage of the views without creating long east and west facades that are difficult to shade. A north-south orientation is best for sun avoidance. The design should take advantage of the cooling effect of the trade winds originating from the eastern directions.
- Innovation in architectural and sustainable design is encouraged, especially demonstrating an understanding of local climate, the interaction between interior and exterior space, orientation, pedestrian comfort, and the image of a culturally grounded yet contemporary and sophisticated Puerto Rico.
- The development should meet LEED Silver rating standards or better.

ENGINEERING AND GEOTECHNICAL

- The important structural issues for Block B3 are expected to be large base shears for both wind and seismic loads and the differing seismic response of the low-rise and mid or high-rise portions of the building. The high base shears will be a result of the building height, the size of the base and the wind exposure of towers.
- Column loads are expected to range from 1,600 to 2,000 kips for interior columns and from 1,000 to 1,300 kips for exterior columns. Base shears are expected to range from 2,500 to 3,600 kips for seismic and from 3,200 kips to 3,600 kips for wind.
- Implementation of several different types of structural systems may be necessary to meet the specific requirements of different program spaces within the development.

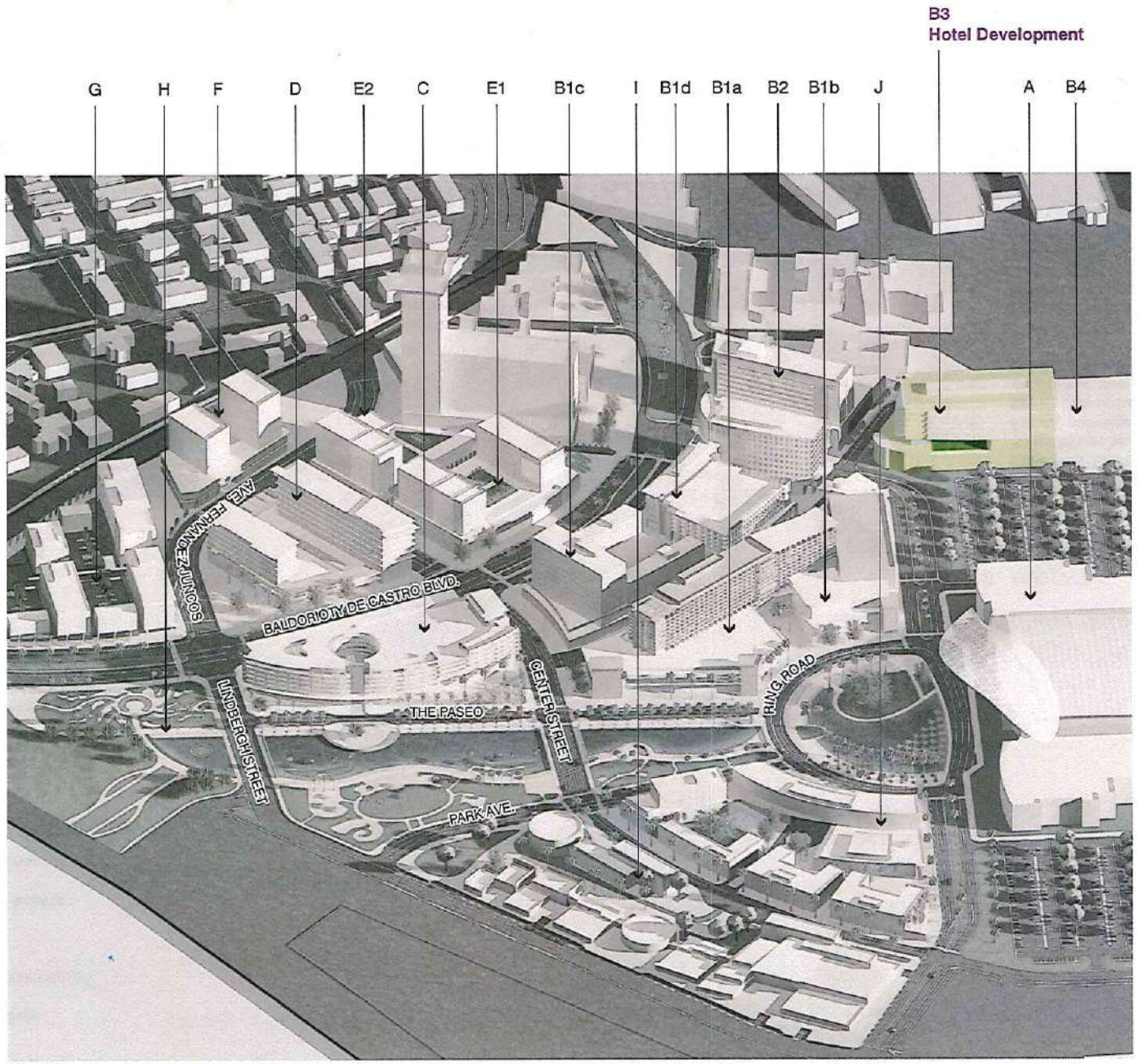


FIG. 5.5.5

FIG. 5.5.5
SAMPLE AXONOMETRTIC
Block B3

LEGEND

- Parking
- Commercial
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary

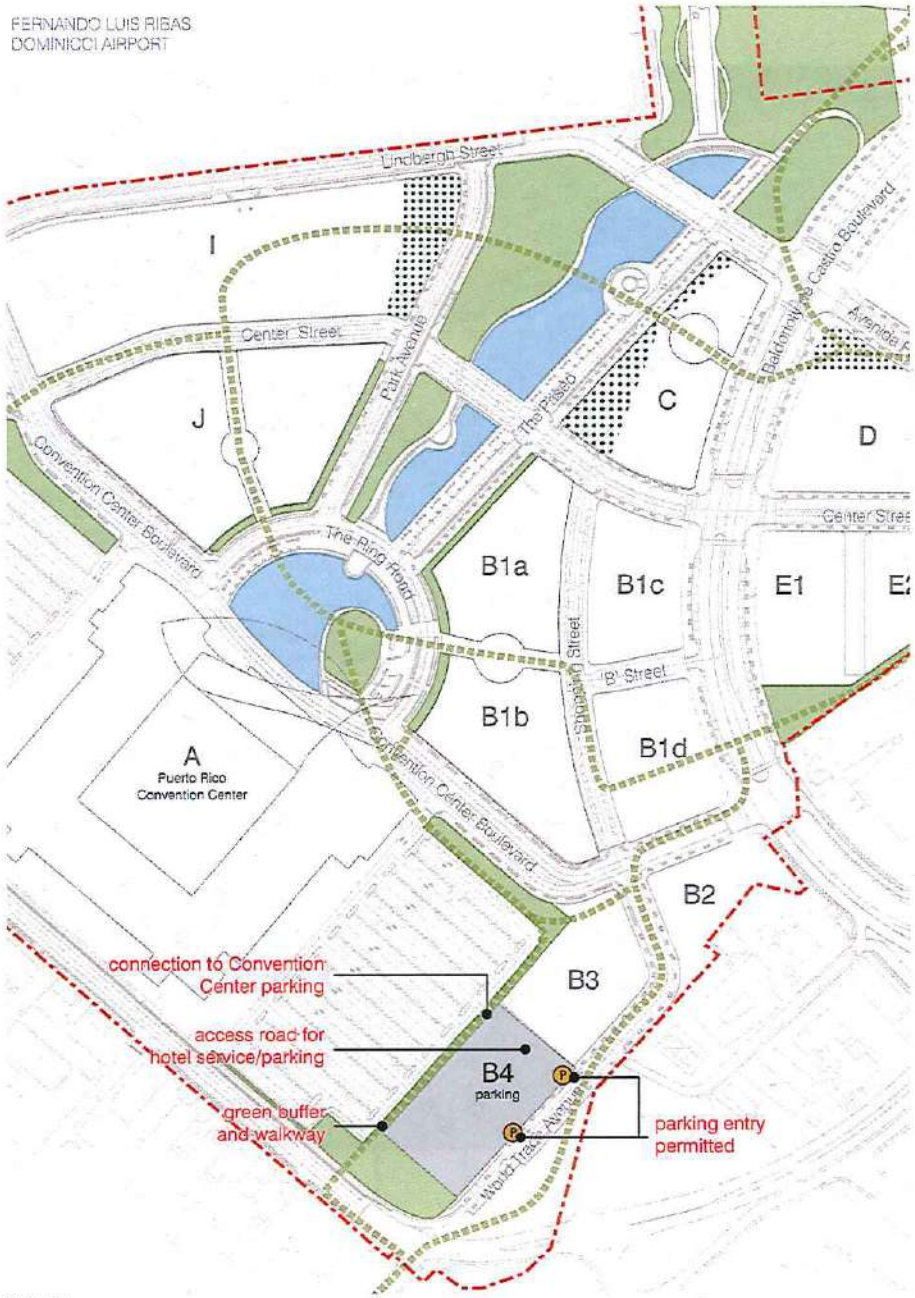


FIG. 5.6.1

FIG. 5.6.1
BLOCK PLAN
Block B4

5.6 BLOCK B4 PARKING

LOCATION

- Block B4 is located on World Trade Avenue, adjoined to the northwest by the Puerto Rico Convention Center east parking lot, by Block B3 (hotel/commercial) to the northeast.
- Primary pedestrian access: Convention Center parking lot and World Trade Avenue.
- Vehicular access: From World Trade Avenue and the Convention Center east parking lot.

APPROXIMATE DIMENSIONS

- Parcel size: 6,368.78 SM (68,553 SF)
- Maximum height of construction: Block B4 falls within the FAA regulated height envelope, with construction height limited to 46m (151') from Mean Sea Level [See Fig. 2.10.1 and Appendix 8].

USES

Parking

GROSS SQUARE FOOTAGE

- Parking: 378,300 SF; 1,439 spaces
- Parking levels: 6 levels max. above grade; rooftop parking with appropriate shading and visual shielding is allowed

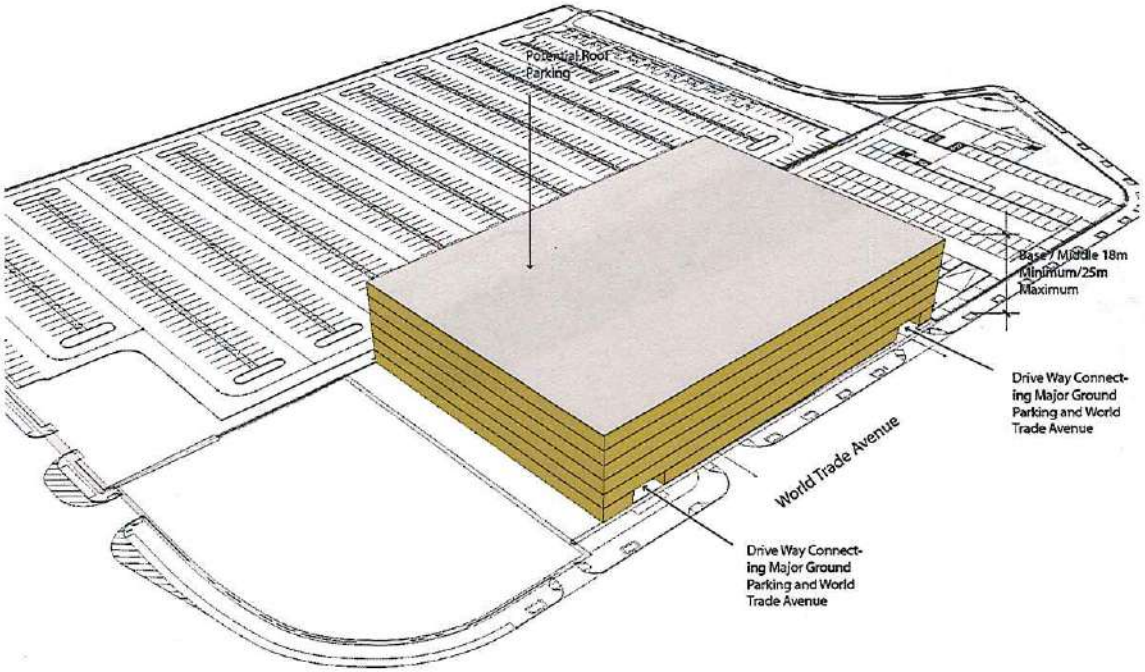


FIG. 5.6.2: BUILDING ENVELOPE FROM THE SOUTH



FIG. 5.6.2
BUILDING ENVELOPES
Block B4

DESIGN OBJECTIVES

A. General

- Block B4 will meet parking needs for the entire Puerto Rico Convention District, and especially accommodate the Puerto Rico Convention Center, the Shopping Street and the Block B3 hotel.
- Particular attention should be given to the design of pedestrian access to and from the parking structure and the major locations of District activity.

DESIGN CHALLENGES

- The northwest façade of the parking structure, which adjoins the Convention Center parking lot, will be visible to the visitors to the Convention Center and Crescent Park. This façade and the southeast façade on World Trade Center must both conceal parked vehicles and carefully define pedestrian scale and experience.
- The parking structure will replace about 135 surface parking spaces which were previously part of the Puerto Rico Convention Center east parking lot.
- The parking structure must allow continued access to the Convention Center east parking lot from World Trade Avenue.
- Provide a pleasant, landscaped space or edge along the Convention Center east parking lot and along World Trade Avenue for pedestrians walking from the Block B4 parking structure to the Shopping Street and the Convention Center.
- Innovation in architectural and sustainable design is encouraged, especially demonstrating an understanding of local climate, the interaction between interior and exterior space, orientation, pedestrian comfort, and the image of a culturally grounded yet contemporary and sophisticated Puerto Rico.
- The development should meet LEED Silver rating standards or better.

MASSING

- Simple and discreet massing for this block is encouraged.
- Incorporate architectural or landscape screening elements which gracefully and elegantly minimize the bulk of the structure.

ENGINEERING AND GEOTECHNICAL

- The important structural issues for Block B4 are expected to be large base shears for both wind and seismic loads.
- Column loads are expected to range from 1,600 to 2,000 kips for interior columns and from 1,000 to 1,300 kips for exterior columns. Base shears are expected to range from 2,500 to 3,600 kips for seismic and from 3,200 kips to 3,600 kips for wind.

LEGEND

Parking

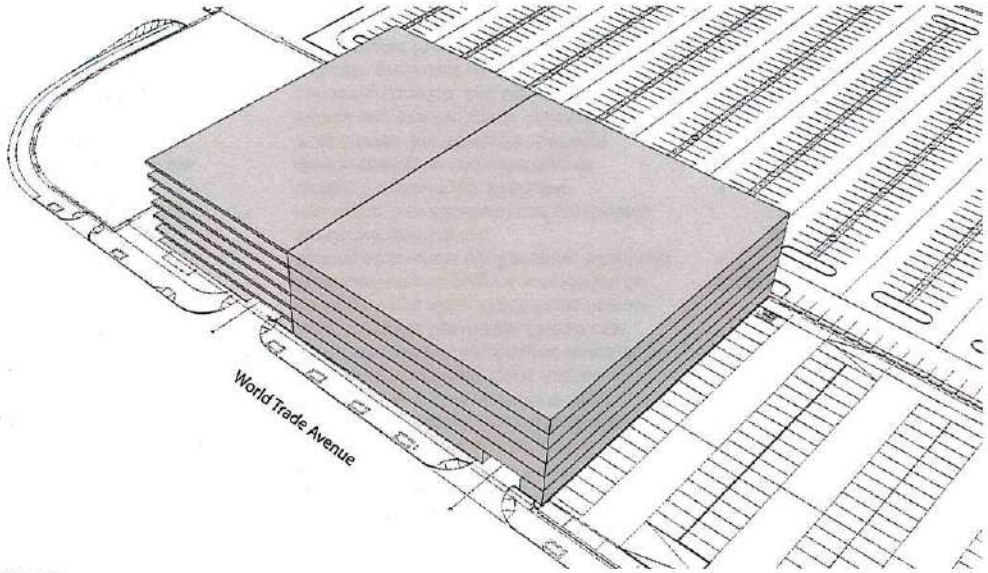


FIG. 5.6.3

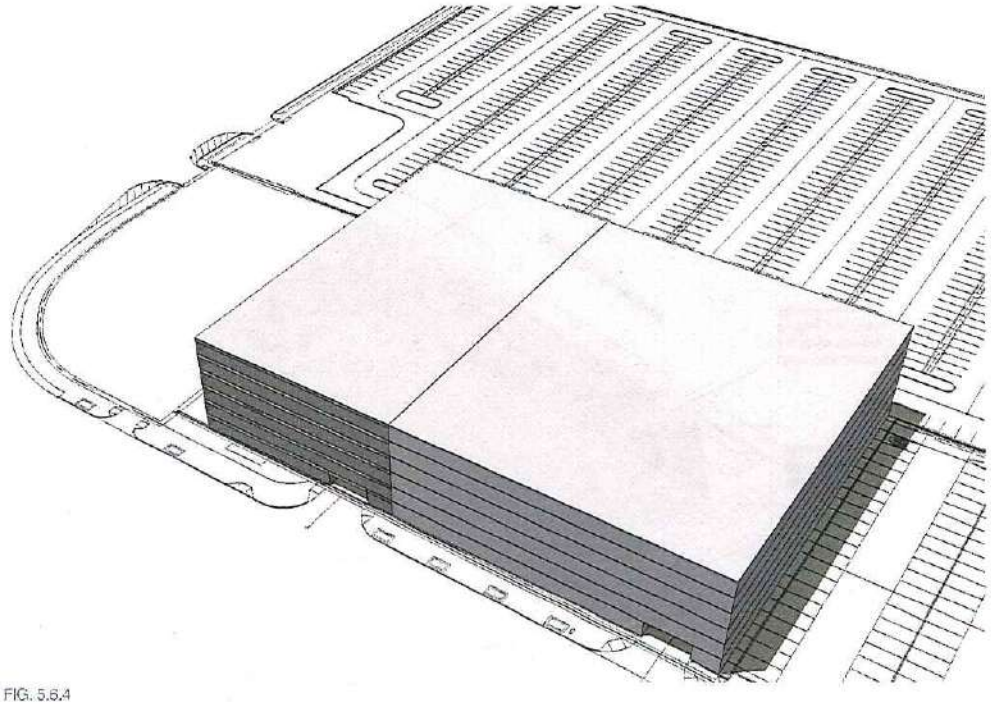


FIG. 5.6.4

FIG. 5.6.3/5.6.4
USE DIAGRAM/SAMPLE MASSING
Block B4

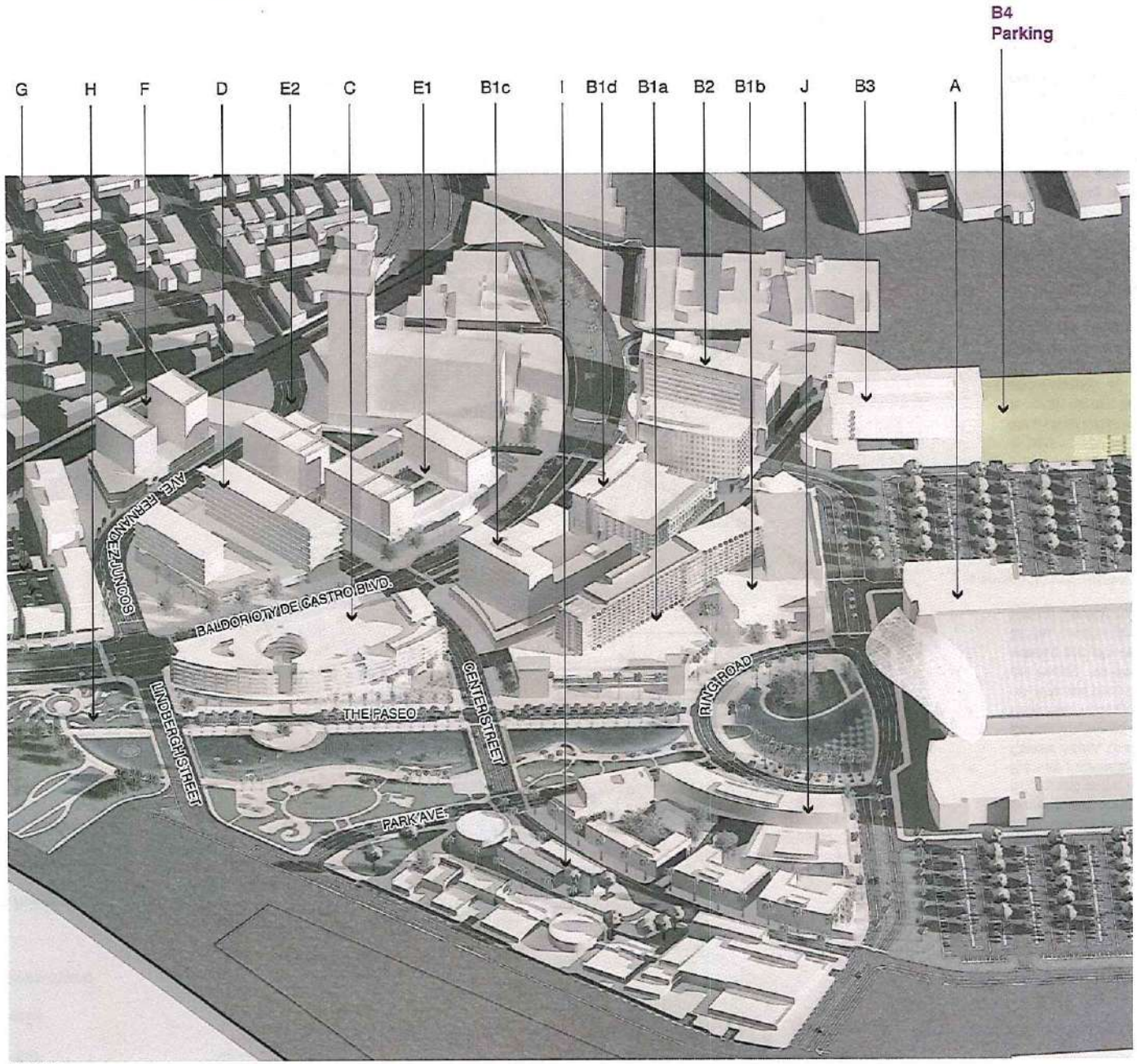


FIG. 5.6.5

FIG. 5.6.5
SAMPLE AXONOMETRIC
Block B4

LEGEND

- Residential
- Commercial
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary

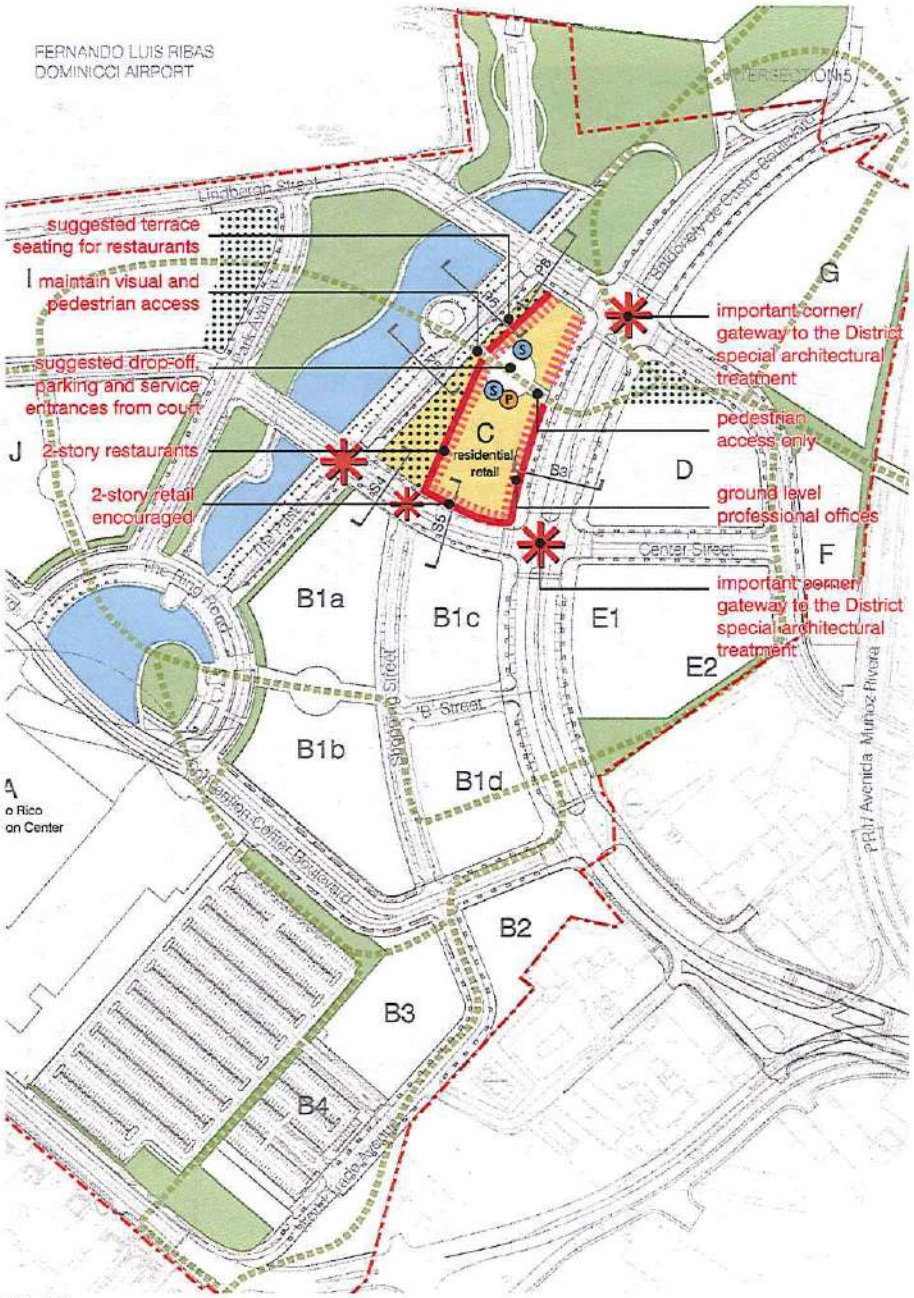


FIG. 5.7.1

FIG. 5.7.1
BLOCK PLAN
Block C

5.7 BLOCK C RESIDENTIAL DEVELOPMENT

LOCATION

- Block C is bounded by the Paseo to the west, Center Street to the south, Lindbergh Street to the north and Baldorioty de Castro Boulevard to the east.
- Primary Pedestrian Access: The Paseo, Center Street, Lindbergh Street, Baldorioty de Castro Boulevard and the internal drop-off.
- Vehicular Access: From the internal drop-off. Internal drop-off shall be entered from the Paseo. No entries for parking and service are allowed from the Paseo, Center Street, Lindbergh Street, or Baldorioty de Castro Boulevard.

APPROXIMATE DIMENSIONS

- Parcel Size: 9,969.47 SM (107,310.49 SF)
- Height of the base and middle: 18m (60') minimum, 25m (85') maximum
- Maximum Height of Construction: : Block C falls within the FAA regulated height envelope, with construction height limited to between 22m (72')and 42m (137') from Mean Sea Level in a 7:1 slope roughly north to south across the block [See Fig. 2.10.1 and Appendix 8].
- FAA airspace restrictions apply due to its proximity to the Fernando L. Ribas Dominicci Airport.
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Residential, parking and service
Gross Square Footage:

- Residential: 200,358 SF (90 UVBs)
- Commercial: 65,046 SF
- Office: 17,035 SF (Optional)
- Parking: 380 spaces minimum
- Parking Levels: 4 levels maximum

DESIGN OBJECTIVES

A. General

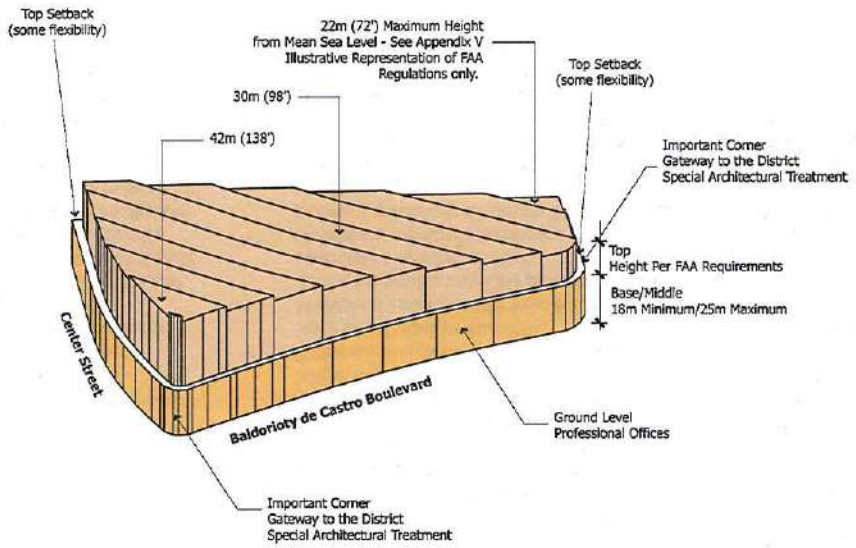
- Parcel C is seen as a signature residential development site at the convergence of the Paseo and the Baldorioty de Castro.
- Proceeding in tandem with the mixed-use development including Convention Center Hotel on Parcels B1a and B1b, the development of Parcel C completes an important sequence along the western edge of the Paseo.
- Framed by prominent open spaces and highly visible with exceptional views, this building is strategically positioned to take full advantage of the District public realm. The architecture should take full advantage of this special site with generous balconies and terraces.
- It will also continue grade level commercial along the Paseo, framing the triangular plaza at the end of the Shopping Street.

B. Residential

- Residential buildings should demonstrate a sensitivity to the nuances of local architecture adapted to climate and setting.
- Building design should take full advantage of the views to the Paseo, San Antonio Canal and Miramar.
- A patio or courtyard typology is encouraged to provide internal open space and natural ventilation and light (including above grade patios where appropriate) and a continuous framing of the street.
- Multiple balconies are encouraged to enrich the streetscape and offer a transition from the public realm to private residential space.

C. Commercial Use

- Commercial frontage along the Paseo should emphasize restaurant use with opportunities for use of outdoor terraces.
- All commercial establishments should be high quality specialty stores serving a variety of users. The commercial strategy should be integrated with the emerging public nature of the District as a draw for visitors and locals and should anticipate additional and complementary commercial across Center Street.
- Restaurants along the Plaza and Paseo are encouraged to occupy two floors or ground floor with mezzanine to reinforce the Plaza edge and take advantage of views to the Paseo Park.



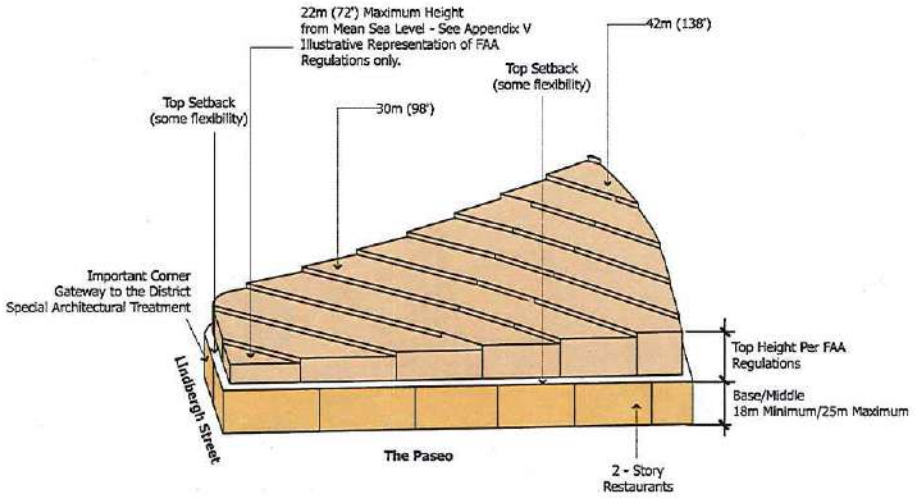


FIG. 5.7.2: BUILDING ENVELOPE FROM THE SOUTH (TOP), AND THE NORTH (BOTTOM)



FIG. 5.7.2
BUILDING ENVELOPES
Block C

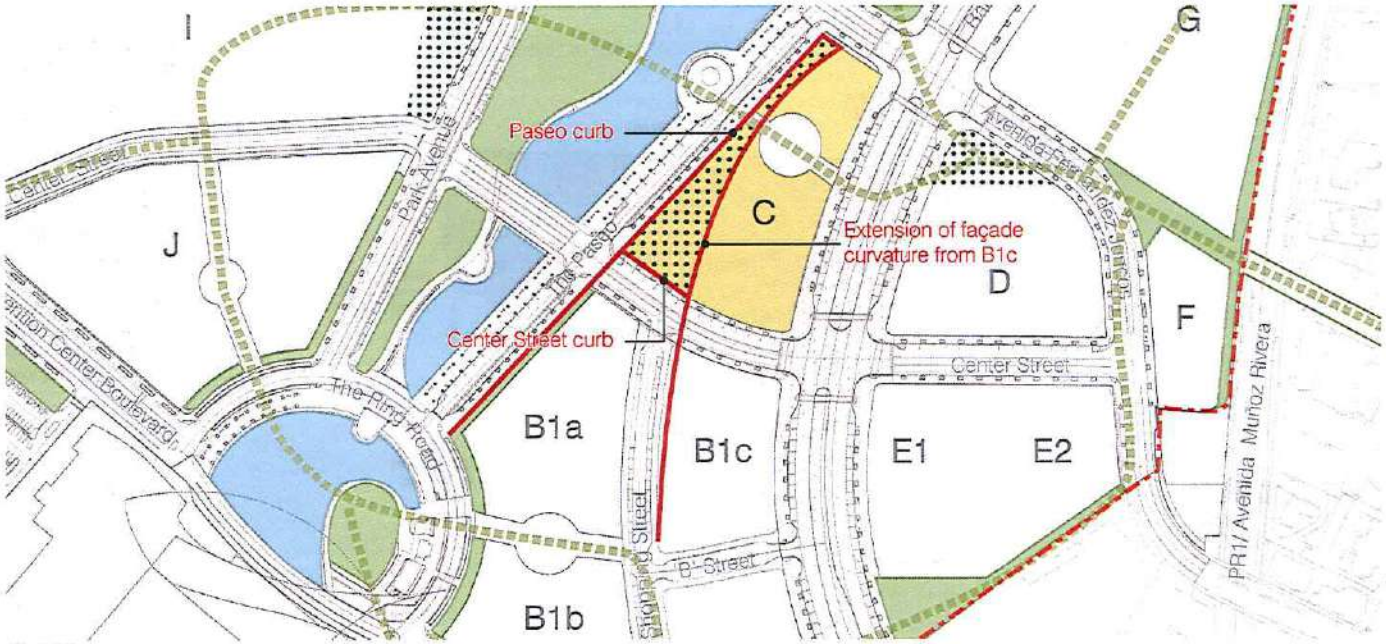


FIG. 5.7.3

FIG. 5.7.3
PLAZA DEFINITION
Block C

- Commercial uses on Center Street can include both restaurants and commercial up to a maximum of 25,000 sf per establishment.
- Emphasize commercial at the corner of Center Street and Baldorioty de Castro Boulevard to create an inviting 'gateway' entry to the commercial/commercial core of the District.

D. Parking and Service

- Provide an integrated solution for access and service of public and support areas, including parking, employee access, supply delivery, storage, waste management and security.
- Parking and service entries must be located on the internal drop-off. Internal drop-off shall be entered from the Paseo. No entries for parking and service are allowed directly from the Paseo, Center Street, Lindbergh Street, or Baldorioty de Castro Boulevard.
- Conceal above-grade parking structures with residential, commercial or office uses, or where necessary with landscape or architectural screening to minimize their visibility from the streets.
- Service and parking entries should be treated with care so as not to compromise the quality of public realm.

MASSING

- Building design should carefully define the pedestrian scale of all sides of the block.
- Building massing should have a clearly articulated base and mid-section defining the street-wall with a height between 18m (60') minimum and 25m (85') maximum with towers set above and rising to FAA height limitations.
- Buildings should maintain a strong street edge on all sides of the block.
- Maintain a visual corridor from Baldorioty de Castro Boulevard to the protected Ficus specimen in the Paseo Park.
- Maintain a mid-block pedestrian connection between Baldorioty de Castro Boulevard and the Paseo.
- Extensive balconies and terraces are encouraged along with creation of partially protected and shaded spaces to take advantage of the climate and views.
- Building design should carefully define the scale of the Plaza and the Paseo.
- Corner articulation at the intersection of Baldorioty and Center Street should emphasize commercial presence in the District.
- Architectural treatment at the Lindbergh Street facade is extremely important as it is prominently featured when arriving at the District from Intersection 5.

THE PLAZA

- The Plaza is a critical link between the Shopping Street and commercial core of the District and the ceremonial and recreational axis of the Paseo and Paseo Park. Creating an attractive, landscaped space with a well-proportioned built edge with lively and successful uses is a critically important design goal.
- The design of the plaza should blend with the overall sensibility and materiality of the District public realm.
- The design of the Plaza should take on the human qualities of the plazas of old San Juan but not mimic their design with historicist treatments. The design of the plaza is meant to be simple, with high quality detailing and materials, but not necessarily a

strong independent design statement.

- Physical boundaries of the plaza are as follows: North: The entryway to the drop-off South: Center Street curb; East: The building line which is an extension of the building facade alignment from B1c and B1d Blocks; West: The Paseo curb.
- Furniture and seating are important especially in association with adjacent restaurant and café uses
- Shaded areas are highly desirable
- Nighttime appearance and lighting are important considerations
- A water element such as a fountain and/or a sculpture/art work is recommended but not required.

DESIGN CHALLENGES

- Block C forms one half of the 'gateway' expression at the intersection of Center Street and Baldorioty de Castro Boulevard, the major vehicular approach to the commercial core of the District. This 'gateway' should emphasize the commercial presence in the District. Special attention should be given to an architectural expression which emphasizes this arrival sequence.
- Sightlines to the Center Street Plaza, the start of the Shopping Street, and the Paseo Park should be evident from the intersection at Baldorioty de Castro Boulevard.
- The transition from the highly public Plaza to the private territory of the residential entrances should be carefully addressed.
- Entrances to commercial, offices and parking should be articulated to meet the needs of each element in this mixed-use environment, while retaining the distinct character of the Paseo and Baldorioty urban character zones.
- The proposal should demonstrate how a LEED Silver rating can be achieved for Parcel C development.
- Engineering and Geotechnical
- No significant structural issues are expected on Block C other than those noted in Section 2.
- Column loads are expected to range from 500 to 700 kips for interior columns and from

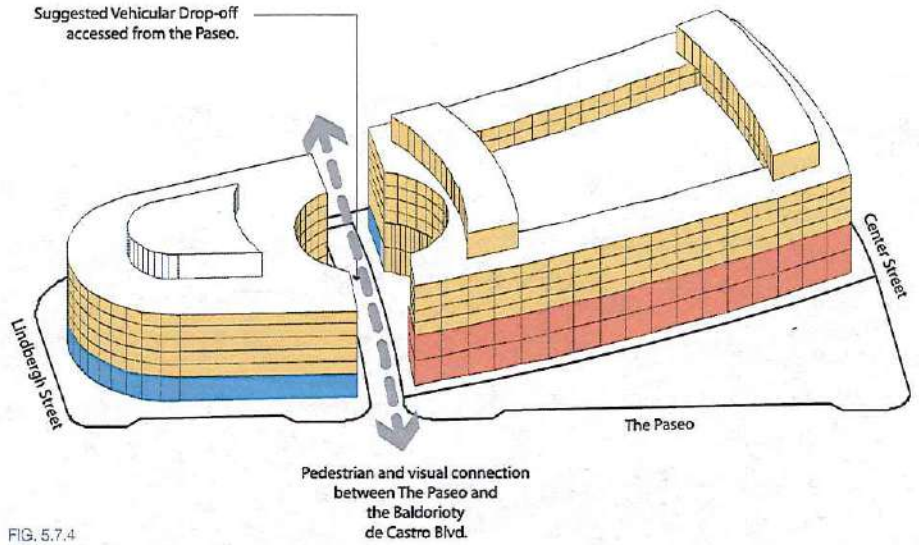


FIG. 5.7.4

LEGEND

- Residential
- Office
- Commercial

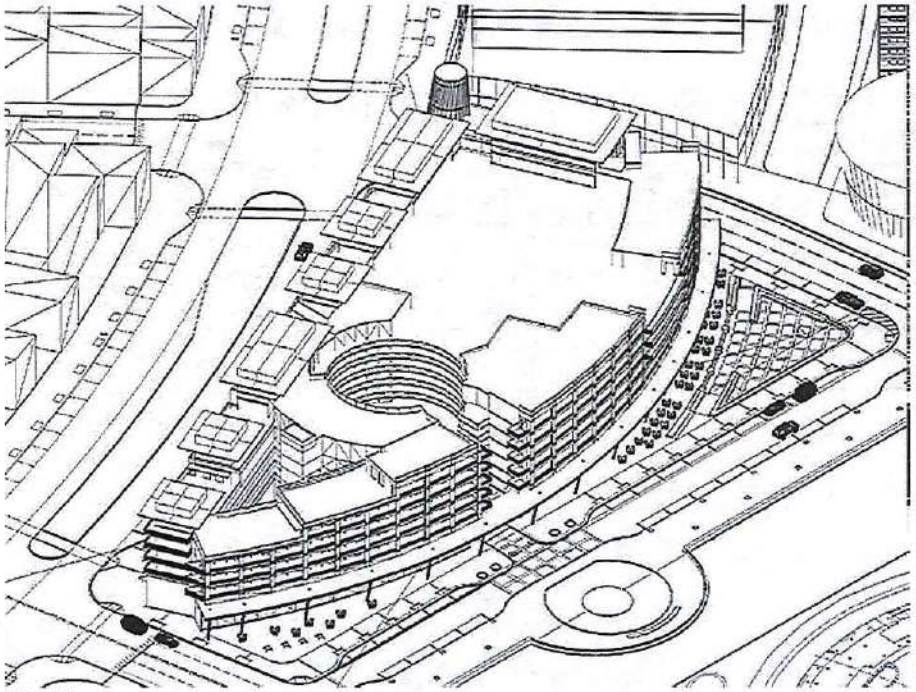


FIG. 5.7.4

FIGS. 5.7.4/5.7.5
USE DIAGRAM/ PROPOSED MASSING
Block C



FIG. 5.7.6



FIG. 5.7.7

FIGS. 5.7.6/5.7.7
ILLUSTRATIVE VIEWS
Block C

C
Mixed Residential / Office Development

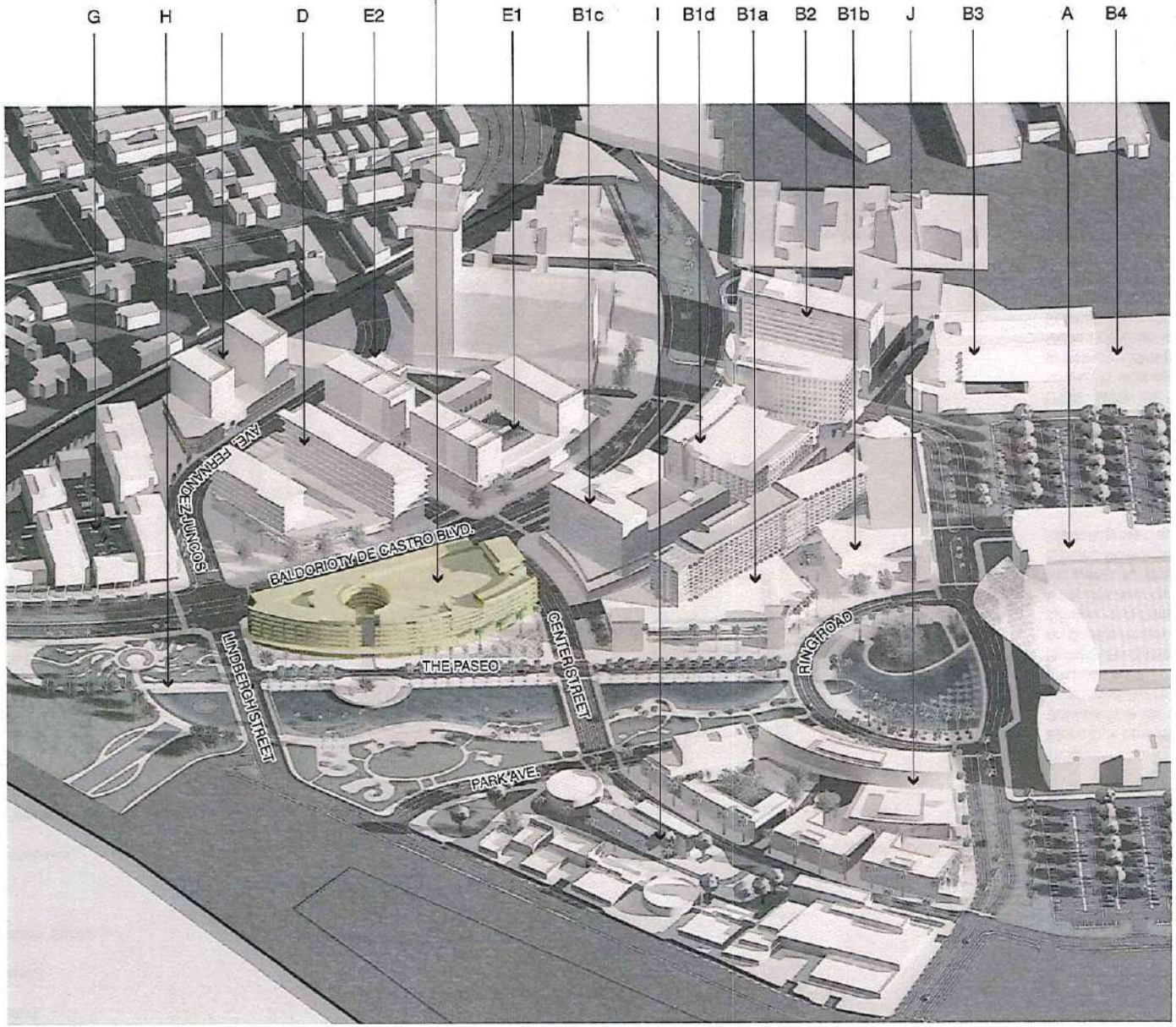


FIG. 5.7.8

FIG. 5.7.8
SAMPLE AXONOMETRIC
Block C

LEGEND

- Residential
- Commercial
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary

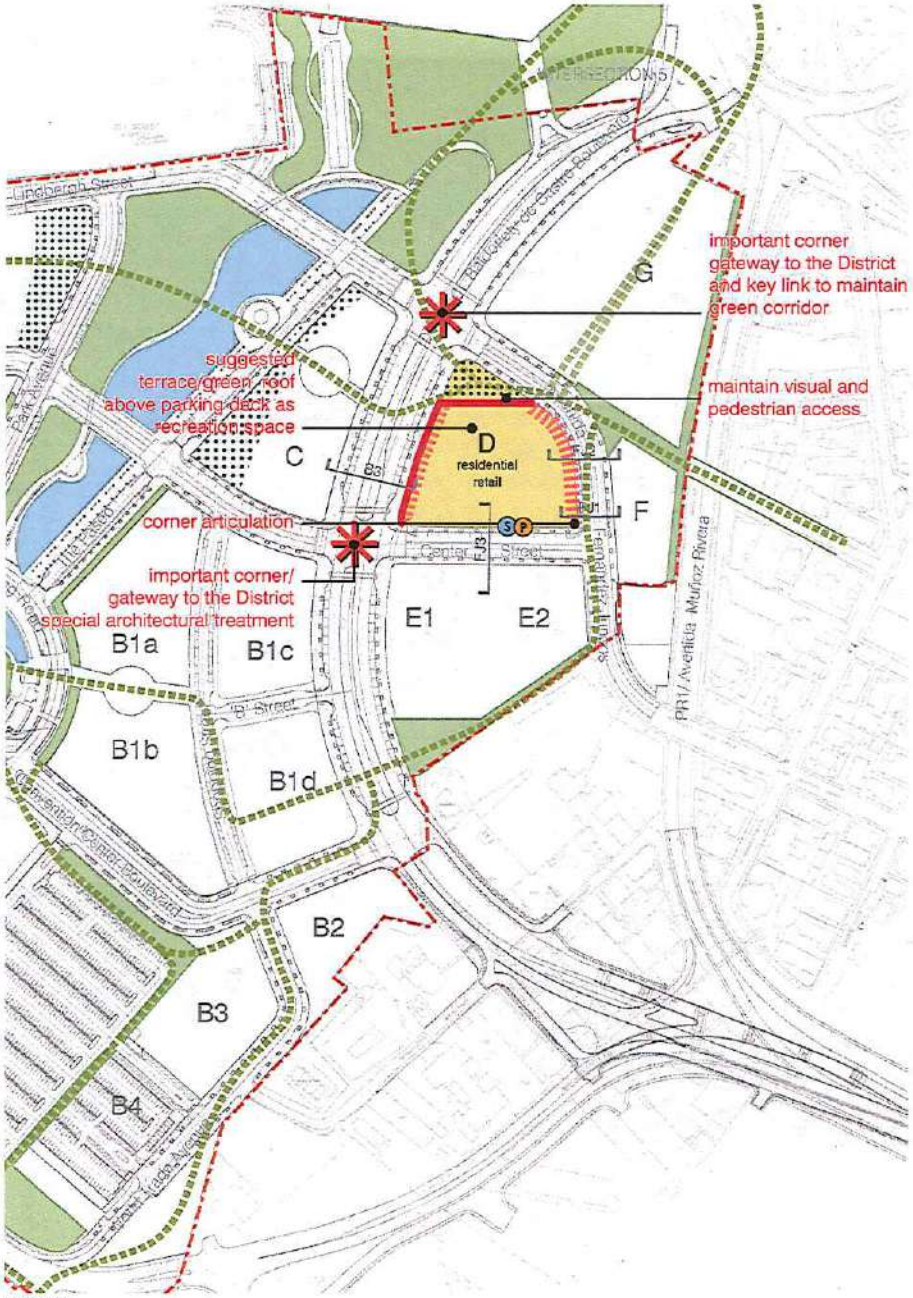


FIG. 5.8.1

FIG. 5.8.1
BLOCK PLAN
Block D

5.8 BLOCK D RESIDENTIAL DEVELOPMENT

LOCATION

- Block D is bounded by Baldorioty de Castro Boulevard to the west, Center Street to the south, and Avenida Fernández Juncos to the east and north.
- Primary Pedestrian Access: Baldorioty de Castro Boulevard, Avenida Fernández Juncos, and Center Street.
- Vehicular Access: From Center Street only. No entries for parking and service are allowed from Avenida Fernández Juncos or Baldorioty de Castro Boulevard.

APPROXIMATE DIMENSIONS

- Parcel Size: 9,046.02 SM (97,370.59 SF)
- Height of the base and middle: 12m (40') minimum, 18m (60')maximum
- Maximum Height of Construction: : Block D falls within the FAA regulated height envelope, with construction height limited to between 29m (95') and 44m (144') from Mean Sea Level in a 7:1 slope roughly north to south across the block [See Fig. 2.10.1 and Appendix 8].
- FAA airspace restrictions apply due to its proximity to the Fernando L. Ribas Dominicci Airport.
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Commercial, residential, parking and service

GROSS SQUARE FOOTAGE

- Residential: 276,000 SF (150 UVBs)
- Commercial: 14,500 SF maximum
- Parking: 335 spaces
- Parking Levels: 4 levels; 1 below grade

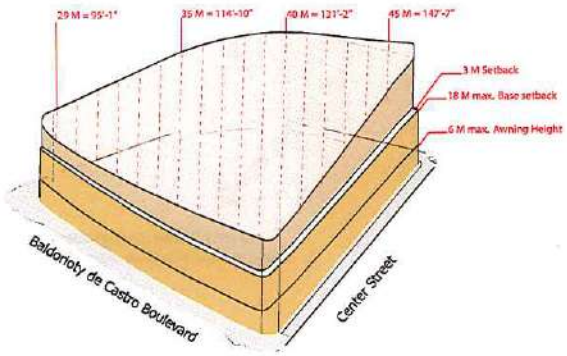


FIG. 5.8.2: BUILDING ENVELOPE FROM THE SOUTH





FIG. 5.8.2
BUILDING ENVELOPE
Block D

DESIGN OBJECTIVES

A. General

- Block D will be a mid-rise high-density development that forms an important transition between Miramar neighborhood and the District. The typology hence will relate to both the District as well as Miramar.
- Importantly, a park or plaza on the north side of the parcel is to provide a shared amenity to the development and the neighborhood, connecting both physically and visually to the Block F park at a point of possible crossing into the Miramar neighborhood. Sightlines link this open space with the Block F park and to the larger Paseo of the Convention District as it transitions to the Isleta Crossing and across Intersection 5 to the San Juan Waterfront Canal Walk.

B. Residential

- Residential buildings should demonstrate sensitivity to the nuances of local climate and setting.
- A patio or courtyard typology is encouraged to provide a continuous framing of streets and plaza.
- Internal open space for natural ventilation, light and outdoor activities is encouraged both at grade and on parking structures.
- Multiple or individual housing entrances located frequently and at street level are encouraged on all streets to maintain streetscape security and activity.
- Multiple balconies are encouraged to enrich the streetscape and offer a transition from the public realm to private residential space.
- Building design should take advantage of the proximity to commercial/restaurants, recreation in the Convention District and the adjacent residential neighborhood of Miramar.

C. Commercial Use

- Commercial use on Block D should provide services and amenities to the surrounding office and residential population.
- Emphasize commercial location on Baldorioty de Castro Boulevard and the plaza. On the plaza, establishments which use outdoor terraces are encouraged.
- All commercial establishments should be high quality specialty stores serving a variety of users. The commercial strategy should be integrated with the emerging public nature of the District as a draw for visitors and residents of the District and its surrounding neighborhoods.
- Commercial uses on Baldorioty de Castro Boulevard can include both restaurants and commercial up to a maximum of 12,000 sf overall.

D. Parking and Service

- Provide an integrated solution for access and service of both public and support areas, including parking, supply delivery, storage, waste management and security.
- Parking and service entries may only be located on Center Street.
- Conceal parking structures with residential uses, or where necessary with landscape or architectural screening to minimize their visibility from the streets or plaza. Exposed parking structure facades may not exceed 18m (60').
- Service and parking entries should be treated with care so as not to compromise

LEGEND

- Residential
- Hotel/Entertainment
- Parking
- Open Green Space

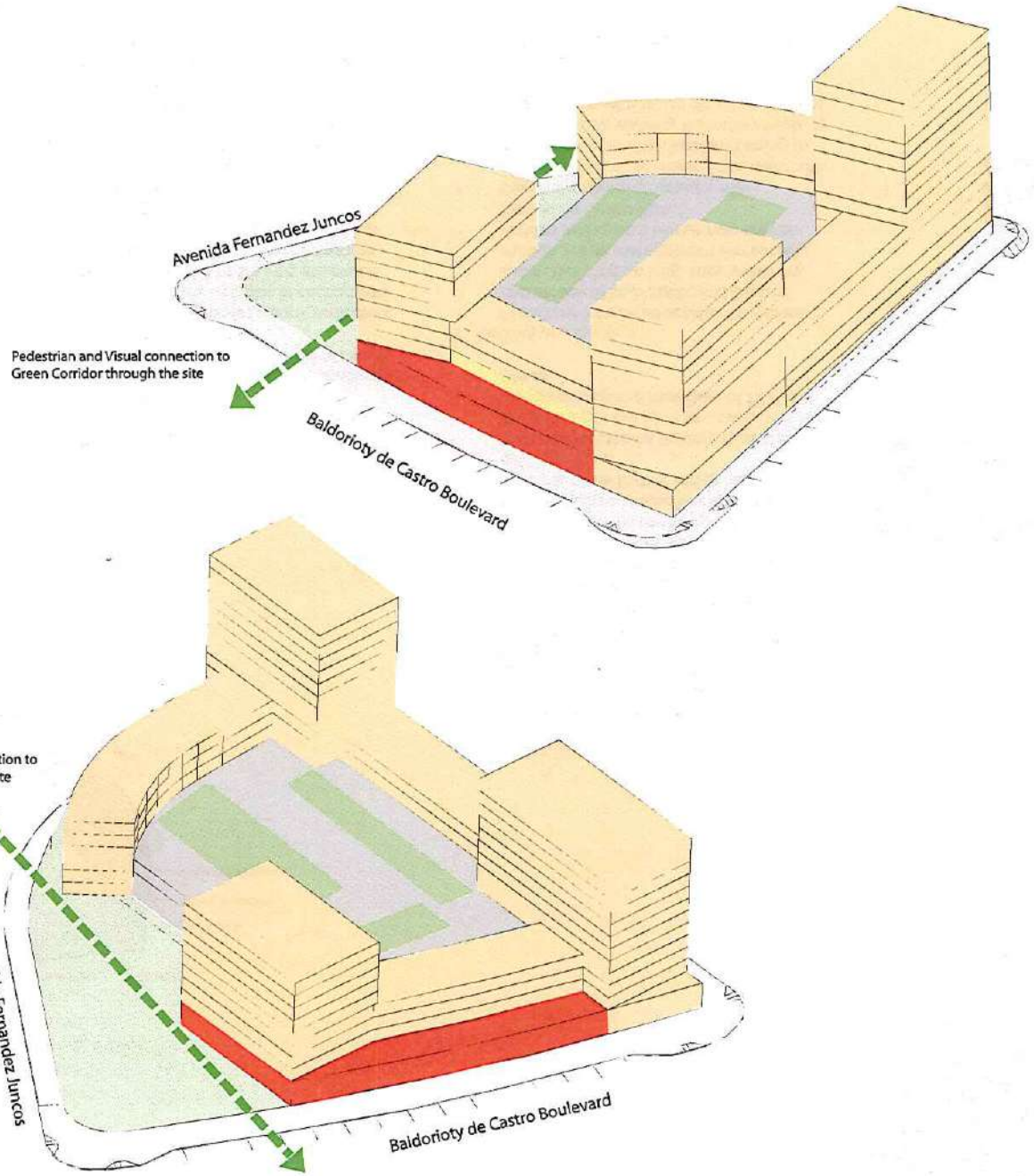


FIG. 5.8.3
USE DIAGRAM
Block D

FIG. 5.8.3

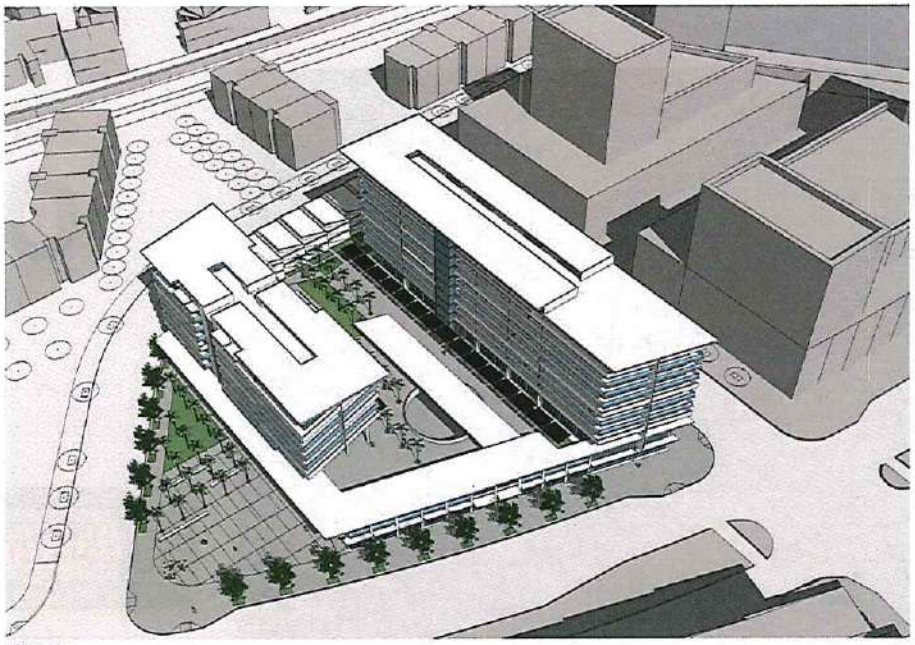


FIG. 5.8.4

the quality of the public realm.

MASSING

- Building design should carefully define the pedestrian scale of all sides of the block.
- Building massing should have a clearly articulated base and mid-section defining the street-wall with a height between 12m (40') minimum and 18m (60') maximum with towers set above and rising to FAA height limitations.
- Building massing without a setback may be acceptable if appropriate wind shear reducing, shading and scaling elements are introduced which enhance the streetscape and pedestrian experience.
- Buildings should be setback 6m (20') from the street to create a front yard and buffer residences from street traffic. Street edge should be clearly defined by architectural or landscape articulation which is not visually separated from the sidewalk and complements the pedestrian experience.
- Should use on Block D include commercial or office use, building mass for these functions, particularly at street level, may extend to the parcel limit up to the height of the previously noted base/middle setback.
- Buildings should nonetheless maintain a strong street wall along the plaza and on all other sides of the block.

THE PLAZA

- The Plaza is a critical link in the sequence of open spaces from Avenida Fernadez Juncos to the north end of the Paseo Park and through to Miramar. Creating an attractive, landscaped space with a well-proportioned built edge with lively and successful uses is a critically important design goal.
- The design of the plaza should blend with the overall sensibility and materiality of the District public realm.
- The design of the plaza should take on the human qualities of the plazas of old San Juan but not mimic their design with historicist treatments. The design of the plaza is intended as a casual and passive recreational venue of high quality detailing and materials.
- Physical boundaries of the plaza are as follows: North and East: Avenida Fernández Juncos South: Building line as defined on the block plan; West: Baldorioty de Castro Boulevard
- Shaded areas are highly desirable.
- Furniture and seating are important, especially associated with shaded areas.
- Nighttime appearance and lighting that is attractive and provides security should also be designed with sensitivity to the adjacent housing.
- A water element such as a fountain and/or a sculpture/art work is recommended but not required.

DESIGN CHALLENGES

- Block D is a fully residential block on the primarily office- oriented Baldorioty de Castro Boulevard. It is also a transitional block to the existing Miramar residential neighborhood. The design of Block D must successfully negotiate the shift in scale of buildings from mid-rise offices to housing.
- Block C forms one half of the 'gateway' expression at the intersection of Center Street and Baldorioty de Castro Boulevard, the major vehicular approach to the commercial core of the District. Building articulation at this corner should enhance a sense of arrival at this crossing.
- Sightlines to the north end of the Paseo, the park on Block F, and the pedestrian passage on Block C should be evident from both Baldorioty de Castro Boulevard and Avenida Fernández Juncos.
- The transition from the highly public Avenida Fernández Juncos and Baldorioty de Castro Boulevard to the private territory of the residential entrances should be carefully addressed.
- Entrances to commercial, offices and parking should be articulated to meet the needs of each element in this mixed-use environment, while retaining the distinct qualities of the Baldorioty and Fernández Juncos urban character zones.
- Differing character and levels of pedestrian and vehicular traffic on Baldorioty de Castro Boulevard, Avenida Fernández Juncos and Center Street may generate different solutions on each side of the block.
- The development should meet LEED Silver rating standards or better.

ENGINEERING AND GEOTECHNICAL

- No significant structural issues are expected on

FIG. 5.8.4
PROPOSED MASSING
Block D



FIG. 5.8.5

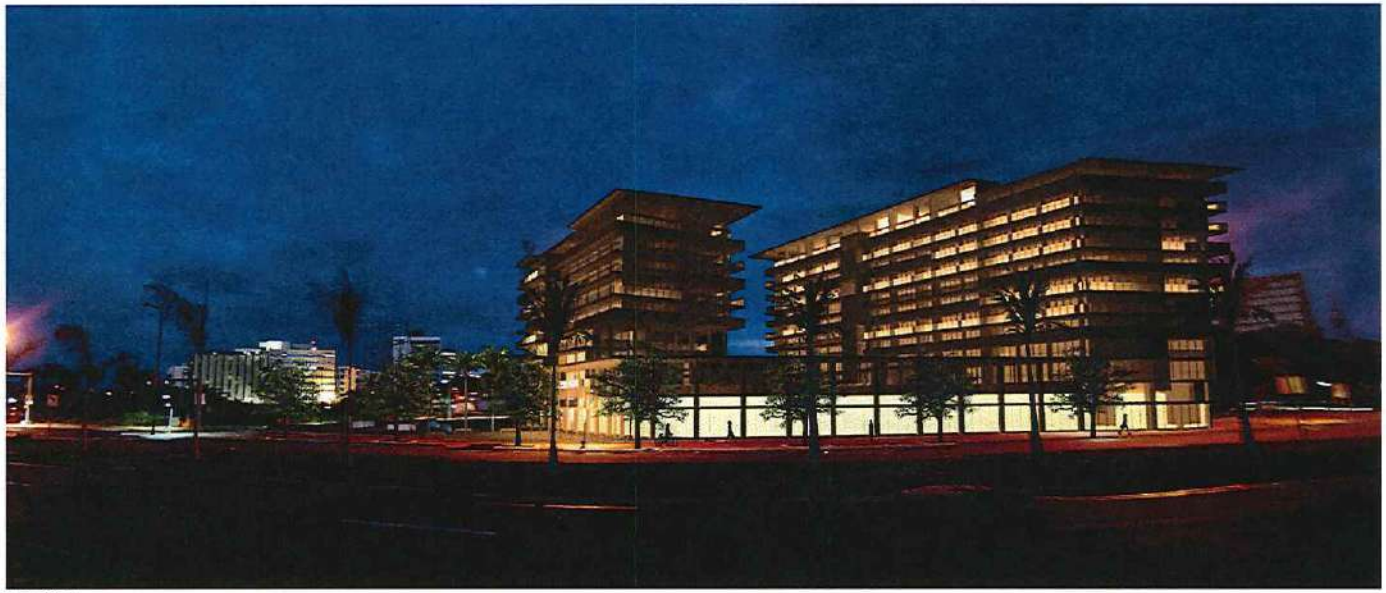


FIG. 5.8.6

FIGS. 5.8.5/5.8.6
ILLUSTRATIVE VIEWS
Block D

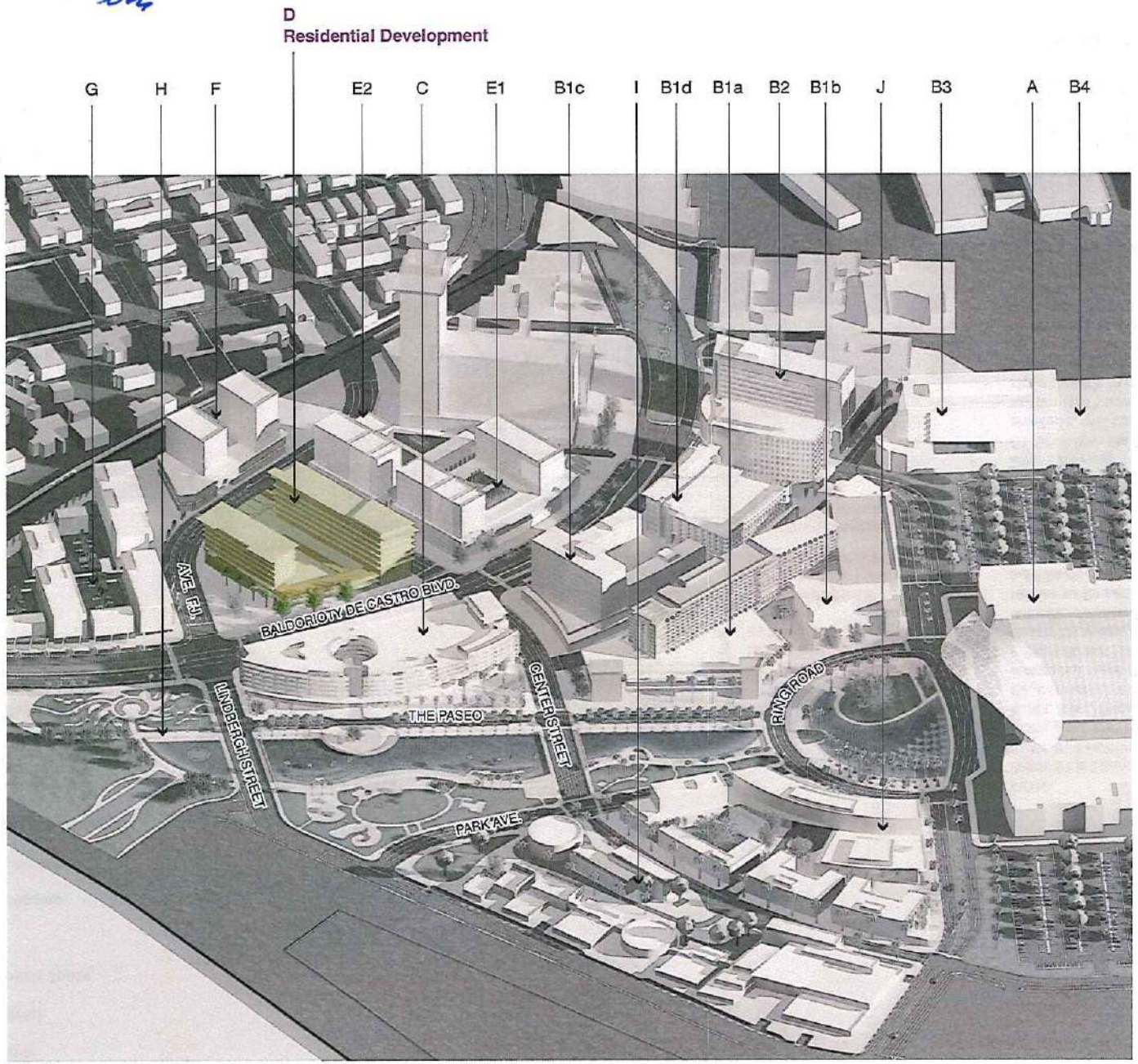


FIG. 5.8.7

FIG. 5.8.7
SAMPLE AXONOMETRIC
Block D

LEGEND

- Residential
- Commercial
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary

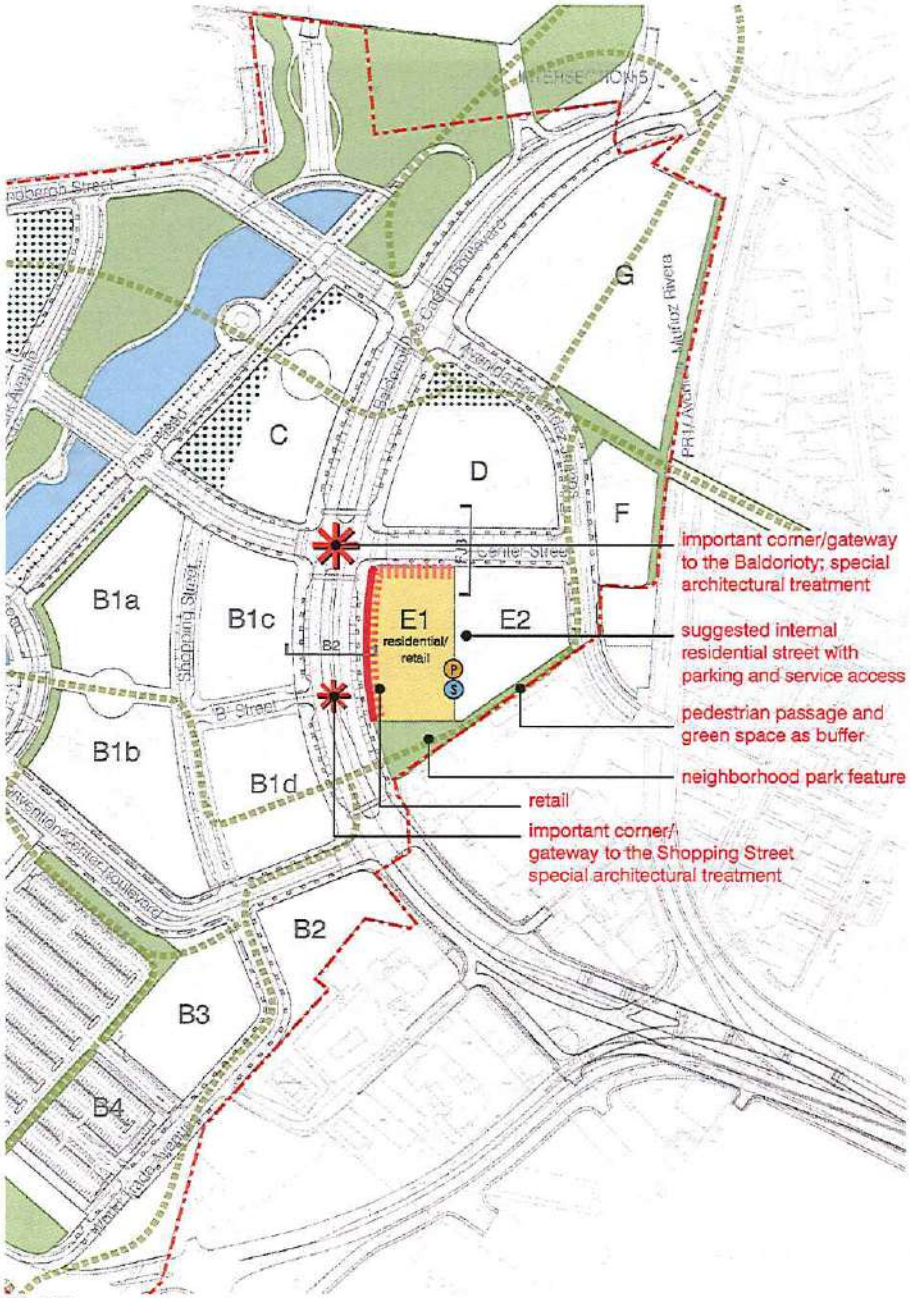


FIG. 5.9.1

FIG. 5.9.1
BLOCK PLAN
Blocks E1

5.9 BLOCK E1 RESIDENTIAL DEVELOPMENT

LOCATION

- Block E1 is bound by Center Street to the north, by Baldorioty de Castro Boulevard to the west, and by private property to the south. It is adjoined to the east by Block E2, from which it is separated by an internal residential street ("E" Street).
- Primary Pedestrian Access: Baldorioty de Castro Boulevard, Center Street, and "E" Street.
- Vehicular Access: From Center Street only. No entries for parking and service are allowed from Baldorioty de Castro Boulevard.

APPROXIMATE DIMENSIONS

- Parcel Size: 7,329 SM (78,893 SF)
- Height of the base and middle: 12m (40') minimum, 18m (60') maximum
- Maximum Height of Construction: Block E1 falls within the FAA regulated height envelope, with construction height limited to 46m (151') from Mean Sea Level in a 7:1 slope roughly north to south across the block [See Fig. 2.10.1 and Appendix 8].
- FAA airspace restrictions apply due to its proximity to the Fernando L. Ribas Dominicci Airport.
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Residential, commercial, parking and service

GROSS SQUARE FOOTAGE

- Residential: 244,800 SF (133 UVBs)
- Commercial: 5,000 SF maximum
- Office: 10,000 SF maximum
- Parking: 350 spaces
- Parking Levels: 4 levels max. above grade

DESIGN OBJECTIVES

A. General

- Block E1 is a mid-rise high-density development which, along with Block E2, occupies the transitional zone between the District and the Miramar neighborhood to the east. Its typology should relate to both the District and Miramar.
- Blocks E1 and E2 define the edge of the Block E Park (south) and contribute to the streetscapes of Avenida Fernández Juncos, Center Street, and Baldorioty de Castro Boulevard. Their massing and articulation are intimately related and should complement each other.
- The building definition along "E" Street should be at a more intimate scale than along the major arteries bordering the development. Special consideration should be given to the character of the elevation facing the public Block E Park.
- Block E Park provides a green, pedestrian passageway between Avenida Fernández Juncos, the main thoroughfare between the District and Miramar, and the Baldorioty de Castro Boulevard, with connections to the Shopping Street across Block B1d. The park is a shared amenity between the residents of Block E1/E2 and the neighborhood, and should be accessible to all.

B. Residential

- Residential buildings should demonstrate sensitivity to the nuances of local climate and setting.
- A patio or courtyard typology is encouraged to provide a continuous framing of streets and plaza.
- Internal open spaces for natural ventilation, light and outdoor activities is encouraged both at grade and on parking structures.
- Multiple or individual housing entrances located frequently and at street level are encouraged on all streets to maintain streetscape security and activity.
- Multiple balconies are encouraged to enrich the streetscape and offer a transition from the public realm to private residential space.
- Building design should take advantage of the proximity to commercial/restaurants, recreation in the Convention District and the adjacent residential neighborhood of Miramar.

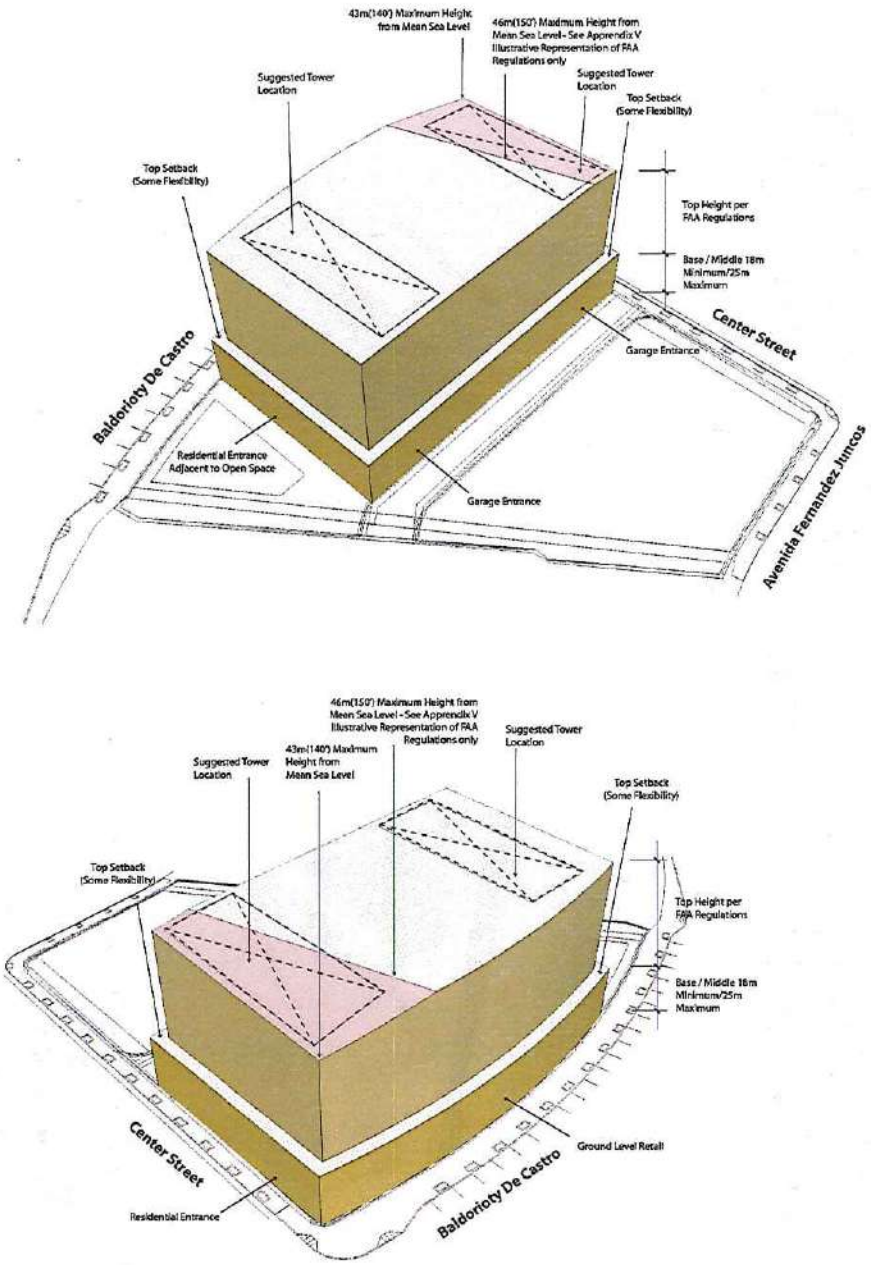


FIG. 5.9.2: BUILDING ENVELOPE FROM THE SOUTH (TOP), AND THE NORTH (BOTTOM)



FIG. 5.9.2
BUILDING ENVELOPES
Block E1

LEGEND

- Residential
- Office
- Commercial

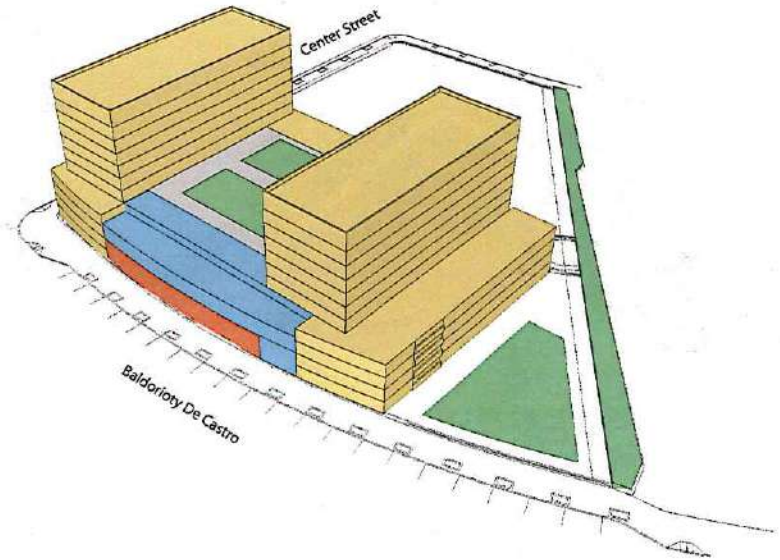


FIG. 5.9.3
USE DIAGRAM
Block E1

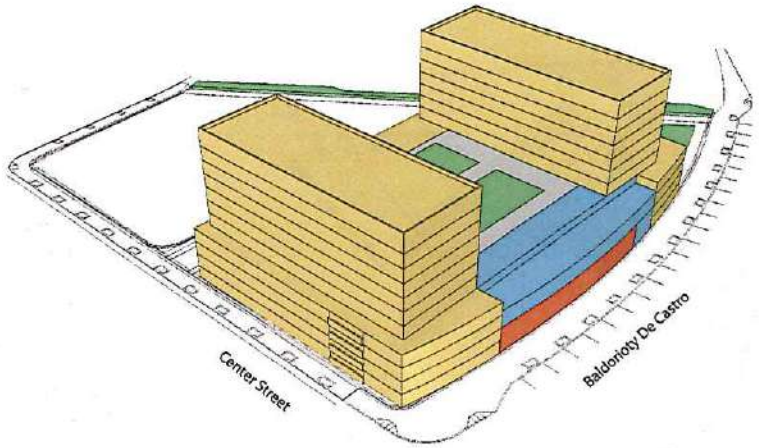


FIG. 5.9.3

C. Commercial Use

- Commercial use is designated on Block E1 and should provide services and amenities to the surrounding office and residential population.
- Emphasize commercial location on Baldorioty de Castro Boulevard and Block E park. On the park, establishments which use outdoor terraces are encouraged.
- All commercial establishments should be high quality specialty stores serving a variety of users. The commercial strategy should be integrated with the emerging public nature of the District as a draw for visitors and residents of the District and its surrounding neighborhoods.
- Commercial uses on Baldorioty de Castro Boulevard can include both restaurants and commercial up to a maximum of 5,000 SF overall.

D. Office

- Office use is defined as professional offices.
- Locate entrances for professional offices above commercial on Baldorioty de Castro Boulevard.

E. Parking and Service

- Provide an integrated solution for access and service of both public and support areas, including parking, supply delivery, storage, waste management and security.
- Parking and service entries may only be located on Center or "E" Streets.
- Conceal parking structures with residential uses, or where necessary with landscape or architectural screening to minimize their visibility from the streets or plaza.
- Exposed parking structure facades may not exceed 18m (60').
- Service and parking entries should be treated with care so as not to compromise the quality of the public realm.

MASSING

- Building design should carefully define the pedestrian scale of all sides of the block.
- Building massing should have a clearly articulated base and mid-section defining the street-wall with a height between 12m (40') minimum and 18m (60') maximum with towers set above and rising to FAA

height limitations.

- Building massing without a setback may be acceptable if appropriate wind shear reducing, shading and scaling elements are introduced which enhance the streetscape and pedestrian experience.
- Residential program should be setback 6m (20') from the street to create a front yard and buffer residences from street traffic. Street edge should be clearly defined by architectural or landscape articulation which is not visually separated from the sidewalk and complements the pedestrian experience.
- Building massing for commercial functions, particularly at street level, may extend to the parcel limit up to the height of the previously noted base/middle setback.
- Buildings should nonetheless maintain a clearly defined street wall along the park and on all other sides of the block.

THE PARK

- The Park is a critical link in the sequence of open spaces from Avenida Fernández Juncos to the Shopping Street. Creating an attractive, landscaped space with a well-proportioned built edge with lively and successful uses is a critically important design goal. Passive recreational programming is encouraged.
- The design of the park should blend with the overall sensibility and materiality of the District public realm.
- The design of the plaza should take on the human qualities of the plazas of old San Juan but not mimic their design with historicist treatments. The design of the plaza is intended as a casual and passive recreational venue of high quality detailing and materials.
- Creative lighting design should reinforce this identity at night and at a distance. Innovation in sustainable design is encouraged, especially as related shading and cooling.
- Physical boundaries of the plaza are as follows: building line as defined on the block plan (north), Avenida Fernández Juncos (east); property line of Blocks E1 and E2 (south), and Baldorioty de Castro Boulevard.
- Shaded areas are highly desirable.
- Furniture and seating are important.





FIG. 5.9.4

FIG. 5.9.4
SAMPLE MASSING
Block E1

especially associated with shaded areas.
- Nighttime appearance and lighting that is attractive and provides security should also be designed with sensitivity to the adjacent housing.
- A water element such as a fountain and/or a sculpture/art work is recommended but not required.

DESIGN CHALLENGES

- Block E1 is a residential block with ground-floor commercial stores on the primarily office-oriented Baldorioty de Castro Boulevard. It is also a transitional block at the edge of the Miramar residential neighborhood. The design of Block E2 must successfully negotiate the shift in scale and character from single-family houses and apartment buildings of Miramar to the mid-rise office buildings of the Baldorioty.
- Creating a coherent block structure with a well-defined public edge along the park and major avenues will be a challenge if Blocks E1 and E2 are developed independently. The key may lie in maintaining a consistent scale and massing across these two blocks.
- Sightlines from Avenida Fernández Juncos to Baldorioty de Castro Boulevard should be preserved and extended across the Block B1d passageway to the Shopping Street.
- The transition from the highly public Fernández Juncos and Baldorioty de Castro boulevards to the private territory of the residential entrances should be carefully addressed.
- A significant difference in topographical elevation exists between Baldorioty de Castro Boulevard and Avenida Fernández Juncos. Architectural massing and landscape elements should be designed to maintain a safe, pedestrian-friendly streetscape.
- The existing hotel structure to the south of the block is among the tallest structures in the neighborhood and poses an architectural challenge due to the height of its tower, lack of street edge, monolithic massing and uniform façades.
- Entrances to commercial, residences and parking should be articulated to meet the needs of each element in this mixed-use environment, while retaining the distinct qualities of the Baldorioty and Fernández Juncos urban character zones.
- Differing character and levels of pedestrian and vehicular traffic on Baldorioty de Castro Boulevard, Center Street, "E" Street and Block E Park, combined with the climatic specificities of those orientations, will require a different solution on each site of the block.
- Expressing and articulating the common territory of the Block E Park will require special architectural treatment of the southern edge. The Park is designated to become a very active grade-level pedestrian space with sidewalk level access between Baldorioty de Castro Boulevard and Avenida Fernández Juncos.
- The design should reflect an understanding of the local climate, especially demonstrating a successful interaction between private and public indoor and outdoor spaces for the creation of a culturally-grounded image of contemporary Puerto Rico.
- The development should meet LEED Silver rating standards or better.

ENGINEERING AND GEOTECHNICAL

- No significant structural issues are expected on Block E1 other than those noted in Section 2.
- The important structural issues are expected to be large base shears for both wind and seismic loads and the differing seismic response of the low-rise and mid or high-rise portions of the building. The high base shears will be a result of the building height, the size of the base and the wind exposure of towers.
- Soils and topography in this area may provide slightly improved conditions
- Column loads are expected to range from 1,600 to 2,000 kips for interior columns and from 1,000 to 1,300 kips for exterior columns. Base shears are expected to range from 2,500 to 3,600 kips for seismic and from 3,200 kips to 3,600 kips for wind.
- Implementation of several different types of structural systems may be necessary to meet the specific requirements of different program spaces within the development.

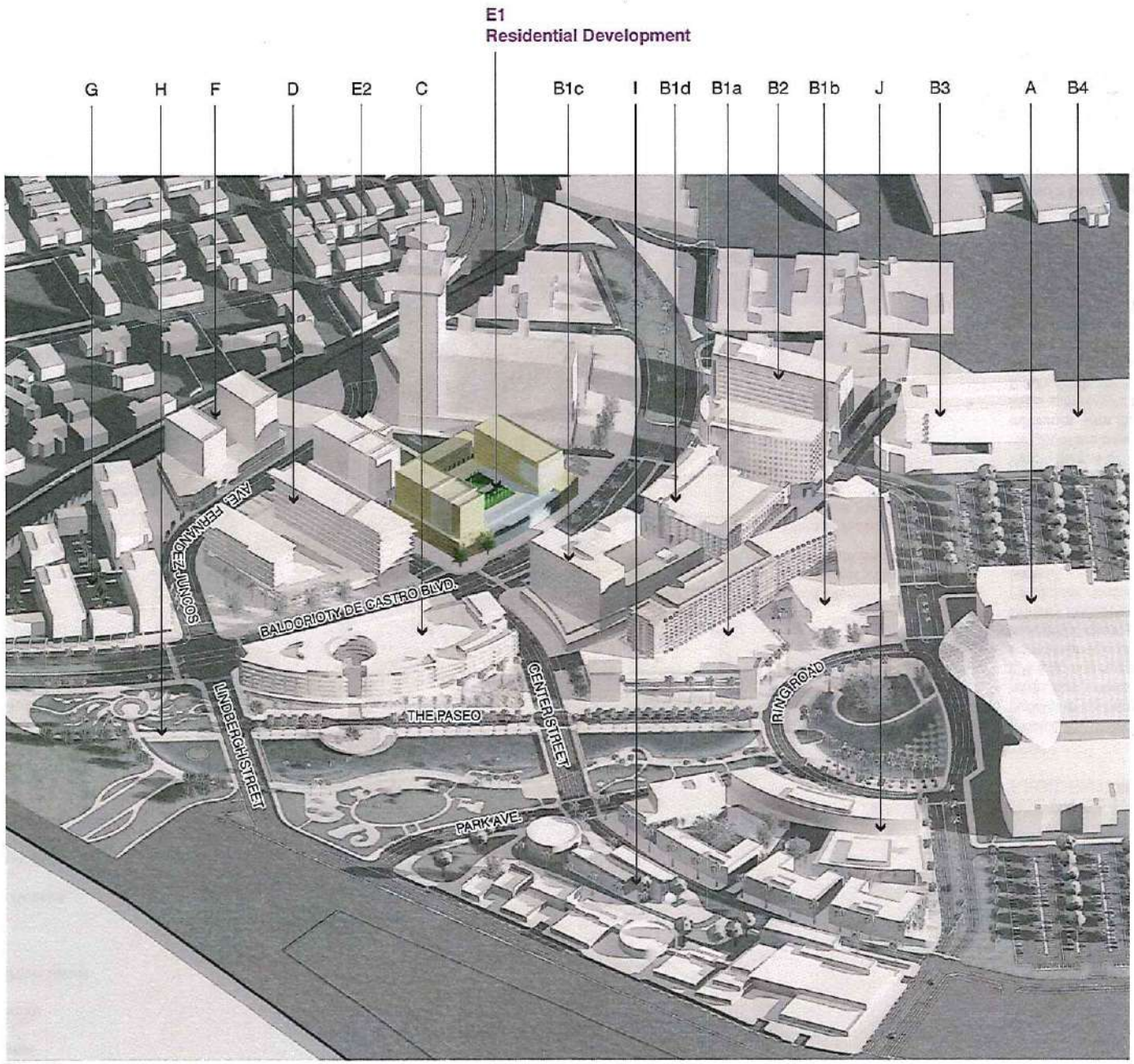


FIG. 5.9.5

FIG. 5.9.5
SAMPLE AXONOMETRIC
Block E1

LEGEND

- Residential
- Commercial
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary

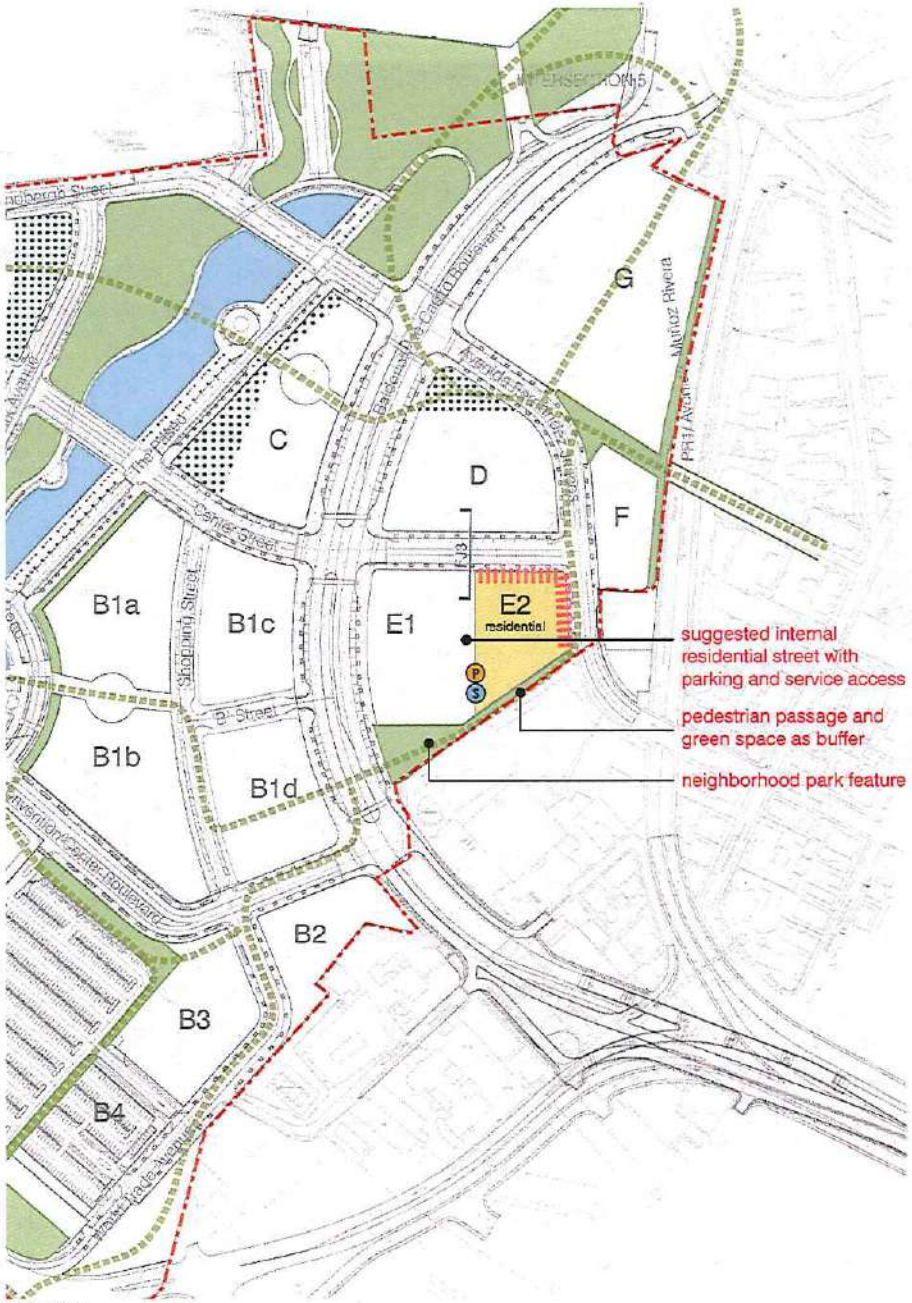


FIG. 5.10.1

FIG. 5.10.1
BLOCK PLAN
Blocks E2

5.10 BLOCK E2 RESIDENTIAL DEVELOPMENT

LOCATION

- Block E2 is bound by Avenida Fernández Juncos to the east, Center Street to the north, and private property to the south. It is adjoined to the west by Block E1, from which it is separated by an internal residential street ("E" Street).
- Primary Pedestrian Access: Avenida Fernández Juncos, Center Street, and "E Street."
- Vehicular Access: From Center Street only. No entries for parking and service are allowed from Avenida Fernández Juncos.

APPROXIMATE DIMENSIONS

- Parcel Size: 4,570.06 SM (49,191.67 SF)
- Height of the base and middle: 12m (40') minimum, 18m (60') maximum
- Maximum Height of Construction: Block E falls within the FAA regulated height envelope, with construction height limited to 46m (151') from Mean Sea Level in a 7:1 slope roughly north to south across the block [See Fig. 2.10.1 and Appendix 8].
- FAA airspace restrictions apply due to its proximity to the Fernando L. Ribas Dominicci Airport.
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Residential, parking and service

GROSS SQUARE FOOTAGE

- Residential: 170,600 SF (90 UVBs)
- Parking: 189 spaces
- Parking Levels: 4 levels max. above grade

DESIGN OBJECTIVES

A. General

- Block E2 is a mid-rise high-density development which, along with Block E1, occupies the transitional zone between the District and the Miramar neighborhood to the east. Its typology should relate to both the District and Miramar.
- Blocks E1 and E2 define the edge of the Block E Park (south) and contribute to the streetscapes of Avenida Fernández Juncos, Center Street, and Baldorioty de Castro Boulevard. Their massing and articulation are intimately related and should complement each other.
- The building definition along "E" Street should be at a more intimate scale than along the major arteries bordering the development. Special consideration should be given to the character of the elevation facing the public Block E Park.
- Block E Park provides a green, pedestrian passageway between Avenida Fernández Juncos, the main thoroughfare between the District and Miramar, and the Baldorioty de Castro Boulevard, with connections to the Shopping Street across Block B1d. The park is a shared amenity between the residents of Block E1/E2 and the neighborhood, and should be accessible to all.

B Residential

- Residential buildings should demonstrate sensitivity to the nuances of local climate and setting.
- A patio or courtyard typology is encouraged to provide a continuous framing of streets and plaza.
- Internal open spaces for natural ventilation, light and outdoor activities is encouraged both at grade and on parking structures.
- Multiple or individual housing entrances located frequently and at street level are encouraged on all streets to maintain streetscape security and activity.
- Multiple balconies are encouraged to enrich the streetscape and offer a transition from the public realm to private residential space.
- Building design should take advantage of the proximity to commercial/restaurants, recreation in the Convention District and the adjacent residential neighborhood of Miramar.

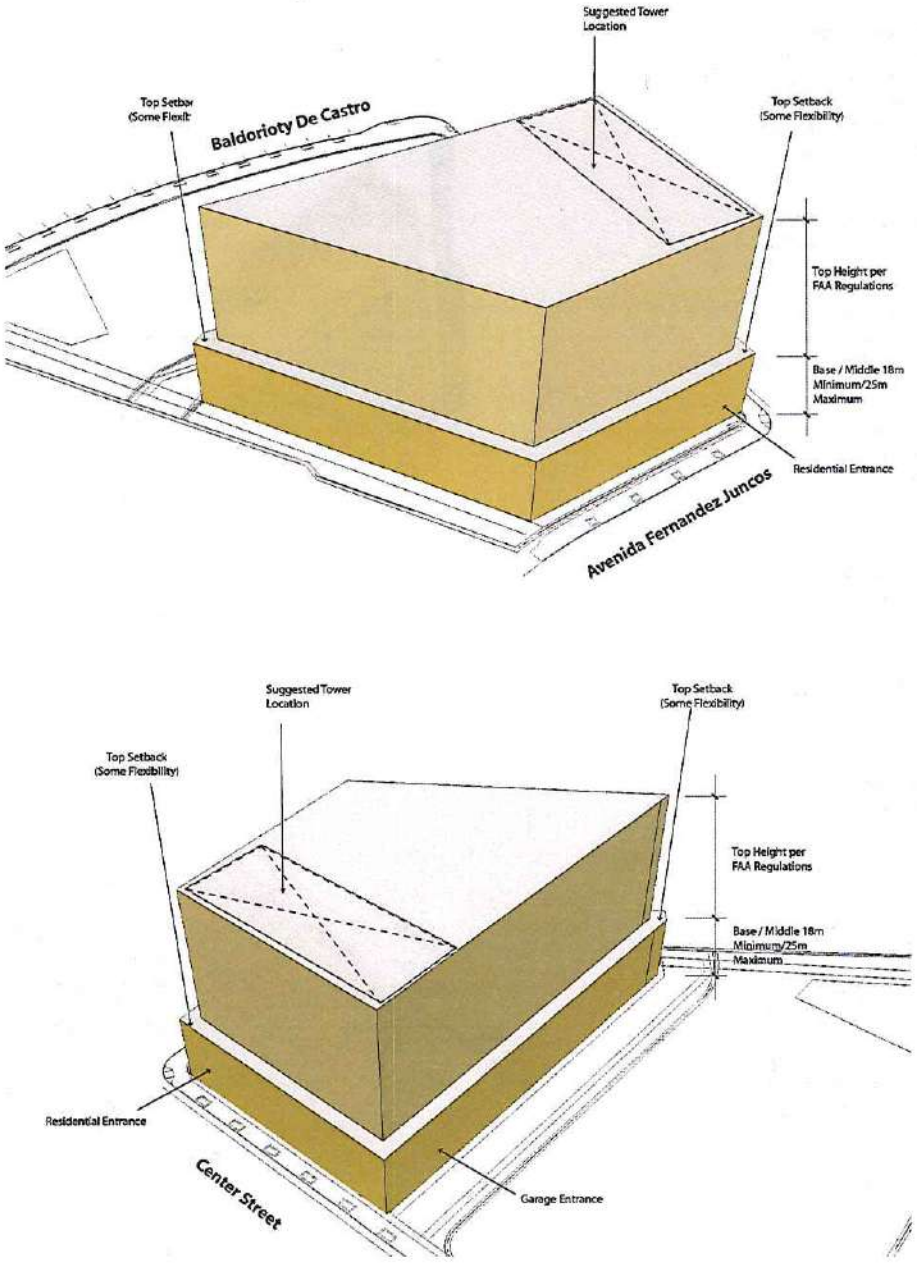


FIG. 5.10.2: BUILDING ENVELOPE FROM THE SOUTH (TOP), AND THE NORTH (BOTTOM)



FIG. 5.10.2
BUILDING ENVELOPES
Block E2

LEGEND

Residential

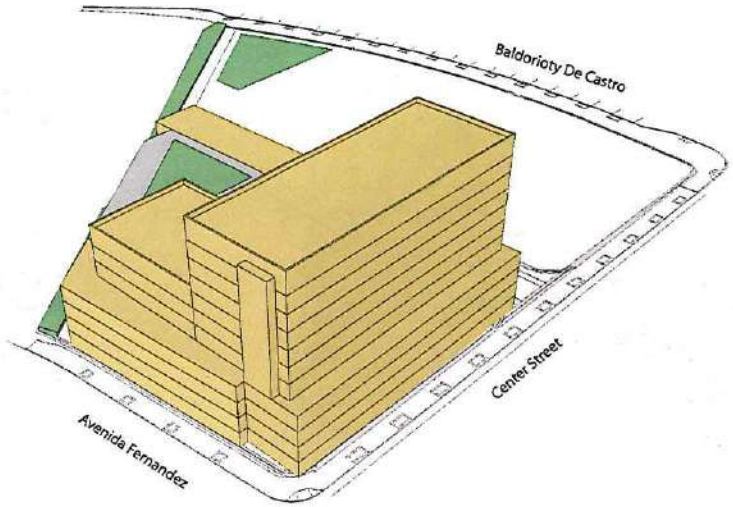


FIG. 5.10.3
USE DIAGRAM
Block E2

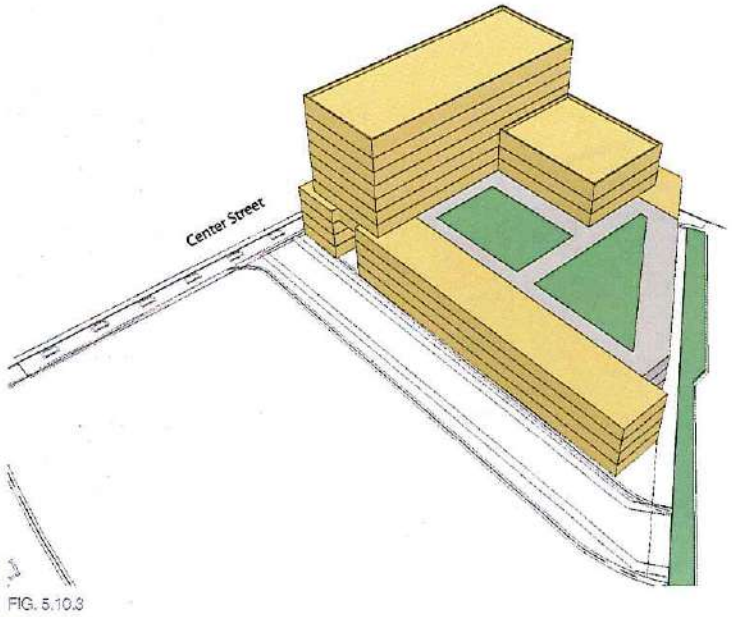


FIG. 5.10.3

C. Parking and Service

- Provide an integrated solution for access and service of both public and support areas, including parking, supply delivery, storage, waste management and security.
- Parking and service entries may only be located on Center or "E" Streets.
- Conceal parking structures with residential uses, or where necessary with landscape or architectural screening to minimize their visibility from the streets or plaza.
- Exposed parking structure facades may not exceed 18m (60').
- Service and parking entries should be treated with care so as not to compromise the quality of the public realm.

MASSING

- Building design should carefully define the pedestrian scale of all sides of the block.
- Building massing should have a clearly articulated base and mid-section defining the street-wall with a height between 12m (40') minimum and 18m (60') maximum with towers set above and rising to FAA height limitations.
- Building massing without a setback may be acceptable if appropriate wind shear reducing, shading and scaling elements are introduced which enhance the streetscape and pedestrian experience.
- Residential program should be setback 6m (20') from the street to create a front yard and buffer residences from street traffic. Street edge should be clearly defined by architectural or landscape articulation which is not visually separated from the sidewalk and complements the pedestrian experience.
- Building massing for commercial functions, particularly at street level, may extend to the parcel limit up to the height of the previously noted base/middle setback.
- Buildings should nonetheless maintain a clearly defined street wall along the park and on all other sides of the block.

THE PARK

- The Park is a critical link in the sequence of open spaces from Avenida Fernández Juncos to the Shopping Street. Creating an attractive, landscaped space with a well-proportioned built edge with lively and successful uses is a critically

important design goal. Passive recreational programming is encouraged.

- The design of the park should blend with the overall sensibility and materiality of the District public realm.
- The design of the plaza should take on the human qualities of the plazas of old San Juan but not mimic their design with historicist treatments. The design of the plaza is intended as a casual and passive recreational venue of high quality detailing and materials.
- Creative lighting design should reinforce this identity at night and at a distance. Innovation in sustainable design is encouraged, especially as related shading and cooling.
- Physical boundaries of the plaza are as follows: building line as defined on the block plan (north), Avenida Fernández Juncos (east); property line of Blocks E1 and E2 (south), and Baldorioty de Castro Boulevard.
- Shaded areas are highly desirable.
- Furniture and seating are important, especially associated with shaded areas.
- Nighttime appearance and lighting that is attractive and provides security should also be designed with sensitivity to the adjacent housing.
- A water element such as a fountain and/or a sculpture/art work is recommended but not required.

DESIGN CHALLENGES

- Block E2 is a fully residential block on the primarily office-oriented Baldorioty de Castro Boulevard. It is also a transitional block at the edge of the Miramar residential neighborhood. The design of Block E2 must successfully negotiate the shift in scale and character from single-family houses and apartment buildings of Miramar to the mid-rise office buildings of the Baldorioty.
- Creating a coherent block structure with a well-defined public edge along the park and major avenues will be a challenge if Blocks E1 and E2 are developed independently. The key may lie in maintaining a consistent scale and massing across these two blocks.
- Sightlines from Avenida Fernández Juncos to Baldorioty de Castro Boulevard should be preserved and extended across the Block B1d passageway to the Shopping Street.





FIG. 5.10.4

FIG. 5.10.4
SAMPLE MASSING
Block E2

1.0
2.0
3.0
4.0
5.0 BLOCK GUIDELINES
6.0
A

- The transition from the highly public Fernández Juncos and Baldorioty de Castro boulevards to the private territory of the residential entrances should be carefully addressed.
- A significant difference in topographical elevation exists between Baldorioty de Castro Boulevard and Avenida Fernández Juncos. Architectural massing and landscape elements should be designed to maintain a safe, pedestrian-friendly streetscape.
- The existing hotel structure to the south of the block is among the tallest structures in the neighborhood and poses an architectural challenge due to the height of its tower, lack of street edge, monolithic massing and uniform façades.
- Differing character and levels of pedestrian and vehicular traffic on Avenida Fernández Juncos, Center Street, "E" Street and Block E Park combined with the climatic specificities of those orientations, will require a different solution on each site of the block.
- Expressing and articulating the common territory of the Block E Park will require special architectural treatment of the southern edge. The Park is designated to become a very active grade-level pedestrian space with sidewalk level access between Baldorioty de Castro Boulevard and Avenida Fernández Juncos.
- The design should reflect an understanding of the local climate, especially demonstrating a successful interaction between private and public indoor and outdoor spaces for the creation of a culturally-grounded image of contemporary Puerto Rico.
- The development should meet LEED Silver rating standards or better.

ENGINEERING AND GEOTECHNICAL

- No significant structural issues are expected on Block E2 other than those noted in Section 2.
- The important structural issues are expected to be large base shears for both wind and seismic loads and the differing seismic response of the low-rise and mid or high-rise portions of the building. The high base shears will be a result of the building height, the size of the base and the wind exposure of towers.
- Soils and topography in this area may provide slightly improved conditions
- Column loads are expected to range from 1,600 to 2,000 kips for interior columns and from 1,000 to 1,300 kips for exterior columns. Base shears are expected to range from 2,500 to 3,600 kips for seismic and from 3,200 kips to 3,600 kips for wind.
- Implementation of several different types of structural systems may be necessary to meet the specific requirements of different program spaces within the development.

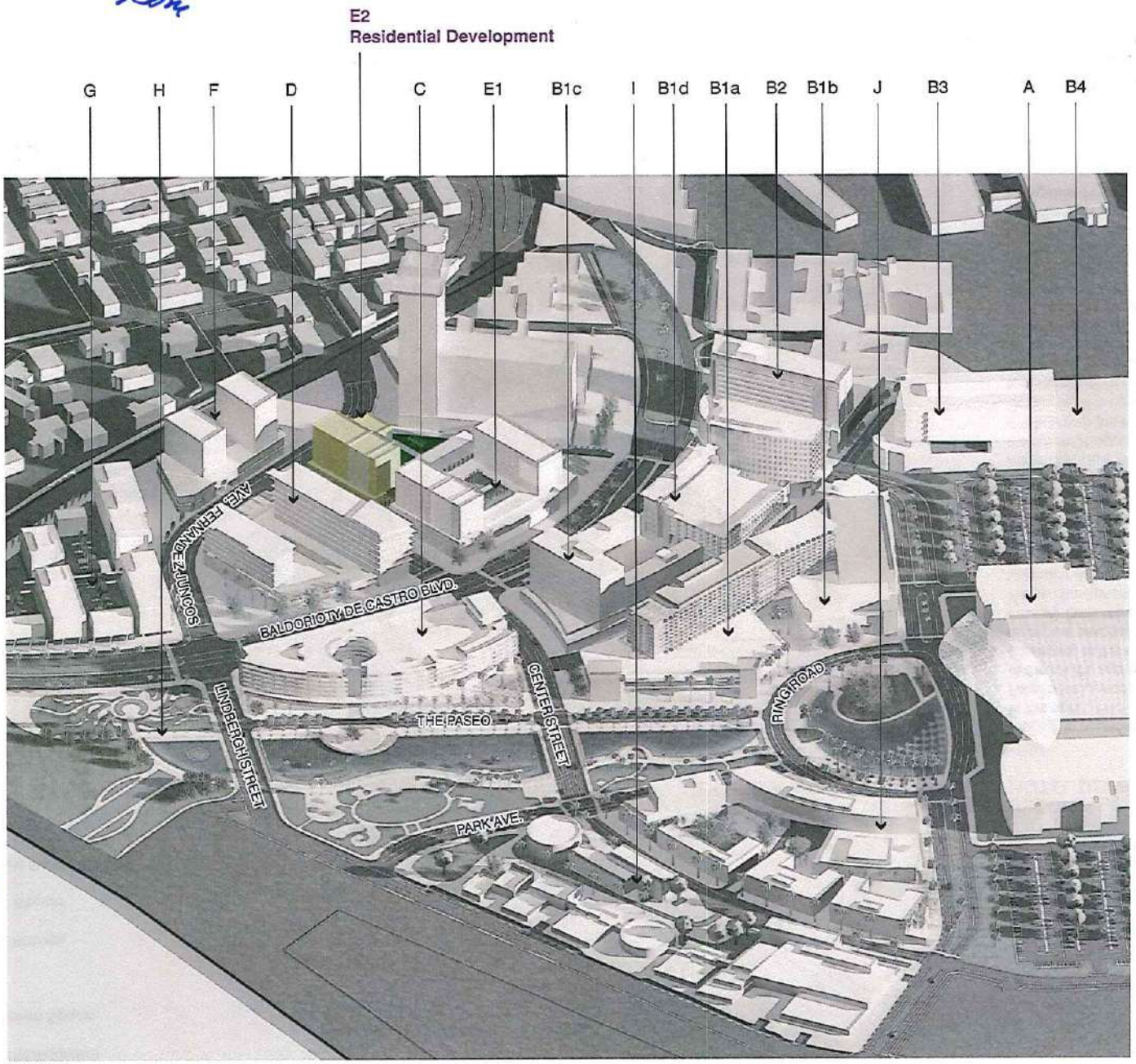


FIG. 5.10.5

FIG. 5.10.5
SAMPLE AXONOMETRIC
Block E2

LEGEND

- Hotel/Entertainment
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary

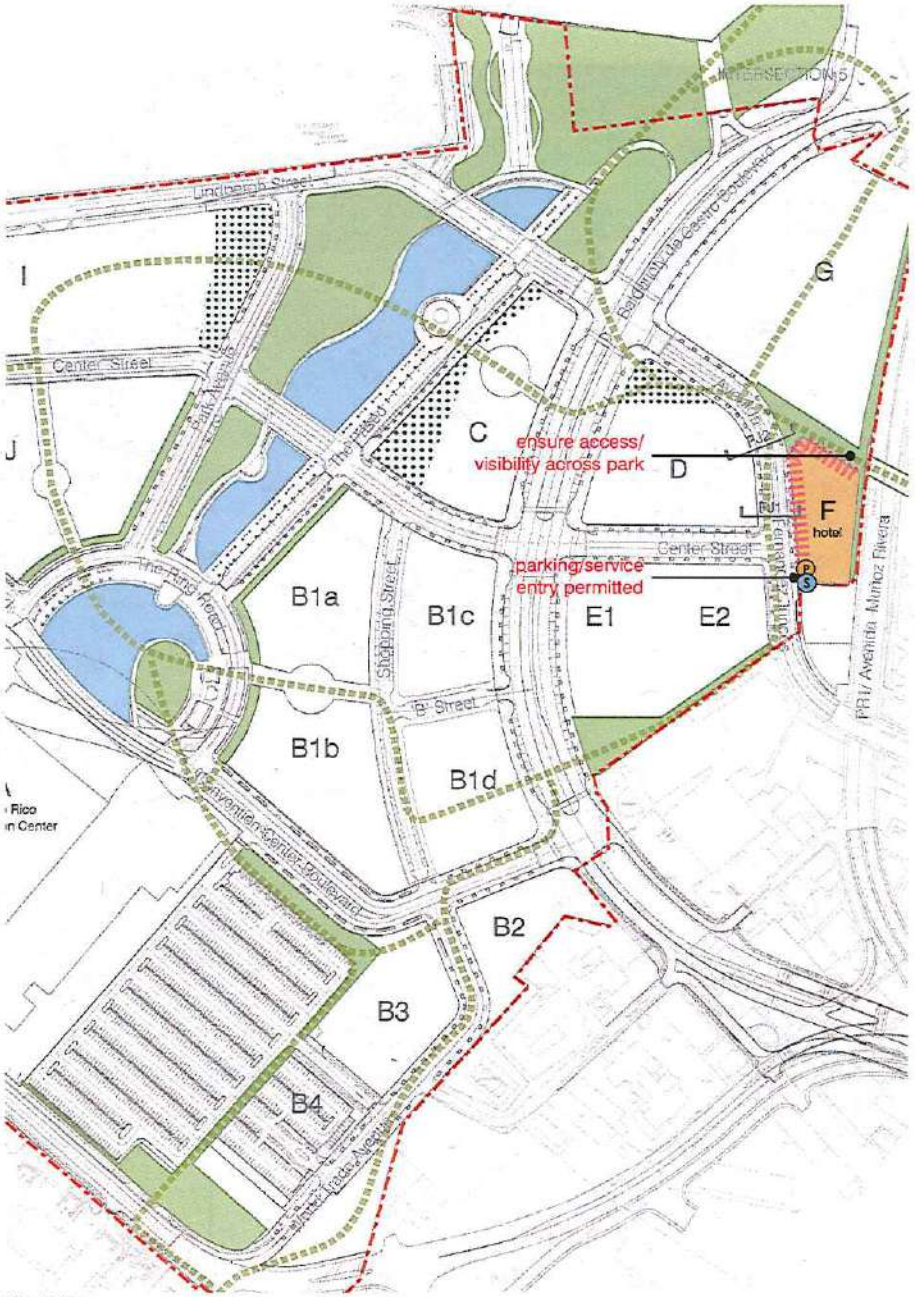


FIG. 5.11.1

FIG. 5.11.1
BLOCK PLAN
Block F

5.11 BLOCK F HOTEL DEVELOPMENT

LOCATION

- Block F is bounded by private property to the north, PR 1 to the east, Avenida Fernández-Juncos and the Block F Park to the south, and Baldorioty de Castro Boulevard to the west. A planted buffer runs along the east boundary with PR1.
- Primary Pedestrian Access: Avenida Fernández-Juncos and the Block F Park.
- Vehicular Access: From Avenida Fernández-Juncos only.

APPROXIMATE DIMENSIONS

- Parcel Size: Block F: 3,397 SM (36,565 SF)
- Height of the base and middle: 12m (40') minimum, 18m (60') maximum
- Maximum Height of Construction: Block F falls within the FAA regulated height envelope, with construction height limited to between 40m (131') and 46m (151') from Mean Sea Level in a 7:1 slope roughly north to south across the block [See Fig. 2.10.1 and Appendix 8].
- FAA airspace restrictions apply due to its proximity to the Fernando L. Ribas Dominicci Airport.
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Hotel, parking and service

GROSS SQUARE FOOTAGE

- Hotel: 100,759 SF (max. 169 keys)
- Parking: 82 spaces
- Parking Levels: 4 levels max. above grade

LEGEND

- Hotel/Entertainment
- Commercial
- Parking

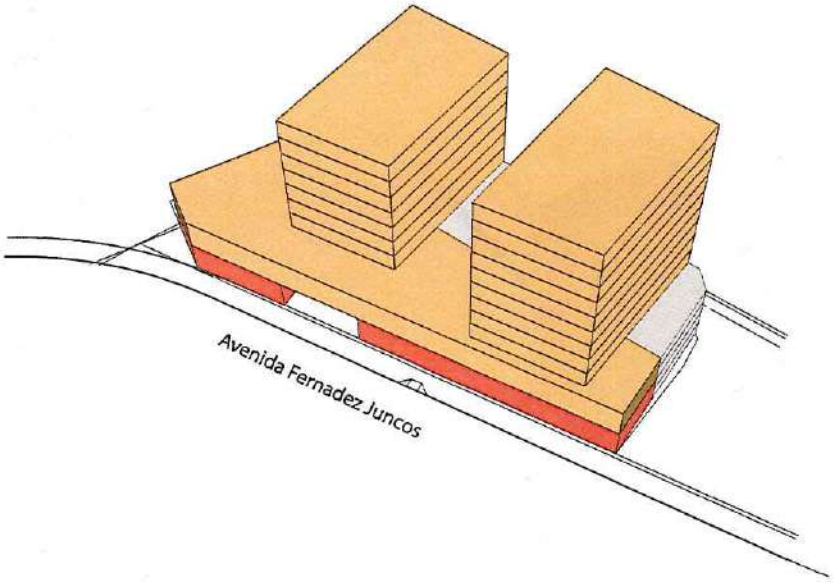


FIG. 5.11.3
USE DIAGRAM
Block F

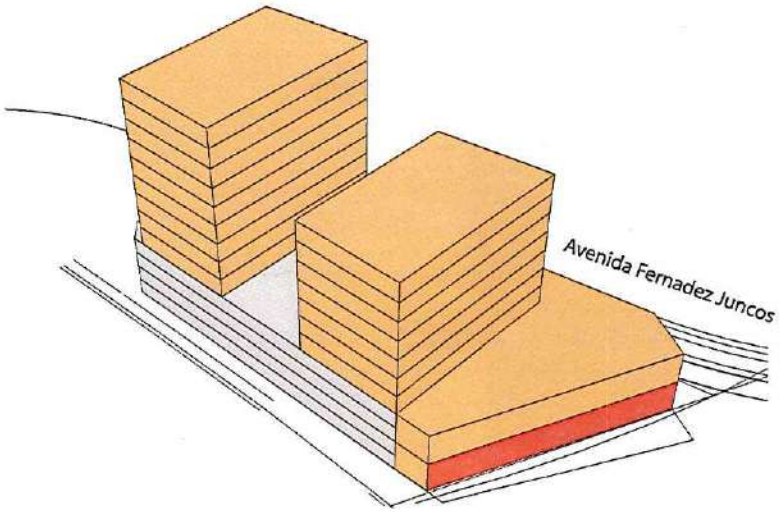


FIG. 5.11.3

C. Parking and Service

- Provide an integrated solution for access and service of both public and support areas, including parking, supply delivery, storage, waste management and security.
- Parking and service entries may only be located on Avenida Fernández-Juncos.
- Conceal parking structures with hotel uses on Avenida Fernández-Juncos and Block F Park, or where necessary with landscape or architectural screening to minimize their visibility.
- Exposed parking structure facades may not exceed 18m (60'), with the possible exception of the east façade facing PR1. Care should be taken to minimize visibility of parking structures facing the Miramar neighborhood.
- Service and parking entries should be treated with care so as not to compromise the quality of the public realm.

MASSING

- Building design should carefully define the pedestrian scale of all sides of the block.
- Building massing should have a clearly articulated base and mid-section defining the street edge with a height between 12m (40') minimum and 18m (60') maximum to FAA height limitations.
- Building massing without a setback may be acceptable if appropriate shading and scaling elements are introduced which enhance the streetscape and pedestrian experience.
- Buildings should maintain a clearly defined street wall along the park and on all other sides of the block.

DESIGN OBJECTIVES

A. General

- Block F will be a mid to high rise development that forms an important transition between the Miramar neighborhood and the District. Building typology should thus relate to both the District and Miramar.
- Block G Park on the north side of the parcel is to provide a shared amenity to the development and the neighborhood, connecting a point of possible crossing into the Miramar neighborhood both physically and visually to the intersection of Avenida Fernández-Juncos and Baldorioty de Castro Boulevard. Sightlines link this open space to the larger Paseo of the Convention District as it transitions to the Isleta Crossing and across Intersection 5 to the San Juan Waterfront Canal Walk.

B. Hotel

- Give the hotel prominence within the block pattern.
- Optimize views and visibility for oncoming traffic.
- Have regard for access and maximization of view corridors.
- Orient public uses to Avenida Fernández-Juncos and Block G Park. Programs which use outdoor terraces are encouraged facing Block G Park.
- Locate hotel pre-function and lobby areas with transparent facades along the edges of the block to animate the streets. Avoid blank elevations on public faces of buildings.
- Service and BOH functions should be tucked inside the block and their visibility to the public streets minimized.

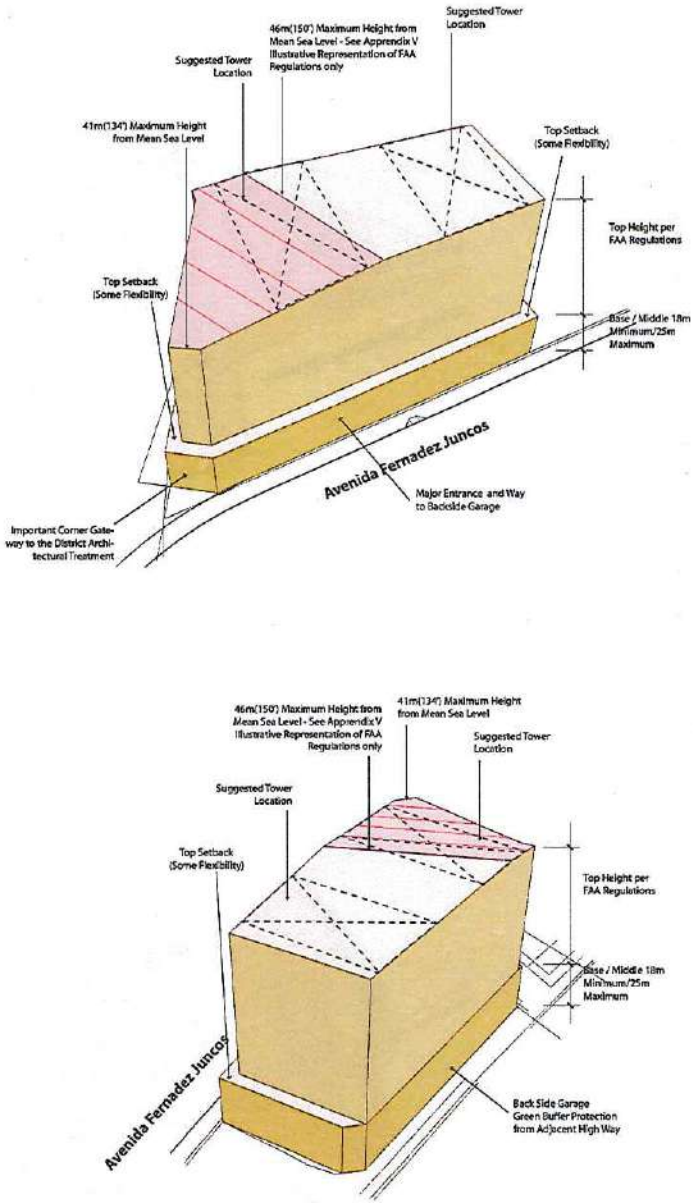


FIG. 5.11.2: BUILDING ENVELOPE FROM THE WEST (TOP), AND THE EAST (BOTTOM)



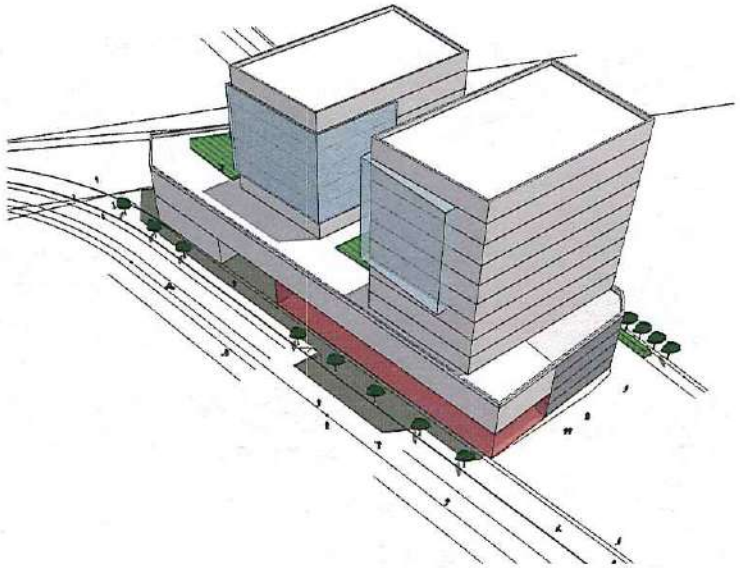
FIG. 5.11.2
BUILDING ENVELOPE
Block F

DESIGN CHALLENGES

- Block F is a hotel block in the primarily residential Fernandez-Juncos area of the District plan. It is also a transitional block to the existing Miramar residential neighborhood. The design of Block F must successfully negotiate the shift in scale of buildings from the mixed density of Miramar and that of the District.
- Block F is bounded by PR1 along its entire east side. Care should be taken to buffer the development from the negative effects of high traffic levels.
- Block F is prominently located at the end of Center Street and its visibility on this access is key to its connection with the rest of the Puerto Rico Convention District.
- Innovation in architectural and sustainable design is encouraged, especially demonstrating an understanding of local climate, the interaction between interior and exterior space, orientation, pedestrian comfort, and the image of a culturally grounded yet contemporary and sophisticated Puerto Rico.
- The development should meet LEED Silver rating standards or better.

ENGINEERING AND GEOTECHNICAL

- No significant structural issues are expected on Block D other than those noted in Section 2.
- Implementation of several different types of structural systems may be necessary to meet the specific requirements of different program spaces.



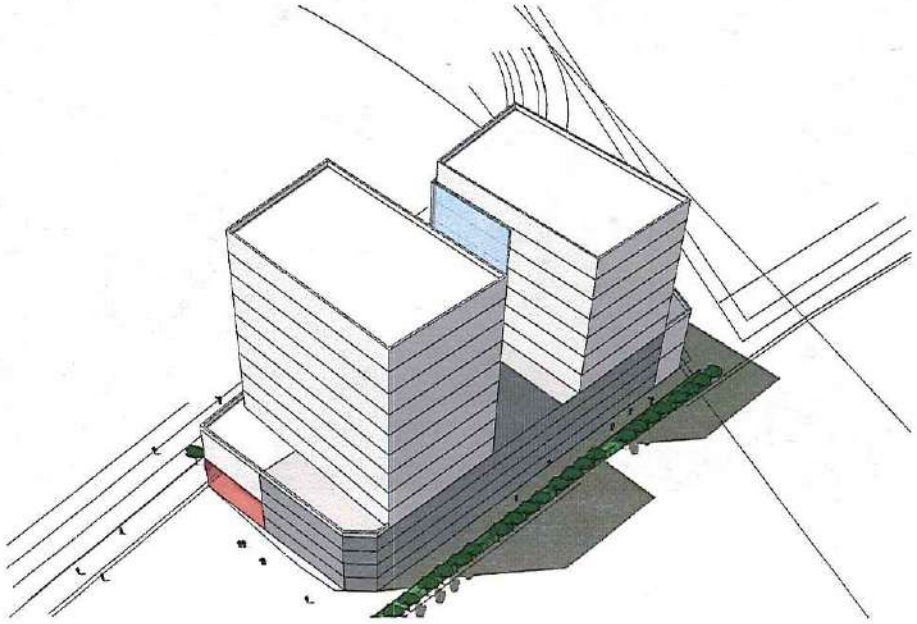


FIG. 5.11.4

FIG. 5.11.4
SAMPLE MASSING
Block F

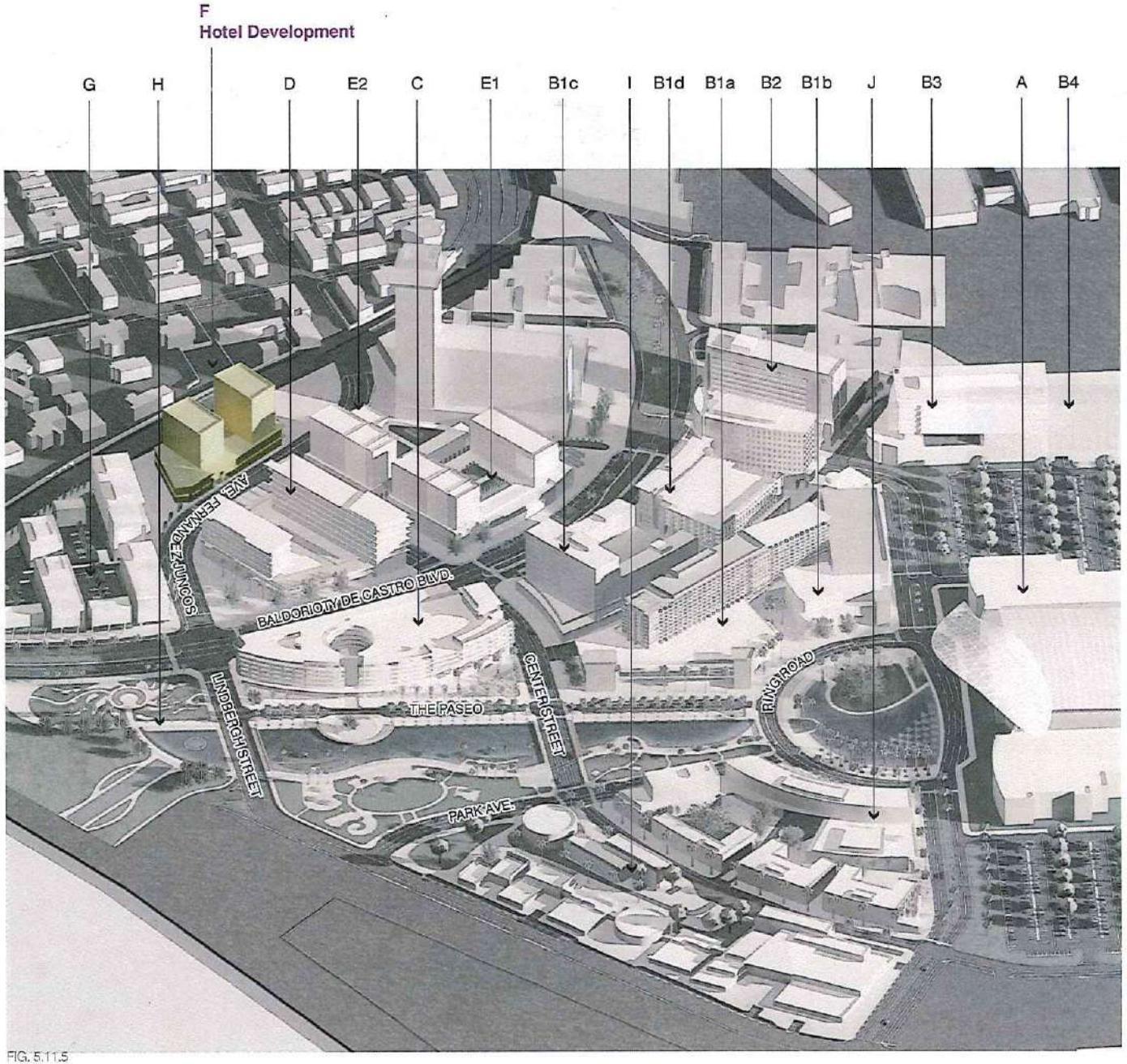


FIG. 5.11.5

FIG. 5.11.5
SAMPLE AXONOMETRIC
Block F

5.12 BLOCK G
MIXED RESIDENTIAL/HOTEL DEVELOPMENT LOCATION

- Block G is bounded by private property to the north, PR 1 to the east, Avenida Fernández-Juncos and the Block F Park to the south, and Baldorioty de Castro Boulevard to the west. Block G is bisected by a public way (G Street),and a 12m (40') buffer zone is preserved along the property line abutting PR1 for future roadway construction.
- Importantly, a park or plaza on the south side of the parcel is to provide a shared amenity to the development and the neighborhood, connecting both physically and visually to the Miramar neighborhood. Sightlines link this open space with the Block D park and to the larger Paseo of the Convention District as it transitions to the Isleta Crossing and across Intersection 5 to the San Juan Waterfront Canal Walk.
- Primary Pedestrian Access: Baldorioty de Castro Boulevard, Avenida Fernández-Juncos, the Block F Park, and 'G Street'.
- Vehicular Access: From Avenida Fernández-Juncos to G Street only. No other access for parking and service are allowed from Avenida Fernández-Juncos or Baldorioty de Castro Boulevard.

APPROXIMATE DIMENSIONS

- Parcel Size: 19,663 SM (211,654 SF)
- Height of the base and middle: 12m (40') minimum, 18m (60') maximum
- Maximum Height of Construction: Block G falls within the FAA regulated height envelope, with construction height limited to between 19m (62.33') and 40m (131.2') from Mean Sea Level in a 7:1 slope roughly north to south across the block [See Fig. 5.1.7a and Appendix V].
- FAA airspace restrictions apply due to its proximity to the Fernando L. Ribas Dominicci Airport.
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Residential, hotel, commercial, parking and service

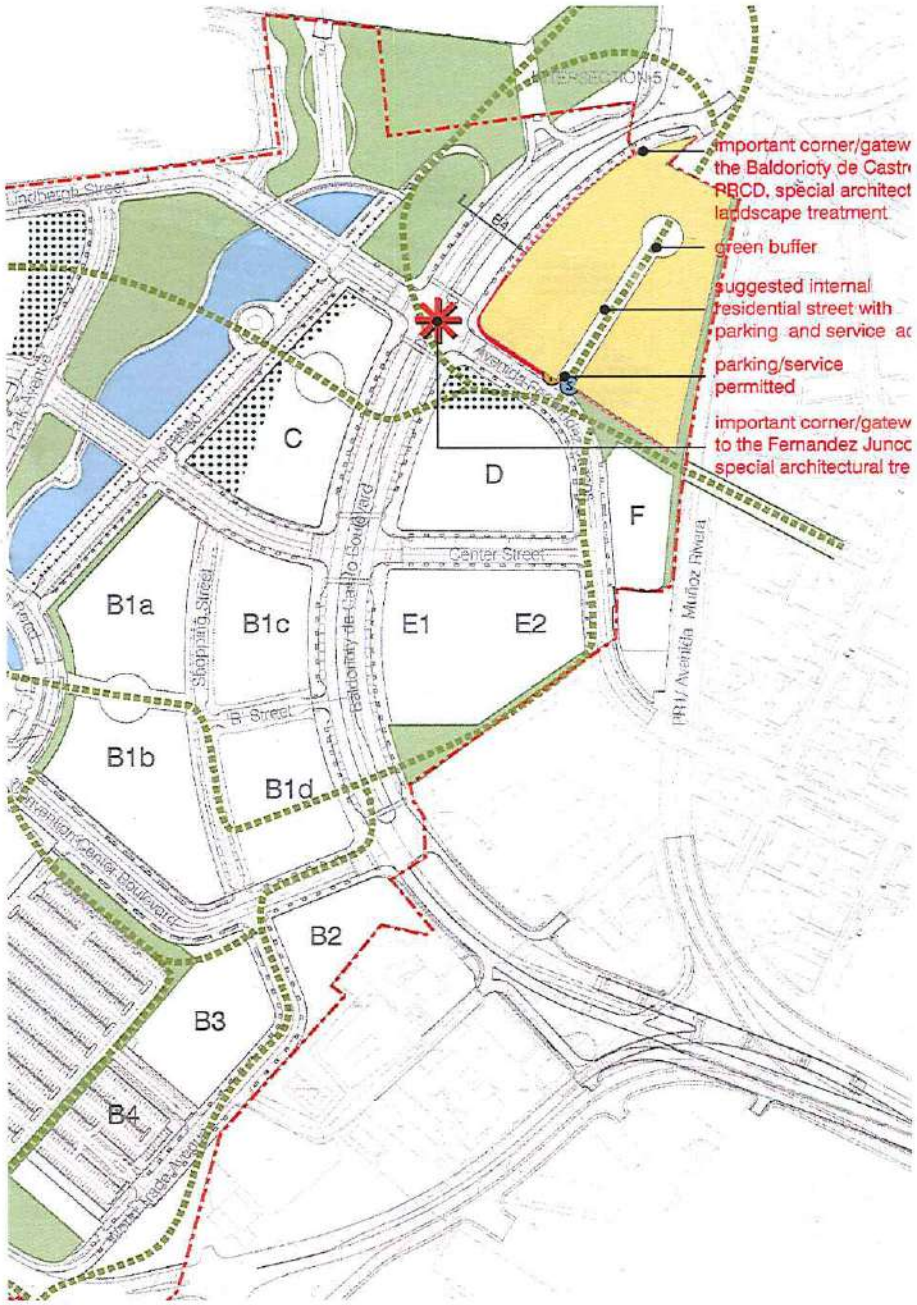


FIG. 5.12.1

FIG. 5.12.1
BLOCK PLAN
Block G



FIG. 5.12.2
BUILDING ENVELOPES
Block G

1.0
2.0
3.0
4.0
5.0
BLOCK GUIDELINES
6.0
A

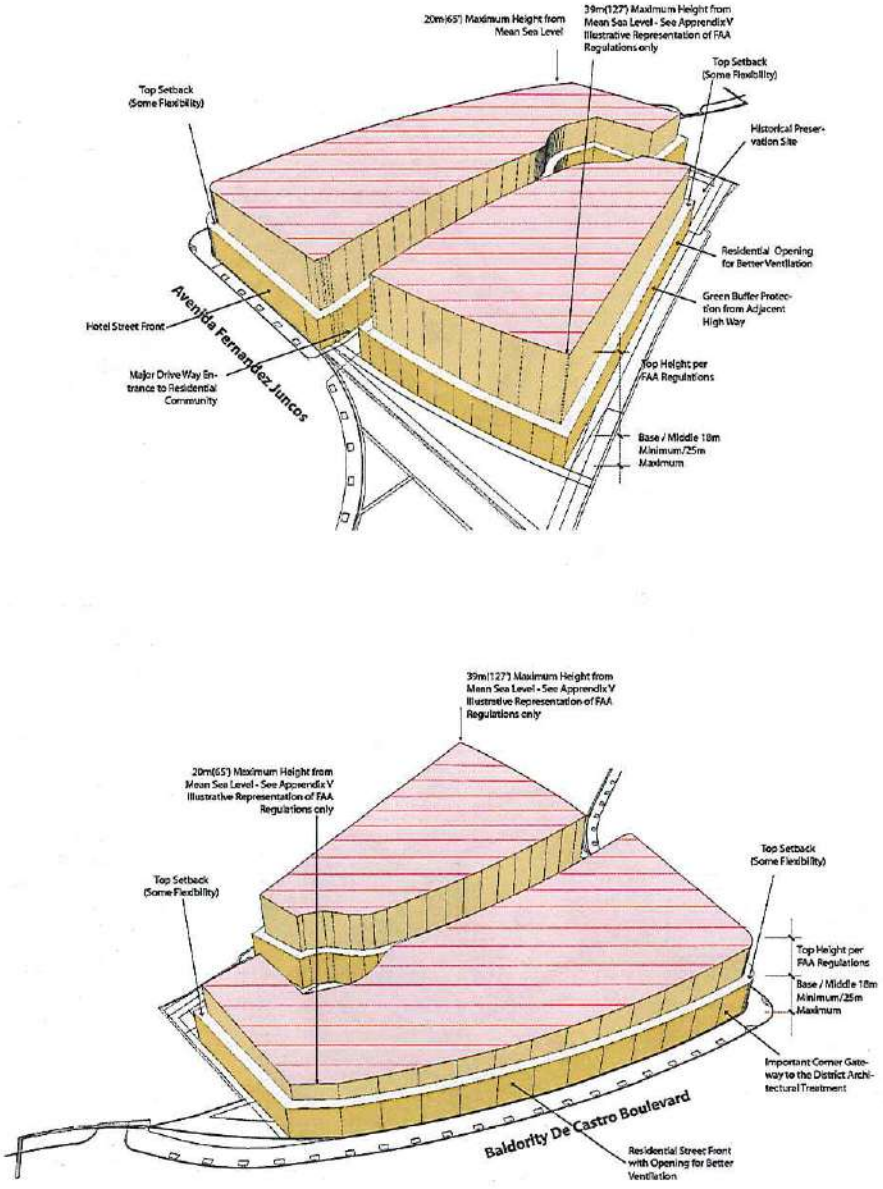


FIG. 5.12.2: BUILDING ENVELOPE FROM THE SOUTH (TOP), AND THE NORTH (BOTTOM)

GROSS SQUARE FOOTAGE

- Residential: 190,000 SF (100 UVBs)
- Hotel: 100,776 SF (max. 150 keys)
- Parking: 466 spaces
- Parking Levels: 4 levels max. above grade

DESIGN OBJECTIVES

A. General

- Block G will be a low to mid-rise development that forms an important transition between the Miramar neighborhood and the District. Building typology should thus relate to both the District and Miramar.
- The definition of G Street should be at a more intimate scale than the other major arteries bounding the development. Special consideration should be given where it meets Block F Park.
- Block G Park on the north side of the parcel is to provide a shared amenity to the development and the neighborhood, connecting a point of possible crossing into the Miramar neighborhood both physically and visually to the intersection of Avenida Fernández-Juncos and Baldorioty de Castro Boulevard. Sightlines link this open space to the larger Paseo of the Convention District as it transitions to the Isleta Crossing and across Intersection 5 to the San Juan Waterfront Canal Walk.

B. Residential

- Residential buildings should demonstrate sensitivity to the nuances of local climate and setting.
- A patio or courtyard typology is encouraged to provide a continuous framing of streets and internal open space.
- Internal open space for natural ventilation, light and outdoor activities is encouraged both at grade and on parking structures.
- Multiple or individual housing entrances located frequently and at street level are encouraged on all streets to maintain streetscape security and activity.
- Multiple balconies are encouraged to enrich the Streetscape and offer a transition from the public realm to private residential space.
- Building design should take advantage of the proximity to commercial/restaurants, especially on adjacent Block D and F parks,

recreation in the Convention District and the adjacent residential neighborhood of Miramar.

D. Hotel

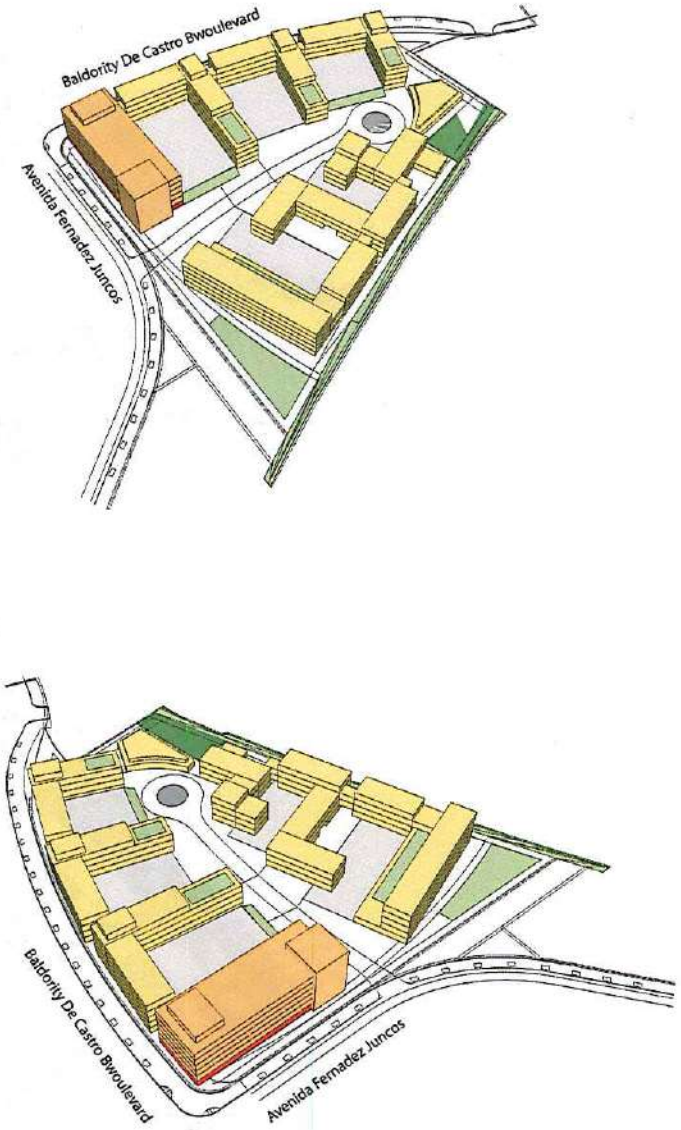
- Give the hotel prominence within the block pattern.
- Optimize views and visibility for oncoming traffic.
- Have regard for access, internal traffic circulation and maximization of view corridors. The drop-off should be located on the Block G internal street.
- Orient public uses to the Block F Park and Avenida Fernandez-Juncos.
- Locate hotel pre-function areas with transparent facades along the park to animate the public space. Avoid blank elevations on public faces of buildings.
- Service and BOH functions should be tucked inside the block and their visibility to the public streets minimized.

E. Parking and Service

- Provide an integrated solution for access and service of both public and support areas, including parking, supply delivery, storage, waste management and security.
- Parking and service entries may only be located on G Street.
- Conceal parking structures with residential and hotel uses, or where necessary with landscape or architectural screening to minimize their visibility.
- Exposed parking structure facades may not exceed 18m (60').
- Service and parking entries should be treated with care so as not to compromise the quality of the public realm.

MASSING

- Building design should carefully define the pedestrian scale of all sides of the block.
- Building massing should have a clearly articulated base and mid-section defining the street edge with a height between 12m (40') minimum and 18m (60') maximum to FAA height limitations.
- Building massing without a setback may be acceptable if appropriate shading and



LEGEND

- Residential
- Hotel/Entertainment
- Parking
- Open Green Space

FIG. 5.12.3
USE DIAGRAM
Block G

FIG. 5.12.3

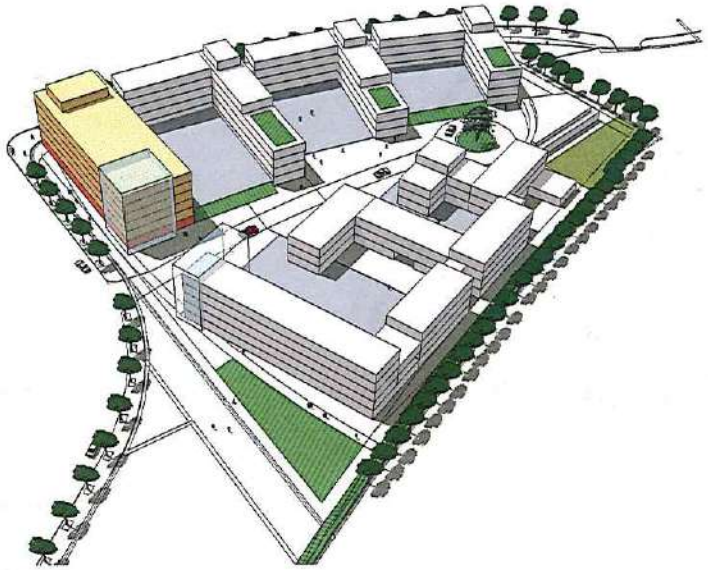




FIG. 5.12.4
SAMPLE MASSING
Block G

scaling elements are introduced which enhance the streetscape and pedestrian experience.

- Residential program should be setback 6m (20') from the street to create a front yard and buffer residences from street traffic, especially on Baldorioty de Castro Boulevard. The street edge should be clearly defined by architectural or landsca e articulation which does not visually separate residences from the sidewalk and complements the pedestrian experience.
- Should use on Block G include commercial or office use, building mass for these functions, particularly at street level, may extend to the parcel limit up to the height of the previously noted base/middle setback.
- Buildings should nonetheless maintain a clearly defined street wall along the park and on all other sides of the block.

THE PARK

- The Park is a critical link in the sequence of open spaces from Avenida Fernadez Juncos to the north end of the Paseo Park and through to Miramar. Creating an attractive, landscaped space with a well-proportioned built edge with lively and successful uses is a critically important design goal.
- The design of the plaza should blend with the overall sensibility and materiality of the District public realm.
- The design of the plaza should take on the human qualities of the plazas of old San Juan but not mimic their design with historicist treatments. The design of the plaza is intended as a casual and passive recreational venue of high quality detailing and materials.
- Physical boundaries of the plaza are as follows: North: Block G Building line as defined on the block plan; East: District Boundary and PR 1: South: Block F parcel boundary; West: Avenida Fernández Juncos
- Shaded areas are highly desirable.
- Furniture and seating are important, especially associated with shaded areas.
- Nighttime appearance and lighting that is attractive and provides security should also be designed with sensitivity to the adjacent housing.
- A sculpture/art work and/or a water element such as a fountain is recommended but not required.

DESIGN CHALLENGES

- Block G is a mixed use block on the primarily office-oriented Baldorioty de Castro Boulevard. It is also a transitional block to Intersection 5 and the Isleta of San Juan as well as the existing Miramar residential neighborhood. The design of Block G must successfully negotiate the shift in scale of buildings from mid-rise offices to low-rise housing, especially given the height limitations imposed by its proximity to the Fernando L. Ribas Dominicci Airport.
- Block G is bounded by PR1 along its entire east side. Care should be taken to buffer residences from the negative effects of high traffic levels.
- Block G forms one half of the 'gateway' expression at the intersection of Avenida Fernández-Juncos and Baldorioty de Castro Boulevard, on the major vehicular approach to the District from both these major arteries. Building articulation at this corner should enhance a sense of arrival.
- The transition from the highly public Avenida Fernández-Juncos and Baldorioty de Castro Boulevard to the private territory of the residential entrances should be carefully addressed.
- Entrances to commercial, offices and parking should be articulated to meet the needs of each element in this mixed-use environment, while retaining the distinct qualities of the Baldorioty and Fernández Juncos urban character zones.
- An area of archeological significance located at the northeast corner of the site must be protected.
- A significant difference in topographical elevation exists from north to south across the site. Architectural massing and landscape design will require creative responses to negotiate the difference in section while maintaining pedestrian scale and connection on all streetscapes.
- Expressing and articulating the more intimate scale of G Street.
- Innovation in architectural and sustainable design is encouraged, especially demonstrating an understanding of local climate, the interaction between interior and exterior space, orientation, pedestrian comfort, and the image of a culturally grounded yet contemporary and sophisticated Puerto Rico.
- The development should meet LEED Silver rating standards or better.

ENGINEERING AND GEOTECHNICAL

- No significant structural issues are expected on Block D other than those noted in Section 2.
- Implementation of several different types of structural systems may be necessary to meet the specific requirements of different program spaces.

1.0
2.0
3.0
4.0
5.0 BLOCK GUIDELINES
6.0
A

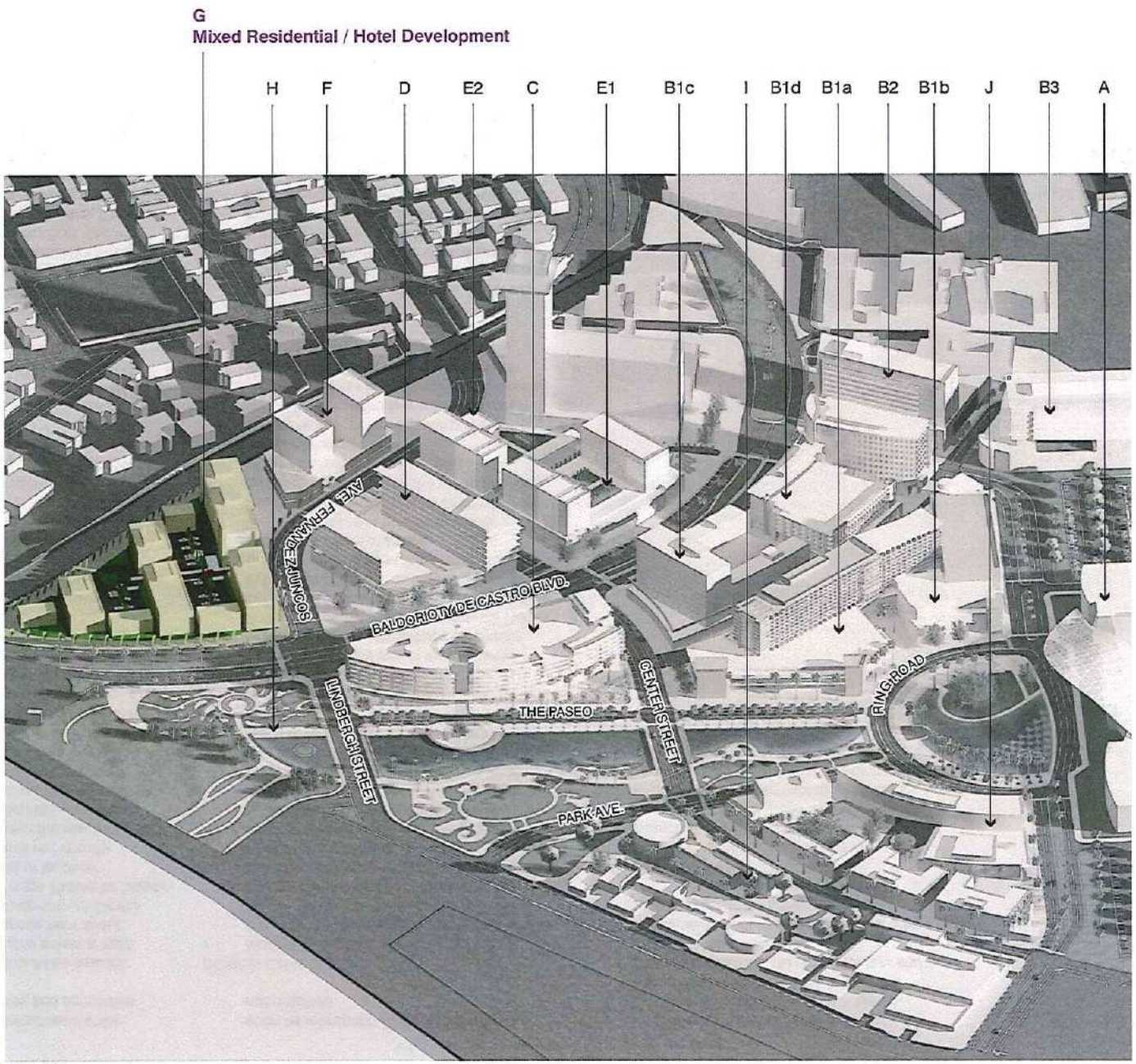


FIG. 5.12.5

FIG. 5.12.5
SAMPLE AXONOMETRIC
Block G

5.13 BLOCK I
MUSEUM

LOCATION

- Block I is bound by Convention Center Boulevard to the west, Park Avenue to the east, Center Street to the south and Lindbergh Street to the north.
- Primary pedestrian access: Primarily Park Avenue and Center Street, some from Convention Center Boulevard.
- Vehicular access: From Convention Center Boulevard and and Lindbergh Street Drop-Off and parking access on Center Street. Service entrances are discouraged on Center Street. No entries for parking and service are allowed from Park Avenue. Parking will be located at the Puerto Rico Convention Center west parking lot.

APPROXIMATE DIMENSIONS

- Parcel size: 24,620.56 SM (265,013.54 SF)
- Height of the base and middle: 12m (40') minimum, 18m (60') maximum
- Maximum height of construction: Block I falls within the FAA regulated height envelope, with construction height limited to between 8m (26.25') and 20m (65.6') from Mean Sea Level in a 7:1 slope roughly north to south across the block [See Fig. 5.1.7a and Appendix V].
- FAA airspace restrictions apply due to its proximity to the Fernando L. Ribas-Dominicci Airport.
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Civic/cultural facility, parking and service

GROSS SQUARE FOOTAGE

- Museum: 152,592 sf
- Parking: 180 spaces at off-site location
- Parking levels: 4 levels max. above grade

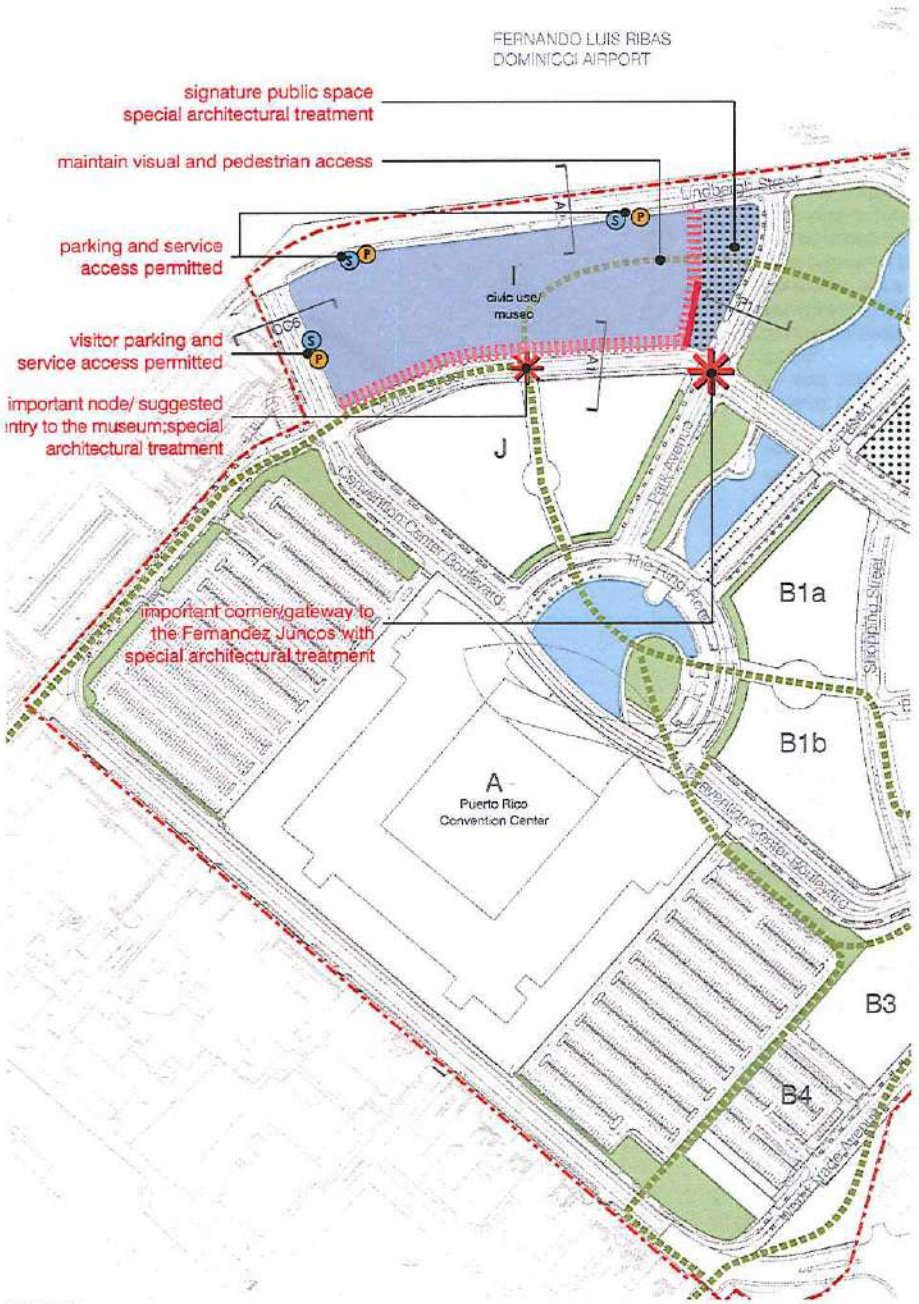


FIG. 5.13.1

FIG. 5.13.1
BLOCK PLAN
Block I





FIG. 5.13.2
BUILDING ENVELOPES
Block I

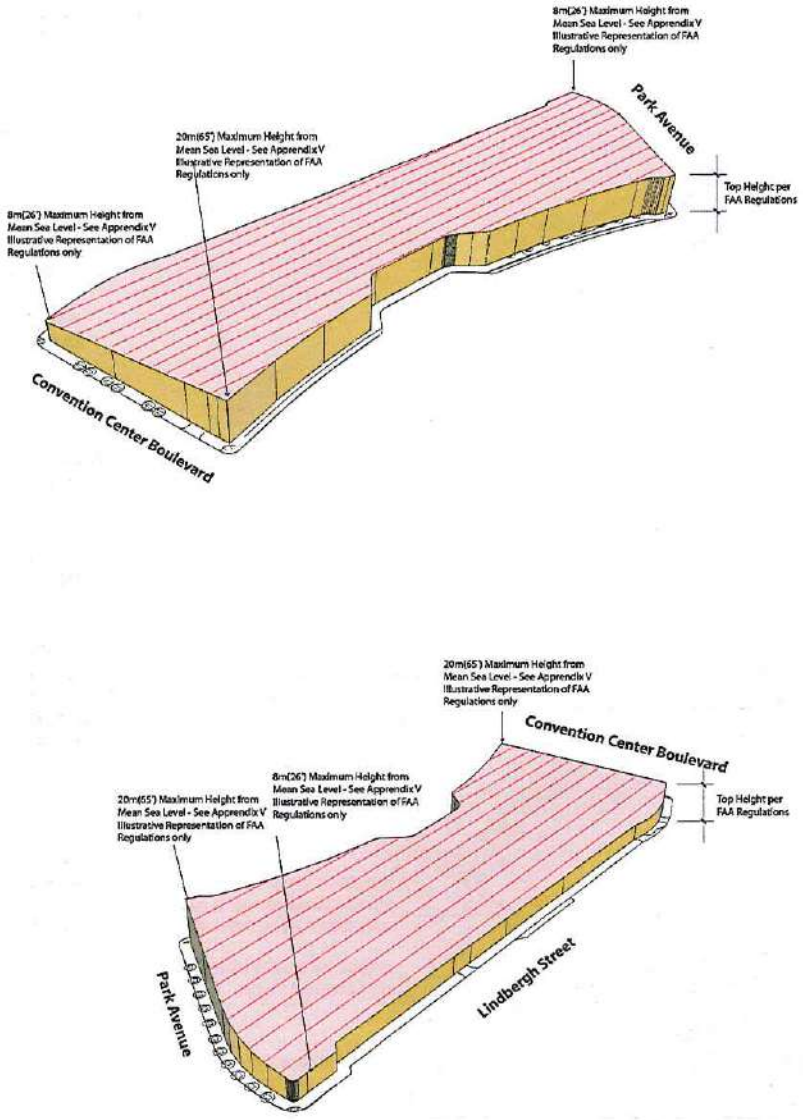


FIG. 5.13.2: BUILDING ENVELOPE FROM THE SOUTH (TOP), AND THE NORTH (BOTTOM)

DESIGN OBJECTIVES

A. General

- The Puerto Rico Museum is a cornerstone of the Convention District. It is an educational, cultural and civic landmark of international caliber with exhibitions focused on the aquatic flora, fauna and ecosystems of Puerto Rico and the Caribbean. The importance of this building must be conveyed through modern and distinctive architecture.
- The proposed site will have good visibility and accessibility as part of the completed Puerto Rico Convention District development with linkages to the San Antonio Canal.
- The Museum will be a defining presence the western edge of the Paseo and visible from the northern approach to the Puerto Rico Convention Center.
- Innovation in architectural and sustainable design is encouraged, especially demonstrating an understanding of local climate, the interaction between interior and exterior space, orientation, pedestrian comfort, and the image of a culturally grounded yet contemporary and sophisticated Puerto Rico.

B. Parking and Service

- The majority of visitor and staff parking for this facility will be located at the west parking lot of the Puerto Rico Convention Center. A small amount of on-site may be provided.
- Provide an integrated solution for access and service of both public and support areas, including parking, supply delivery, storage, waste management and security.
- A visitor drop-off can be located on Center Street.
- Structured parking can only have a street wall along Convention Center Boulevard, which must be concealed with an architectural screen, or plantings, and can be accessed from Convention Center Boulevard or an internal hotel drop-off.
- Exposed parking structure facades may not exceed 18m (60').
- Parking entry should not compromise the quality of the public realm.
- Service entries located along Convention Center Boulevard should not be directly visible from the Convention Center.

MASSING

- Building design should carefully define the pedestrian scale on the all sides of the block and maintain a strong street edge on all sides of the block.
- The street edge of the building should be clearly defined by architectural or landscape articulation that complements the design of the public sidewalk and the Paseo Park.
- Buildings should respect the scale and the importance of the Convention Center. Their massing should compliment the Convention Center and not overshadow it.
- Building massing should have a clearly articulated base and mid-section defining the street-wall with a height between 12m (40') minimum and 18m (60') maximum with a minimum setback of 3m for towers above rising to FAA height limitations.
- Building massing should not be monolithic in the direction of the prevailing winds. Apertures for wind must be large enough for currents to pass through without creating pedestrian-level gusts. Street-level openings or apertures can be supplemented with architectural screens to maintain the perceived continuity of the street edge.
- Street level openings or apertures for pedestrian or vehicular movement to interior courtyards or paths, when present, should maintain a height of at least 30' and a height to width proportion of at least 2:1.

DESIGN CHALLENGES

- Block I is seen as a signature buildings situated prominently in the Puerto Rico Convention District with four very public facades. Two are particularly significant; east to the Paseo, and south facing the hotel on Block J.
- The design of Block I must address these adjacencies and adopt an architectural expression and use configuration that contributes to the public realm.
- Consideration should be given to creating a visual and noise barrier to the Airport runway on the museum site.
- The proposed site will have good visibility and accessibility as part of the completed Puerto Rico Convention District development with linkages to the San Antonio Canal.

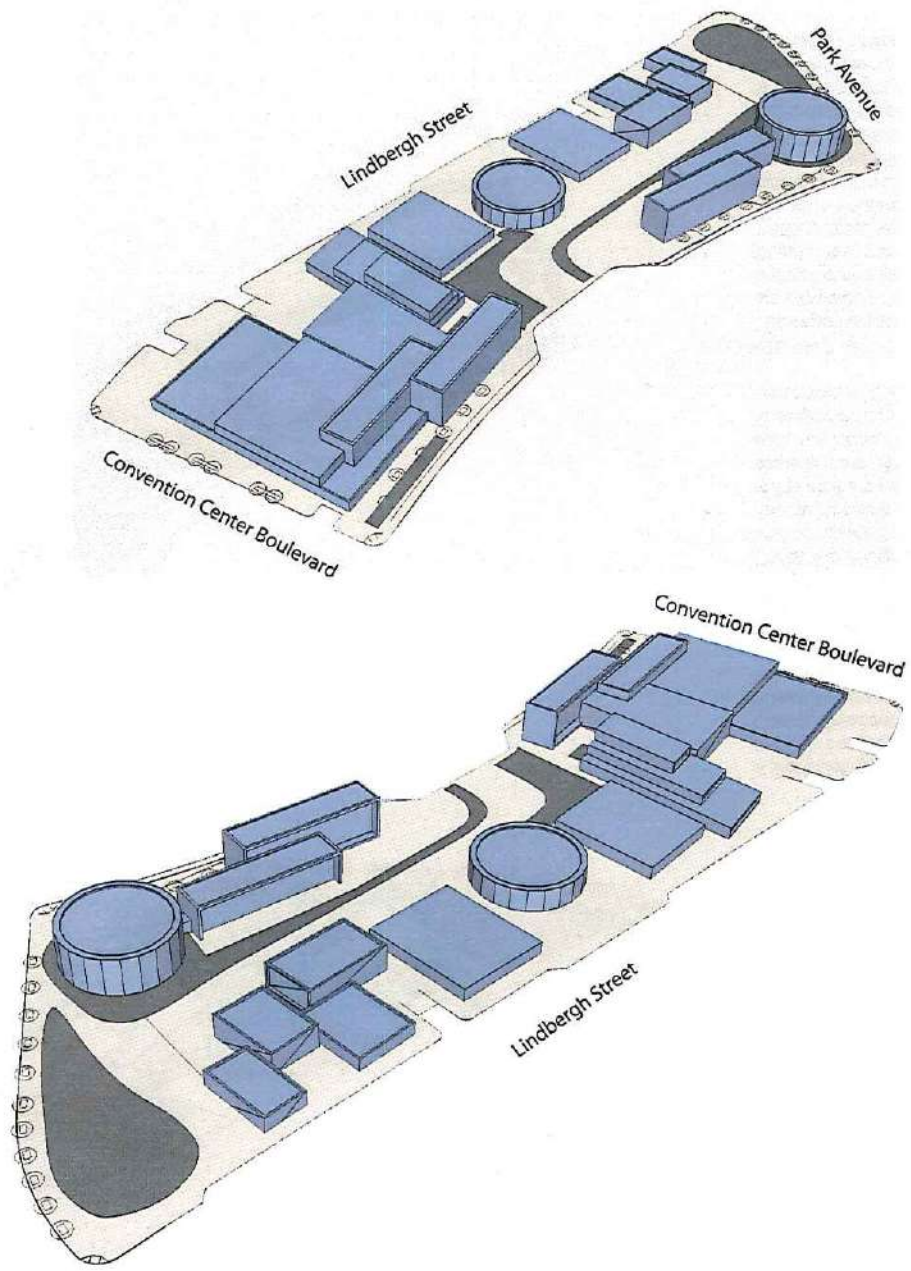
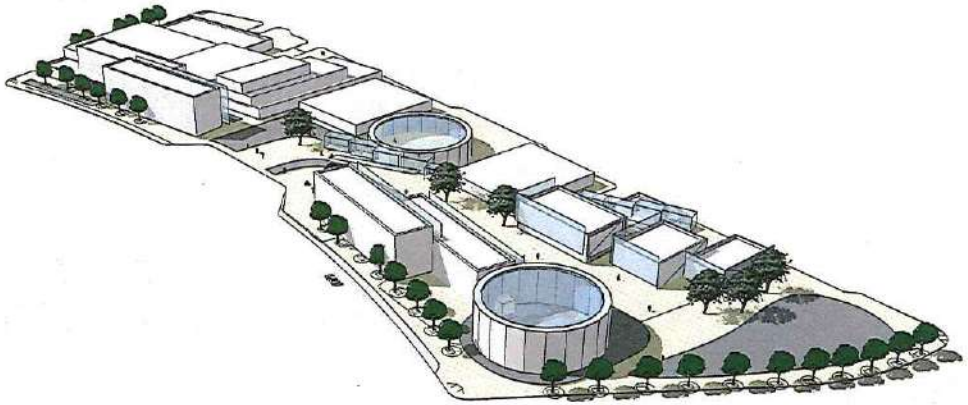


FIG. 5.13.3

FIG. 5.13.3
USE DIAGRAM
Block I



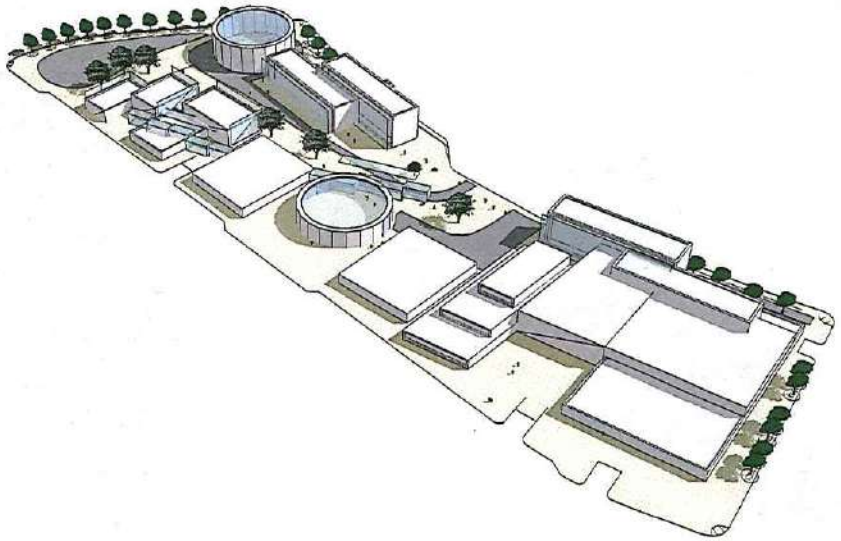


FIG. 5.13.4
SAMPLE MASSING
Block I

FIG. 5.13.4

- A significant pedestrian path is required through the block to link the Convention Center, Crescent Park, the hotel and the Puerto Rico Museum. The desire is to make this a very active grade-level pedestrian space with sidewalk level access.
- Block I is located in the foreground of panoramic views from the Convention Center terrace across the San Antonio Canal; the design should strive to preserve and compliment those views.
- The major public façades facing the parks to the east are encouraged to allow the easterly trade winds (originating from the east, northeast and southeast) to penetrate through the site, taking full advantage of the water bodies' cooling effect at night.

ENGINEERING AND GEOTECHNICAL

- The important structural issues for Block I are expected to be large base shears for both wind and seismic loads.
- Column loads are expected to range from 1,600 to 2,000 kips for interior columns and from 1,000 to 1,300 kips for exterior columns. Base shears are expected to range from 2,500 to 3,600 kips for seismic and from 3,200 kips to 3,600 kips for wind.
- Implementation of several different types of structural systems may be necessary to meet the specific requirements of spaces that meet a variety of differing program needs.

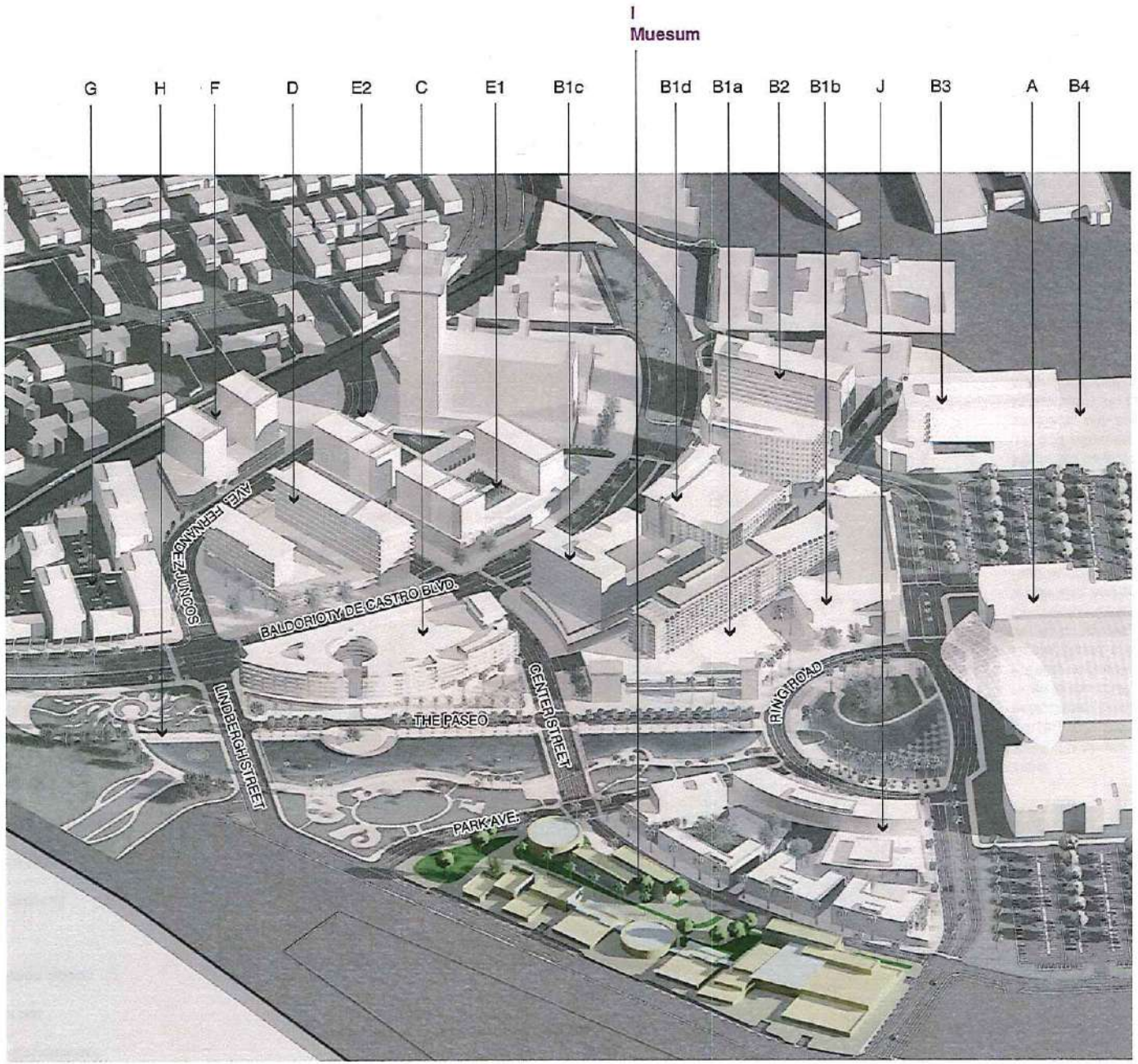


FIG. 5.13.5

FIG. 5.13.5
SAMPLE AXONOMETRIC
Block I

LEGEND

- Hotel/Entertainment
- Commercial
- Open Green Space
- Plaza
- Service Access
- Parking Access
- Important Public Façade
- Green Links
- Gateway
- District Boundary



FIG. 5.14.1

FIG. 5.14.1
BLOCK PLAN
Block J

5.14 BLOCK J HOTEL

LOCATION

- Block J is bound by Convention Center Boulevard to the west, Park Avenue to the east, Center Street to the north and Ring Road to the south.
- Primary pedestrian access: Ring Road, Center Street, and Park Avenue.
- Vehicular access: From Center Street and Convention Center Boulevard No entries for parking and service are allowed from the Ring Road or Park Avenue.

APPROXIMATE DIMENSIONS

- Parcel size: 18,461.57 SM (198,718.67 SF)
- Height of the base and middle: 12m (40') minimum, 18m (60') maximum
- Maximum height of construction: Block J D falls within the FAA regulated height envelope, with construction height limited to between 29m (95') and 44m (144') from Mean Sea Level in a 7:1 slope roughly north to south across the block [See Fig. 2.10.1 and Appendix 8].
- FAA airspace restrictions apply due to its proximity to the Fernando L. Ribas-Dominicci Airport.
- Parcel developers are responsible for conducting an Aeronautical Study and obtain a Determination of No Hazard to Air Navigation from the FAA.

USES

Hotel, commercial, parking and service

GROSS SQUARE FOOTAGE

- Hotel: 322,896 sf (400 keys)
- Commercial: 10,000 sf
- Parking: 223 spaces
- Parking levels: 4 levels above grade max.

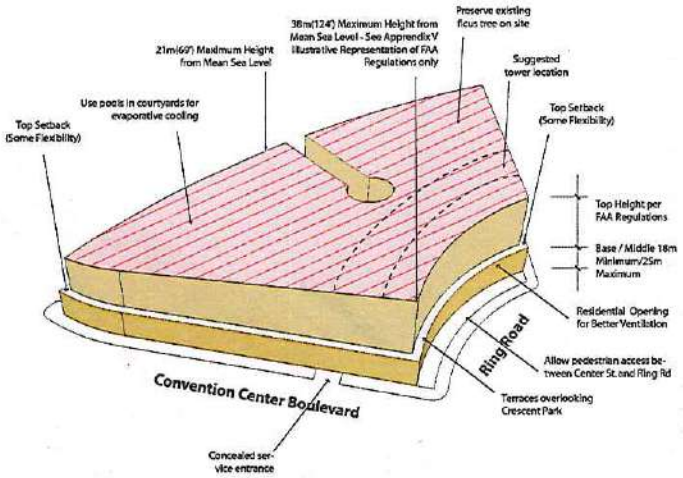
DESIGN OBJECTIVES

A. General

- One of three hotels located immediately adjacent to the Puerto Rico Convention Center, the hotel on Block J will attract corporate travelers and convention center visitors who seek a more intimate and unique lodging experience. While maintaining 400 guestrooms and complete with ballroom, meeting and banquet facilities, it is conceived more like a boutique hotel with a personable scale and fluidity between interior and exterior spaces, its massing being necessarily low due to the proximity of the Dominicci Airport.
- The hotel will define the western edge of the Crescent Park, facing the entrance of the Puerto Rico Convention Center. It will become an architectural counterpart to the Headquarters Hotel on Blocks B1a and B1b.
- Innovation in architectural and sustainable design is encouraged, especially demonstrating an understanding of local climate, the interaction between interior and exterior space, orientation, pedestrian comfort, and the image of a culturally grounded yet contemporary and sophisticated Puerto Rico.

B. Hotel

- Create a unique, contemporary architectural experience that draws upon the simplicity of the vernacular, and vernacular-inspired modernism, especially in response to climate.
- Provide an interesting arrival sequence and approach to the Convention Center, the Museum, and the Paseo.
- Orient public uses to the Ring Road and Park Avenue.
- Service and BOH functions should be tucked inside the block and their visibility to the public streets minimized.
- Create a special, public, pedestrian-oriented entry point on the Ring Road.
- Create a pleasant inner courtyard that is shaded with trellises, and native trees, that can be viewed from wind/view apertures along the street façade. Public access through the inner courtyard is encouraged.



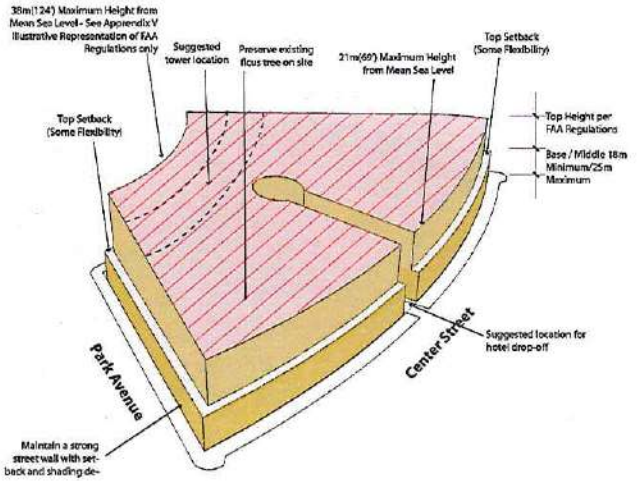


FIG. 5.14.2: BUILDING ENVELOPE FROM THE SOUTH (TOP), AND THE NORTH (BOTTOM)

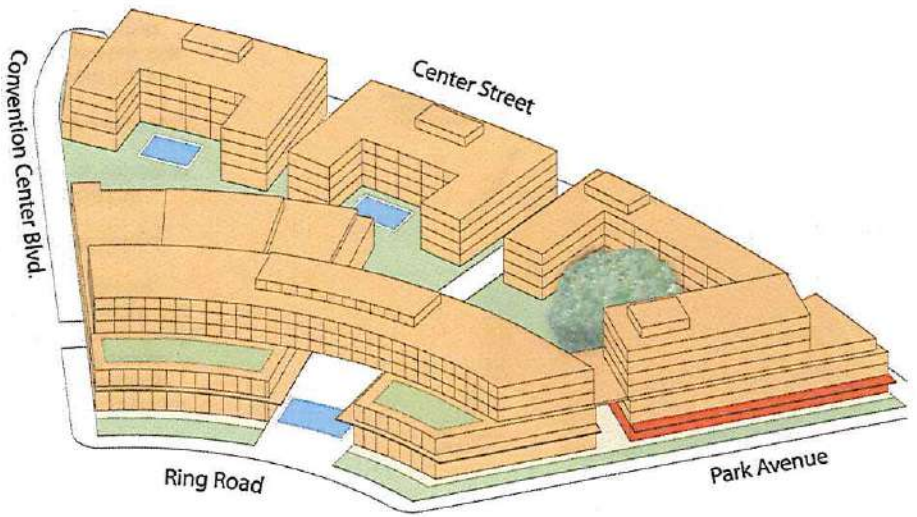




FIG. 5.14.2
BUILDING ENVELOPES
Block J

LEGEND

- Hotel/Entertainment
- Commercial
- Open Green Space



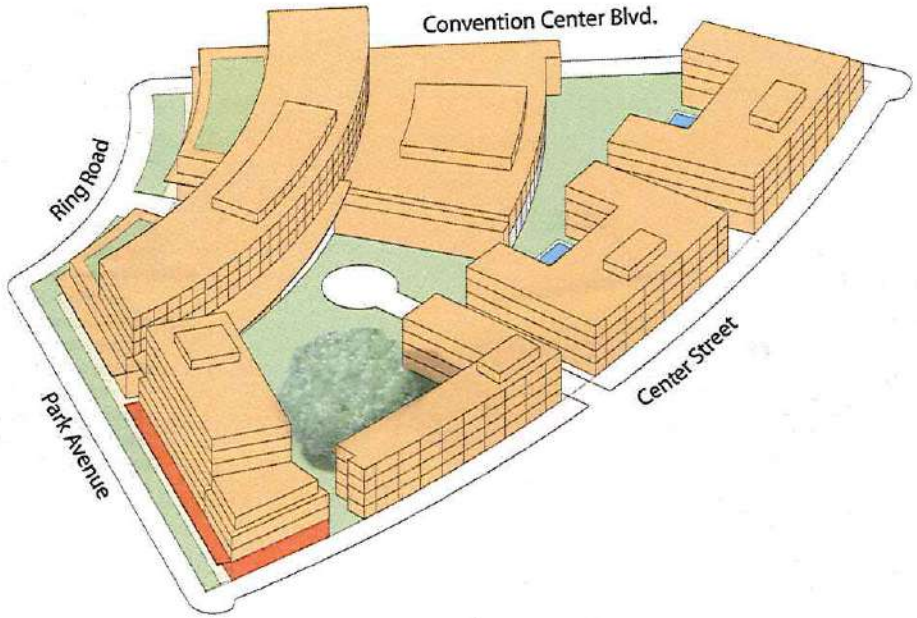


FIG. 5.14.3
USE DIAGRAM
Block J

FIG. 5.14.4

B. Commercial Use

- Commercial frontage along Park Avenue and Ring Road should emphasize restaurant use with opportunities for use of outdoor terraces. The hotel is encouraged to locate its restaurant functions on the Ring Road or Park Avenue to reinforce the character of its edge, as well as take advantage of views and access to the Paseo Park and the Convention Center.
- All commercial establishments should be high quality specialty stores serving a variety of users. The commercial strategy should be integrated with the emerging public nature of the District as a draw for locals and visitors, with special attention paid to the needs of Convention Center users.
- Commercial use on the Ring Road can occupy two floors, with public restaurant or café terraces on the upper floor. Establishments located on two floors can have a maximum total commercial area of 15,678 square feet.

C. Parking and Service

- Provide an integrated solution for access and service of both public and support areas, including parking, supply delivery, storage, waste management and security.
- Hotel drop-off can be located on or accessed from Convention Center Boulevard or Center Street.
- Structured parking can only have a street wall along Convention Center Boulevard, which must be concealed with an architectural screen, or plantings, and can be accessed from Convention Center Boulevard or an internal hotel drop-off.
- Exposed parking structure facades may not exceed 18m (60').
- Parking entry should not compromise the quality of the public realm.
- Service entries located along Convention Center Boulevard should not be directly visible from the Convention Center.

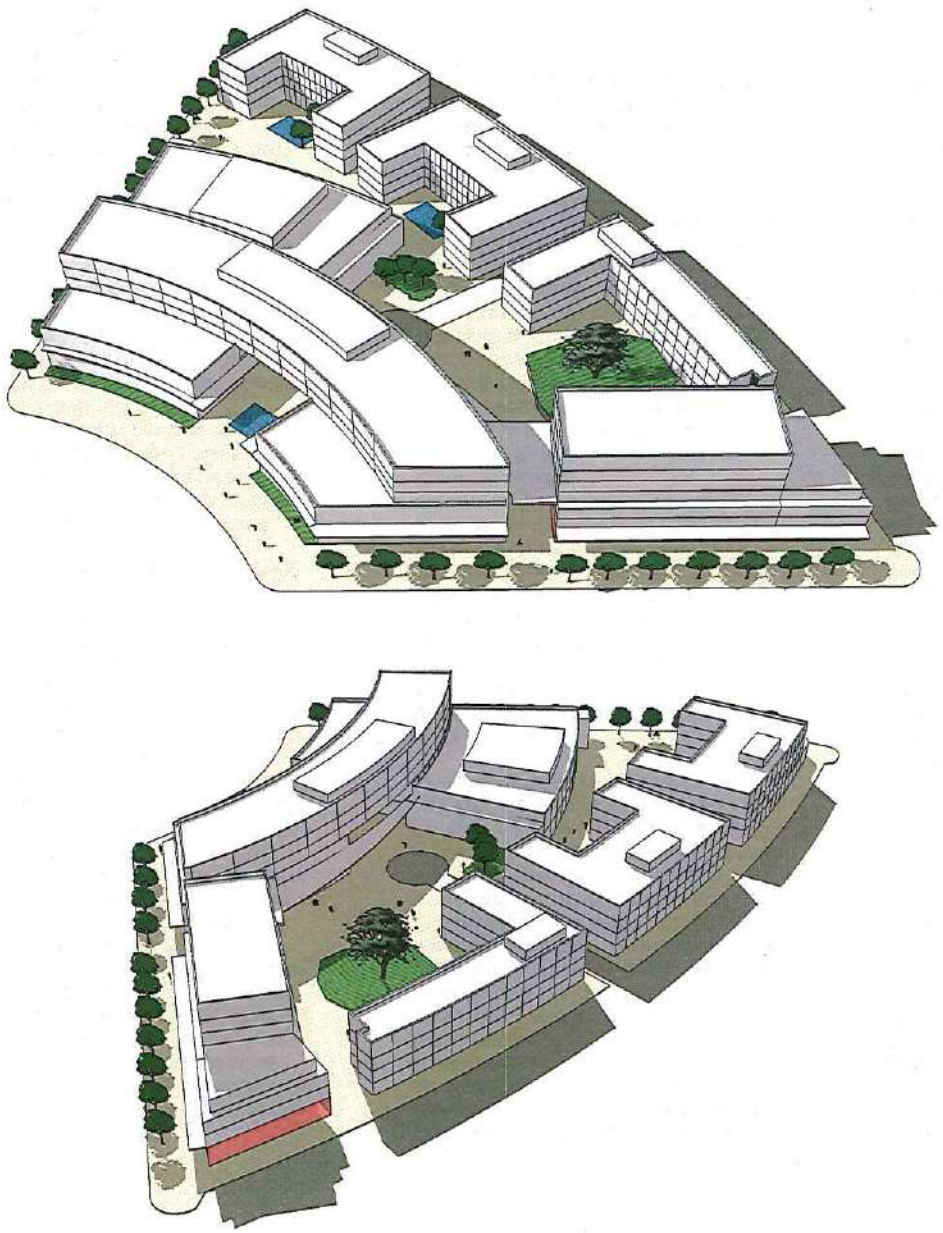


FIG. 5.14.4
SAMPLE MASSING
Block J

MASSING

- Building design should carefully define the pedestrian scale on the all sides of the block and maintain a strong street edge on all sides of the block.
- Buildings should maintain a strong street wall around the Ring Road and provide arcades as specified in the streetscape sections (See Fig. 4.7.2a and sample massing).
- The street edge of the building should be clearly defined by architectural or landscape articulation that complements the design of the public sidewalk and the Paseo Park.
- Buildings should respect the scale and the importance of the Convention Center. Their massing should compliment the Convention Center and not overshadow it.
- Buildings should be set back 6m (20') from the street to the south and west to create an additional tree-lined sidewalk or arcade to protect pedestrians from the sun and shield them from street traffic, as specified in the street sections. (See Figs. 4.2.9 and 4.2.10 and the sample massing). The setback can also be used as an outdoor sitting area for café and restaurants.
- Building massing should have a clearly articulated base and mid-section defining the street-wall with a height between 12m (40') minimum and 18m (60') maximum with a minimum setback of 3m for towers above rising to FAA height limitations.
- Towers should ideally be set back from the base/mid-section by at least 10', however, designers should feel free to propose alternative solutions while still maintaining the spirit of the Design Guidelines, and especially in response to the design of the hotel on Blocks B1a/B1b as part of an integrated framing of the Crescent Park.
- Building massing without a setback above the base/mid-section may be acceptable if appropriate shading and scaling elements are introduced which enhance the streetscape and pedestrian experience.
- Locate towers in the area indicated in the block guideline diagrams. These general locations are in keeping with the overall massing of the District.
- Orient the towers in the east- west direction to take full advantage of vistas looking north and south, and so as not to block eastern breezes.
- Building massing should not be monolithic in the direction of the prevailing winds. Apertures for wind must be large enough for currents to pass through without creating pedestrian-level gusts. Street-level openings or apertures can be supplemented with architectural screens to maintain the perceived continuity of the street edge.
- Street level openings or apertures for pedestrian or vehicular movement to interior courtyards or paths, when present, should maintain a height of at least 30' and a height to width proportion of at least 2:1.

DESIGN CHALLENGES

- Block J is seen as a signature hotel buildings situated prominently in front of the Puerto Rico Convention Center with four very public facades. Three are particularly significant; south towards the Crescent Park and Convention Center, east to the Paseo, and north facing the Puerto Rico Museum. The west side fronts Convention Center Boulevard and the flow of vehicular traffic destined for the entrance to the Puerto Rico Convention Center.
- Surrounded by major civic buildings and public parks, the design of Block J must address these adjacencies and adopt an architectural expression and use configuration that contributes to the public realm.
- This block spatially defines the west edge of the Crescent Park that is the beginning of the grand Parque del Paseo. Its articulation must work with the hotel on Blocks B1a and B1c to complete a coherent sense of enclosure to this monumental space, though the sites are not likely to be symmetrical given the height restrictions imposed by the FAA due to its proximity to the Dominicci Airport. The key may lie in strengthening the articulation of the base massing on this side, and respecting the existing setback of the B1a/B1b hotel design.
- A significant pedestrian path is required through the block to link the Convention Center, Crescent Park, the hotel and the Puerto Rico Museum. The desire is to make this a very active grade-level pedestrian space with sidewalk level access. A high-level overhead canopy to provide shading is encouraged.
- Block J is located in the foreground of panoramic views from the Convention Center terrace across the San Antonio Canal; the design should strive to preserve and compliment those views.
- The major public façades facing the parks to the south and east are encouraged that allow the easterly trade winds (originating from the east, northeast and southeast) to penetrate through the site, taking full advantage of the water bodies' cooling effect at night. Shading elements must be provided on these facades to ensure the comfort of hotel guests, and of pedestrians who will be visiting the street-level commercial during the day.

ENGINEERING AND GEOTECHNICAL

- The important structural issues for Block J are expected to be large base shears for both wind and seismic and the differing seismic response of the low-rise and high-rise portions. The high base shears will be a result of the building height, the lsize of the base and the wind exposure of towers.
- Column loads are expected to range from 1,600 to 2,000 kips for interior columns and from 1,000 to 1,300 kips for exterior columns. Base shears are expected to range from 2,500 to 3,600 kips for seismic and from 3,200 kips to 3,600 kips for wind.
- Implementation of several different types of structural systems may be necessary to meet the specific requirements of different program spaces.
- Column loads are expected to range from 800 to 1,000 kips for interior columns and from 500 to 800 kips for exterior columns. Base shears are expected to range from 800 to 1,000 kips for seismic and from 600 kips to 800 kips for wind.

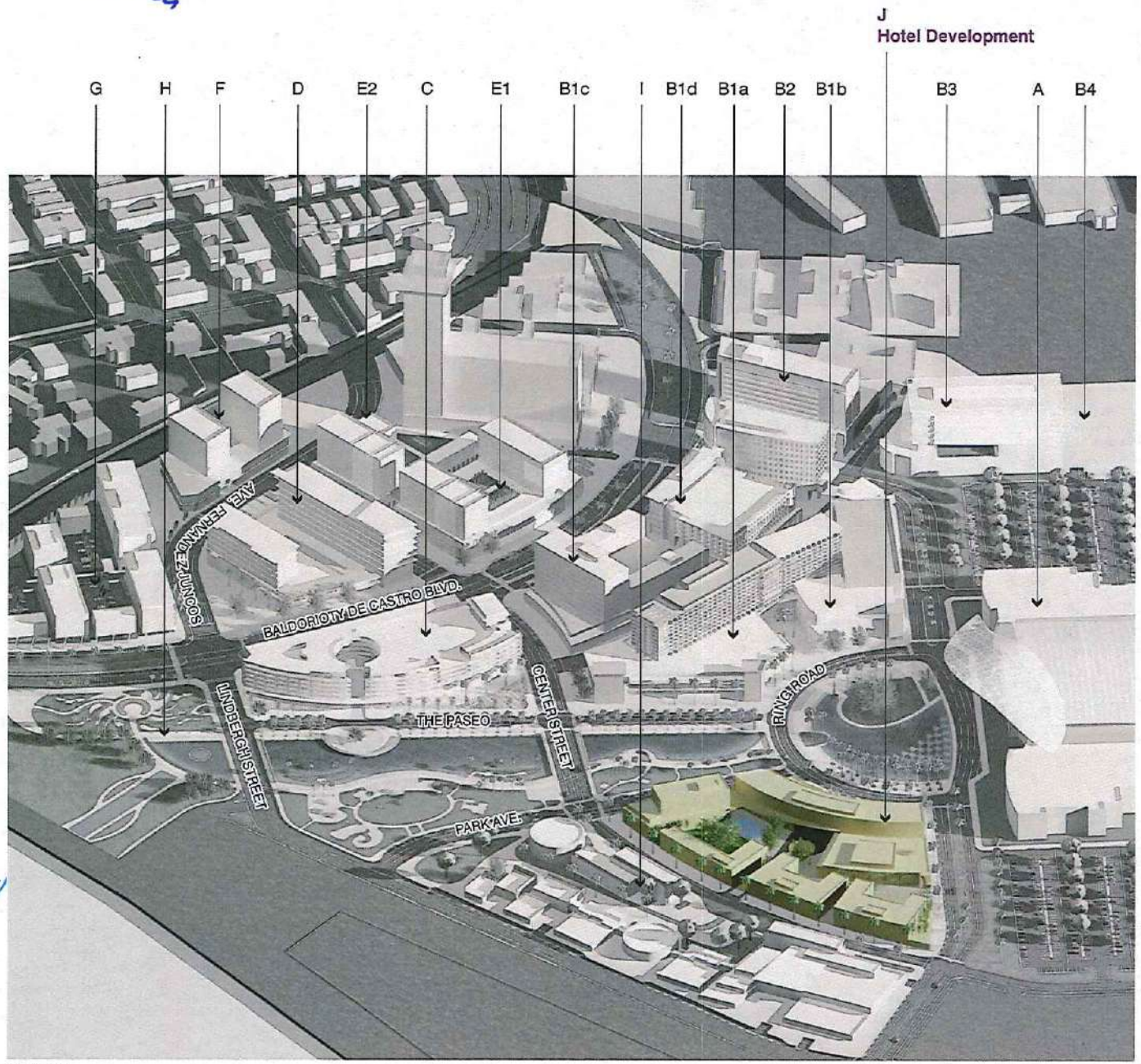


FIG. 5.14.5

FIG. 5.14.5
SAMPLE AXONOMETRIC
Block J

6.0
DESIGN REVIEW

6.0 DESIGN REVIEW

6.1 PROCESS

This section outlines procedures and responsibilities for implementation of the Puerto Rico Convention District Design Guidelines to ensure that all future development of the district is in accordance with the larger, shared vision and development goals of the Puerto Rico Convention District Authority.

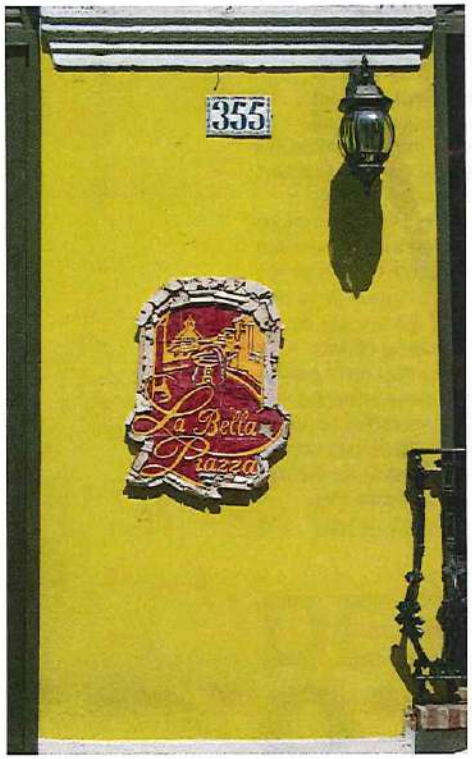
Design Review by a Design Panel appointed by the PRCDA will take place for all developments and at all levels of the design process. This panel will advise the Selection Committee during the RFP process on the design merits of all proposals and fit within the District Development Concept Plan.

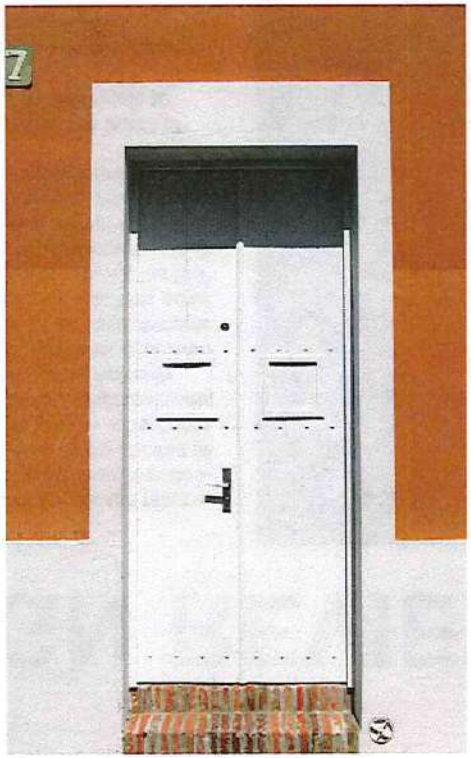
Once a Development Team is selected, the Design Panel will work with project teams throughout project design:

- To advise Project Teams on the intent of the Design Guidelines as they relate to specific projects
- To identify issues and guide discussion of project elements to be negotiated
- To ensure that the proposed developments meet the standards approved by the PRCDA.

Formal submissions and presentations for Design Review will be at Conceptual Design, Final Schematic Design, Design Development, and Final Design, with additional participation on an as-needed basis. Comments and suggestions will be provided. Designs will be resubmitted for full approval at each phase.




355
La Bella Piazza


7


IL PERUGINO

A
APPENDICES

A
APPENDICES



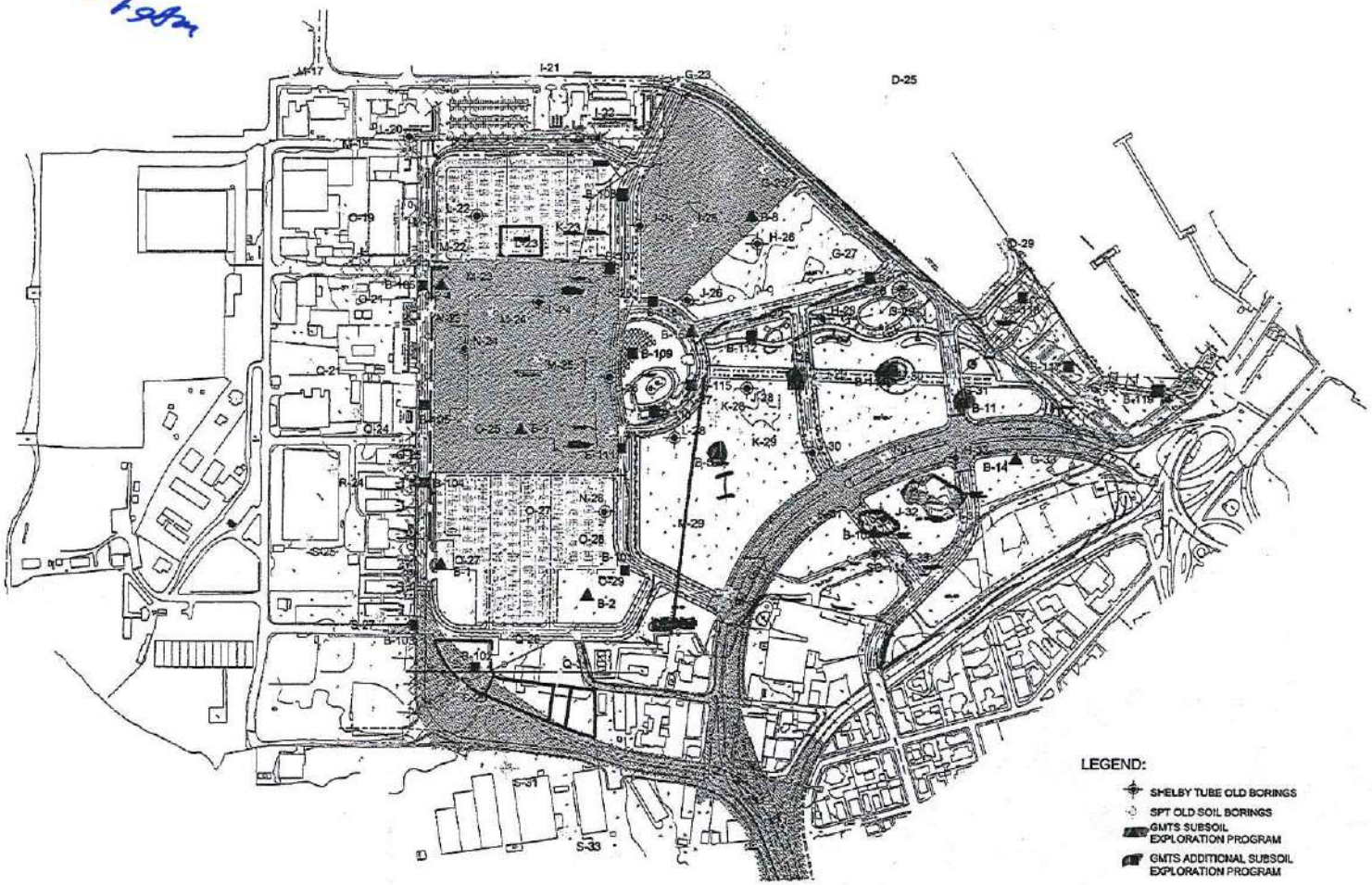


FIGURE - BORINGS LOCATION PLAN
PR TRADE CENTER
SAN JUAN, PUERTO RICO

GMTS

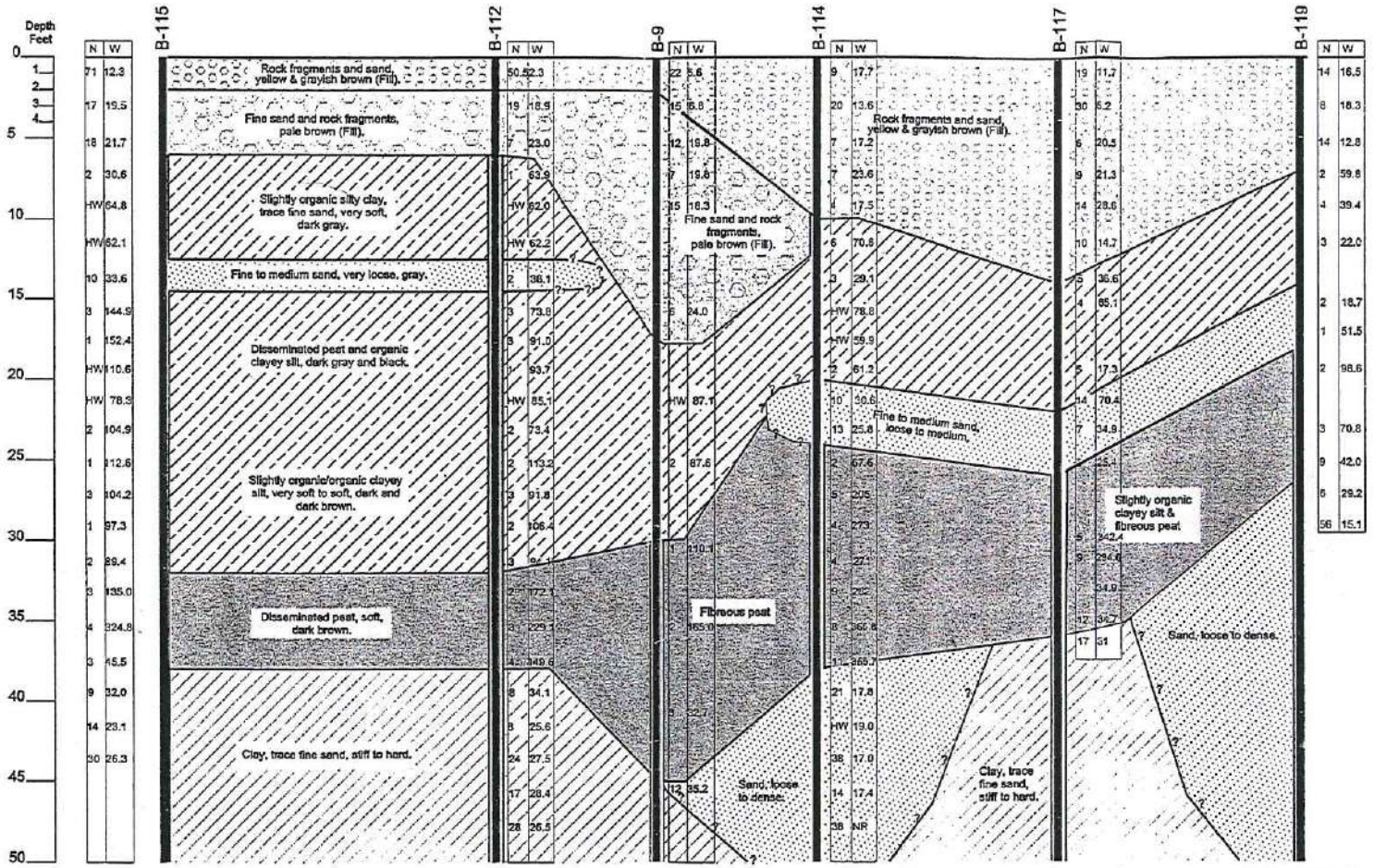


FIGURE ___ - INFERRED SOIL PROFILE ALONG GRAN CANAL
AMERICAS WORLD TRADE DISTRICT
SAN JUAN, PUERTO RICO

DATE: 01/17/2000	SCALE: GS	DWG. BY: DGG	REVISED: HLR	FILE: CROSS	JOB: G-990295

GMTS
GEOTECHNICAL & MATERIALS TESTING SERVICES CORP.

A.3.1
TEST BORING LOG
Job 880580; ID B-119

1.0
2.0
3.0
4.0
5.0
6.0
A
APPENDICES

SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-119

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 30 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 8 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/22/99
DATE ENDED : 09/22/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-119-1	5-8-6-10	SILTY CLAY AND LIMESTONE FRAGMENTS, TRACE FINE SAND, STIFF, YELLOWISH BROWN AND VERY PALE ORANGE.	14			16.5
	BO-119-2	5-4-4-4		8			18.3
	BO-119-3	9-7-7-5		14			12.8
5	BO-119-4	2-1-1-1	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, OCC. INLAYING DECAYED PARTICLES, SOFT, DARK GRAY.	2			59.8
	BO-119-5	2-2-2-2		4			39.4
10	BO-119-6	1-2-1-1	FINE TO MEDIUM SANDY CLAY, SOFT, OLIVE BROWN AND GRAY.	3			22.0
	BO-119-7		SHELBY 12' @ 14'.				
	BO-119-8	1-1-1-1	CLAY, LITTLE FINE TO MEDIUM SAND, SOFT, GRAY AND OLIVE BROWN MOTTLED.	2			18.7
15	BO-119-9	HW-1-HW-1	SLIGHTLY ORGANIC SILTY CLAY AND PEAT, OCC. SHELLS FRAGMENTS, VERY SOFT, BLUISH GRAY AND VERY DARK BROWN, OLIVE YELLOW MOTTLED.	1			51.5
	BO-119-10	HW-HW-2-HW		2			98.6
20	BO-119-11		SHELBY 20' @ 22'.				
	BO-119-12	1-1-2-3	FIBREOUS PEAT, TRACE FINE SAND, ORGANIC SILT, POCKETS AND SHELL FRAGMENTS, SOFT, BLACK AND DARK GRAY MOTTLED.	3			70.8
	BO-119-13	2-4-5-6		9			42.0
25	BO-119-14	3-3-3-6	FINE TO MEDIUM SAND, LOOSE, DARK BROWN.	6			28.2
	BO-119-15	33-30-26-31	DO, VERY DENSE, PALE BROWN.	56			15.1
30			END OF BORING AT 30 FEET.				
35							
40							
45							
50							

N VALUE * WATER CONTENT ---- GRAPH

GRAPHIC LOG

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :
NR= NO RECOVERY

PAGE 1 OF 1.

GMTS

BORING DETAIL

PROJECT NAME:	AMERICAS WORLD TRADE DISTRICT	ID:	B-112
LOCATION:	SAN JUAN, PUERTO RICO	BEGIN DATE:	8/031/99
CLIENT:	CSA	FINISH DATE:	09/01/99
JOB NO.:	G-990295	DRILLER:	JOSE L. MORALES

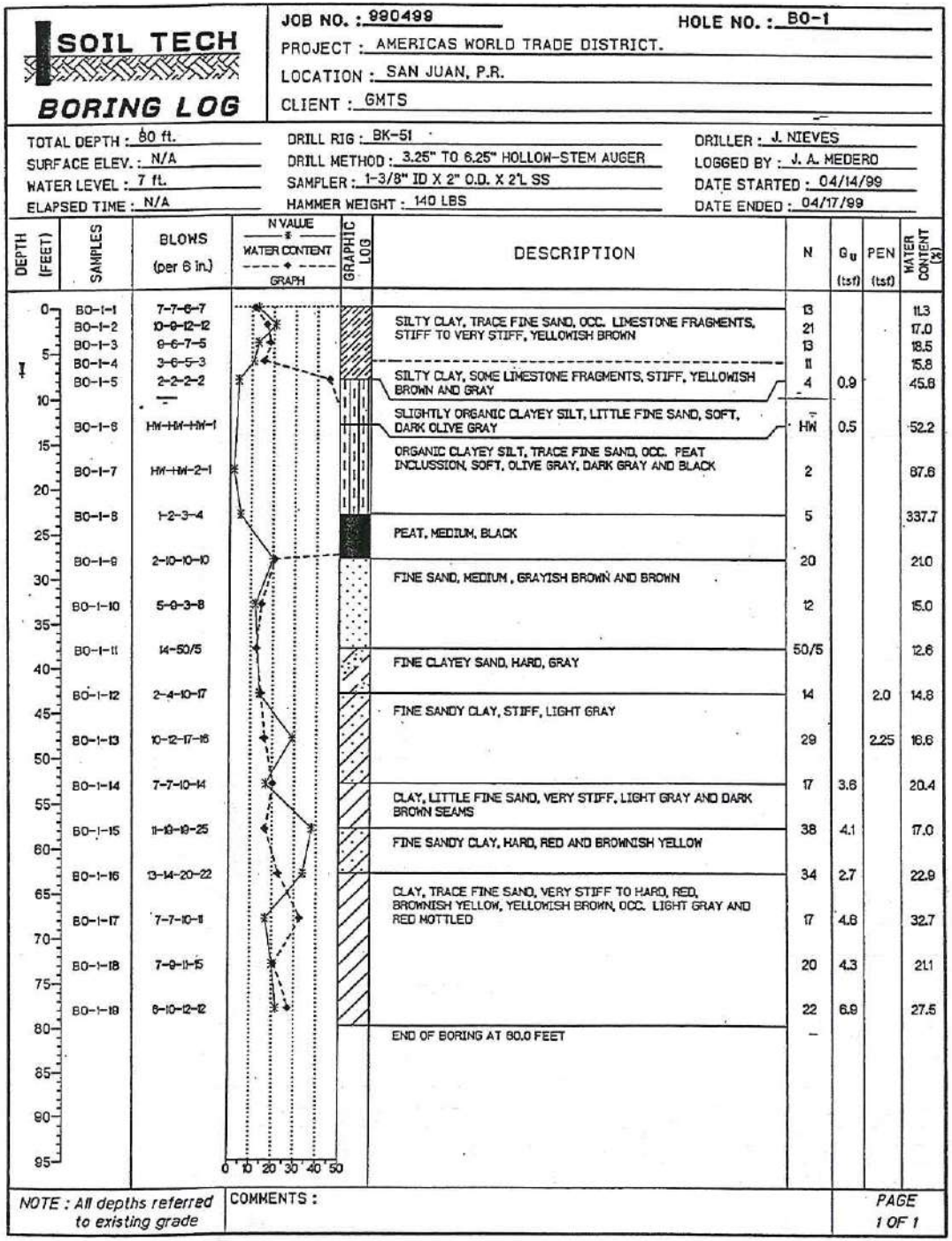
Depth	Symbol	DESCRIPTION	N	Qu (tsf)	W (%)	Shear Strength	γ (pcf)	Vane Shear (psf)
0		FINE TO MEDIUM FRAGMENTS AND SAND, TRACE SILT, HARD, YELLOW AND BLACK.						
1			50/5"		2.3		125	
2								
3		FINE SAND, OCC. CLAY LUMPS, MEDIUM, VERY PALE BROWN, SOME ORGANIC CLAYEY SILT, LOOSE, LIGHT AND DARK GRAY.	19		18.9			
4							100	
5			7		23.6			
6								
7		SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, VERY SOFT, DARK GRAY.	1		63.9			178
8								
9			WH	0.4	62.0		90.0	178
10								
11			WH		62.2			119
12								
13		FINE TO MEDIUM SAND, SOME SLIGHTLY ORGANIC SILTY CLAY, TRACE PEAT INCLUSIONS, SOFT, GRAYISH BLACK.	2		36.1			476
14								
15		SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, OCC. PEAT INCLUSIONS, SOFT, GRAYISH BLACK.	3		73.8	Ø=33°		
16						C=105 psf		
17		DISEMINATED PEAT AND ORGACNIC CLAY, TRACE FINE SAND, SOFT TO VERY SOFT, BLACK, DARK GRAY AND VERY DARK BROWN.	3		91.0			
18								
19			1		93.7		90.5	
20								
21			HW		85.1			
22								
23		SLIGHTLY ORGANIC CLAYEY SILT, TRACE FINE SAND AND SHELLS FRAGMENTS, SOFT, DARK BROWN.	2		73.4			
24								
25			2		113.2			238 psf
26								
27			3		91.8	Ø=34°		
28						C=150 psf		
29			2		106.4		88.2	
30								

GMTS

BORING DETAIL

PROJECT NAME:	AMERICAS WORLD TRADE DISTRICT	ID:	B-112
LOCATION:	SAN JUAN, PUERTO RICO	BEGIN DATE:	8/031/99
CLIENT:	CSA	FINISH DATE:	09/01/99
JOB NO.:	G-990295	DRILLER:	JOSE L. MORALES

Depth	Symbol	DESCRIPTION	N	Qu (tsf)	W (%)	Shear Strength	γ (pcf)	Vane Shear (psf)
31		SLIGHTLY ORGANIC CLAYEY SILT, TRACE FINE SAND AND SHELLS FRAGMENTS, SOFT, DARK BROWN.	3		94.1			
32								364
33		DISEMINATED PEAT, OCC. INLAYING SHELLS FRAGMENTS, SOFT, DARK BROWN, BLACK AND GRAY, LITTLE ORGANIC CLAY.	2		172.1			
34								
35			3		229.1		71.7	800
36								
37			4		149.6			
38								
39		SLIGHTLY ORGANIC CLAY, OCC. INLAYING PEAT INCLUSIONS, STIFF, BLUISH GRAY.	8		34.1			
40								
41		CLAY, TRACE FINE SAND, OCC. PEBBLES, STIFF TO VERY STIFF, OLIVE BROWN AND BLUISH GRAY, LIGHT GRAY AND YELLOWISH RBOWN.	8	25	25.6			
42								
43			24	2.5	27.5			
44								
45			17	2.75	28.4			
46								
47			28	2.75	26.5			
48								
49		END OF BORING AT 48 FEET.						
50								



SOIL TECH

BORING LOG

JOB NO. : 990499 HOLE NO. : BO-1

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : SAN JUAN, P.R.

CLIENT : GMTS

TOTAL DEPTH : 80 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 7 ft.
ELAPSED TIME : N/A

DRILL RIG : BK-51
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : J. NIEVES
LOGGED BY : J. A. MEDERO
DATE STARTED : 04/14/99
DATE ENDED : 04/17/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	G_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-1-1	7-7-6-7	SILTY CLAY, TRACE FINE SAND, OCC. LIMESTONE FRAGMENTS, STIFF TO VERY STIFF, YELLOWISH BROWN	13			11.3
	BO-1-2	10-9-12-12		21			17.0
5	BO-1-3	9-6-7-5		13			18.5
	BO-1-4	3-6-5-3		11			15.8
	BO-1-5	2-2-2-2	SILTY CLAY, SOME LIMESTONE FRAGMENTS, STIFF, YELLOWISH BROWN AND GRAY	4	0.9		45.6
10			SLIGHTLY ORGANIC CLAYEY SILT, LITTLE FINE SAND, SOFT, DARK OLIVE GRAY	HW	0.5		52.2
	BO-1-6	HW-HW-HW-1					
15	BO-1-7	HW-HW-2-1	ORGANIC CLAYEY SILT, TRACE FINE SAND, OCC. PEAT INCLUSSION, SOFT, OLIVE GRAY, DARK GRAY AND BLACK	2			87.6
20	BO-1-8	1-2-3-4	PEAT, MEDIUM, BLACK	5			337.7
25	BO-1-9	2-10-10-10	FINE SAND, MEDIUM , GRAYISH BROWN AND BROWN	20			21.0
30	BO-1-10	5-9-3-8		12			15.0
35	BO-1-11	14-50/5	FINE CLAYEY SAND, HARD, GRAY	50/5			12.6
40	BO-1-12	2-4-10-17	FINE SANDY CLAY, STIFF, LIGHT GRAY	14		2.0	14.8
45	BO-1-13	10-12-17-16		29		2.25	16.6
50	BO-1-14	7-7-10-14	CLAY, LITTLE FINE SAND, VERY STIFF, LIGHT GRAY AND DARK BROWN SEAMS	17	3.6		20.4
55	BO-1-15	11-19-19-25	FINE SANDY CLAY, HARD, RED AND BROWNISH YELLOW	38	4.1		17.0
60	BO-1-16	13-14-20-22	CLAY, TRACE FINE SAND, VERY STIFF TO HARD, RED, BROWNISH YELLOW, YELLOWISH BROWN, OCC. LIGHT GRAY AND RED MOTTLED	34	2.7		22.9
65	BO-1-17	7-7-10-11		17	4.8		32.7
70	BO-1-18	7-9-11-15		20	4.3		21.1
75	BO-1-19	8-10-12-12		22	6.9		27.5
80			END OF BORING AT 80.0 FEET	–			
85							
90							
95							

N VALUE * WATER CONTENT ---- GRAPH

GRAPHIC LOG

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :

PAGE 1 OF 1

SOIL TECH

BORING LOG

JOB NO. : 990499 HOLE NO. : BO-2

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : SAN JUAN, P.R.

CLIENT : GMTS

TOTAL DEPTH : 50 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 4 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-45
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : O. GARCIA
LOGGED BY : J. A. MEDERO
DATE STARTED : 05/03/99
DATE ENDED : 05/03/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-2-1	2-2-7-13		9			18.0
	BO-2-2	14-8-6-6	SAND, SOME SILT, LOOSE TO MEDIUM, LIGHT GRAY AND DARK BROWN	15			17.7
5	BO-2-3	4-4-4-5		8			17.4
	BO-2-4	4-2-1-1		3			15.4
	BO-2-5	WH-WH		1			21.3
10			SAND, VERY LOOSE, DARK GRAY				
	BO-2-6	2-WH-WH		1			25.5
15							
	BO-2-7	WH-WH-WH		1		0.5	30.4
20			SANDY SILT, ORGANIC MATTER INCLUSION, VERY SOFT, DARK GRAY				
	BO-2-8	3-7-10-15		17	4.5		15.4
25							
	BO-2-9	9-10-11-11	SANDY CLAY, STIFF TO VERY STIFF, LIGHT GRAY	21			16.3
30							
	BO-2-10	8-8-9-9		17	4.7		16.9
35							
	BO-2-11	4-8-10-13		19	2.3		17.9
40							
	BO-2-12	8-12-12-12		24	2.3		15.2
45							
	BO-2-13	8-8-7-8		15	2.5		16.0
50			END OF BORING AT 50.0 FEET				
55							
60							
65							
70							
75							
80							
85							
90							
95							

N VALUE — WATER CONTENT ---- GRAPH

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :

SOIL TECH

BORING LOG

JOB NO. : 990499 HOLE NO. : BO-3

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : SAN JUAN, P.R.

CLIENT : GMTS

TOTAL DEPTH : 50 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 6 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-45
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : O. GARCIA
LOGGED BY : J. A. MEDERO
DATE STARTED : 04/30/99
DATE ENDED : 05/03/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	G_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-3-1	4-26-50/3	FINE SANDY SILT AND LIMESTONE FRAGMENTS, OCC. THIN ROOTS, HARD, BROWN, YELLOWISH BROWN AND WHITE (NG)	76/9			7.0
	BO-3-2	9-21-17-12		38			10.7
	BO-3-3	4-2-3-3	FINE TO MEDIUM LIMESTONE FRAGMENTS, SOME CLAY, TRACE FINE SAND, HARD, WHITE (NG) AND REDDISH BROWN	5			18.6
5	BO-3-4	4-4-6-6		10			21.9
	BO-3-5	2-2-3-4	SILTY CLAY, LITTLE FINE SAND, OCC. LIMESTONE FRAGMENTS, MEDIUM, YELLOWISH BROWN AND GRAY	5			29.6
10							
	BO-3-6	HW-HW-HW-HW	FINE SAND, LOOSE, LIGHT GRAY, PALE YELLOW AND GRAY	HW	0.5		53.6
15							
	BO-3-7	HW-HW-HW-3	ORGANIC CLAYEY SILT, TRACE FINE SAND, OCC. PEAT POCKETS, VERY SOFT, DARK GRAY	HW			65.1
20							
	BO-3-8	2-1-2-3	ORGANIC SILT, TRACE SHELL FRAGMENTS AND FINE SAND, SOFT, DARK GRAY AND BROWN	3			64.5
25							
	BO-3-9	3-2-5-9	FIBREOUS PEAT AND FINE SAND, SOFT, BLACK AND LIGHT GRAY	7			180.7
30							
	BO-3-10	2-8-11-14	SANDY CLAY, OCC. INLAYING PEAT INCLUSSION, VERY STIFF, GRAY AND BLACK SPOTS	19	5.1		19.9
35							
	BO-3-11	8-15-16-19	FINE SANDY CLAY, HARD, LIGHT GRAY	31	5.3		12.5
40							
	BO-3-12	11-18-20-19		38	3.7		12.8
45							
	BO-3-13	16-18-21-18		39	4.0		13.5
50			END OF BORING AT 50.0 FEET				
55							
60							
65							
70							
75							
80							
85							
90							
95							

N VALUE / WATER CONTENT GRAPH: 0 10 20 30 40 50

GRAPHIC LOG

NOTE : All depths referred to existing grade

COMMENTS :

PAGE 1 OF 1

A.3.7
TEST BORING LOG
Job 990499; ID BO-3

PRCD MASTER PLAN VOLUME 7
CONVENTION CENTER DISTRICT AUTHORITY
Commonwealth of Puerto Rico
COLLIERS INTERNATIONAL
200

1.0
2.0
3.0
4.0
5.0
6.0

A
APPENDICES

SOIL TECH

BORING LOG

JOB NO. : 990499 HOLE NO. : BO-4

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : SAN JUAN, P.R.

CLIENT : GMTS

TOTAL DEPTH : 90 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 4 ft.
ELAPSED TIME : N/A

DRILL RIG : BK-51
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : J. NIEVES
LOGGED BY : J. A. MEDERO
DATE STARTED : 04/07/99
DATE ENDED : 04/07/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-4-1	5-8-19-24	FINE TO MEDIUM SILTY SAND, OCC. THIN ROOTS, MEDIUM, DARK YELLOWISH BROWN	27			5.7
	BO-4-2	24-15-13-20		28		4.5	12.9
	BO-4-3	6-2-2-1	SILTY CLAY AND LIMESTONE FRAGMENTS, HARD, OLIVE BROWN	4			13.3
5	BO-4-4	1/12-1-1		1			66.1
	BO-4-5	HW-HW-HW-2	SLIGHTLY ORGANIC CLAYEY SILT AND FINE LIMESTONE FRAGMENTS, OCC. ORGANIC MATTER, SOFT TO VERY SOFT, DARK GRAY	HW			53.5
10	BO-4-6	HW-1-1-1		2			55.7
15	BO-4-7	HW-HW-1-2		1			68.0
20	BO-4-8	HW-1-2-2	CLAYEY SILT, TRACE TO SOME SAND AND PEAT INCLUSIONS, SOFT, DARK GRAY	3			116.5
25	BO-4-9	2-1-1-1	FIBROUS PEAT, SOFT, BLACK	2			91.1
30	BO-4-10	10-10-8-7	FINE TO MEDIUM SAND, OCC. PEAT INCLUSIONS, MEDIUM, LIGHT GRAY	18			24.2
35	BO-4-11	2-5-8-8	MEDIUM SANDY CLAY, MEDIUM, LIGHT GRAY	13		4.5	12.5
40	BO-4-12	6-9-11-16	SANDY CLAY, VERY STIFF, LIGHT GRAY AND YELLOWISH BROWN	20		4.5	29.4
45	BO-4-13	10-11-27-29	MEDIUM SAND, TRACE CLAY, DENSE, LIGHT GRAY	38			16.4
50	BO-4-14	6-8-17-23	SILTY CLAY, TRACE FINE SAND, VERY STIFF, LIGHT YELLOWISH BROWN	25		4.5	20.9
55	BO-4-15	15-19-16-17	CLAYEY SILT, TRACE MEDIUM SAND, HARD, LIGHT YELLOWISH BROWN	35			23.0
60	BO-4-16	7-8-13-18		22			26.9
65	BO-4-17	9-14-15-24	WEATHERED LIMESTONE, SAMPLED AS FINE TO MEDIUM LIMESTONE FRAGMENTS AND SOME SAND, TRACE CLAY, VERY STIFF TO HARD, LIGHT YELLOWISH BROWN AND VERY PALE ORANGE	29			22.4
70	BO-4-18	20-25-29-23		52			22.2
75	BO-4-19	24-38-50/4.5		89			13.9
80	BO-4-20	29-50/5		50/5			18.3
85	BO-4-21	14-37-35-50/5		72			3.7
90			END OF BORING AT 90.0 FEET				
95							

N VALUE # / WATER CONTENT ---*--- GRAPH

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :

PAGE 1 OF 1

A.3.8
TEST BORING LOG
Job 990499: ID BO-4

PRCD MASTER PLAN VOLUME 7
CONVENTION CENTER DISTRICT AUTHORITY
Commonwealth of Puerto Rico
COLLIERS INTERNATIONAL
201

1.0 2.0 3.0 4.0 5.0 6.0
A
APPENDICES

SOIL TECH
BORING LOG

JOB NO. : 990499 HOLE NO. : BO-5
PROJECT : AMERICAS WORLD TRADE DISTRICT.
LOCATION : SAN JUAN, P.R.
CLIENT : GMTS

TOTAL DEPTH : 50 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 8 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 8.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : V. VAZQUEZ
LOGGED BY : J. A. MEDERO
DATE STARTED : 04/29/99
DATE ENDED : 04/29/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	N VALUE / WATER CONTENT GRAPH	GRAPHIC LOG	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-5-1	5-6-12-12			SILTY SAND AND GRAVEL FRAGMENTS, LOOSE TO MEDIUM, DARK BROWN	18		4.0	16.2
	BO-5-2	18-17-9-8				26			24.5
	BO-5-3	3-2-2-2				4			11.9
5	BO-5-4	2-3-4-4				7			39.7
▼	BO-5-5	2-4-6-7			MEDIUM TO COARSE SAND, MEDIUM, LIGHT BROWN	10			24.2
10									
	BO-5-6	2-2-2-2			CLAYEY SILT, LITTLE SAND, SLIGHTLY ORGANIC MATERIALS, SOFT, BLUISH GRAY	4	0.7		88.5
15	BO-5-7	2-5-6-7			MEDIUM TO COARSE SAND, MEDIUM, LIGHT GRAY	11			19.1
20	BO-5-8	4-5-6-6				11			26.6
25	BO-5-9	3-2-2-2			DISSEMINATED PEAT & ORGANIC CLAYEY SILT, SOFT, DARK GRAY A BLACK	4			93.4
30	BO-5-10	2-4-3-5			FIBROUS PEAT, MEDIUM, BLACK	7			331.1
35	BO-5-11	2-2-2-2			ORGANIC CLAYEY SILT, LITTLE SAND, SOFT TO MEDIUM, DARK GRAY	4		0.75	27.7
40	BO-5-12	4-4-5-5			DISSEMINATED PEAT & ORGANIC CLAYEY SILT, STIFF, DARK BROWN AND BLACK	9			56.5
45									
50					END OF BORING AT 50.0 FEET				
55									
60									
65									
70									
75									
80									
85									
90									
95			0 10 20 30 40 50						

NOTE : All depths referred to existing grade

COMMENTS :

SOIL TECH

BORING LOG

JOB NO. : 990499 HOLE NO. : BO-8

PROJECT : AMERICAS WORLD TRADE DITRICT.

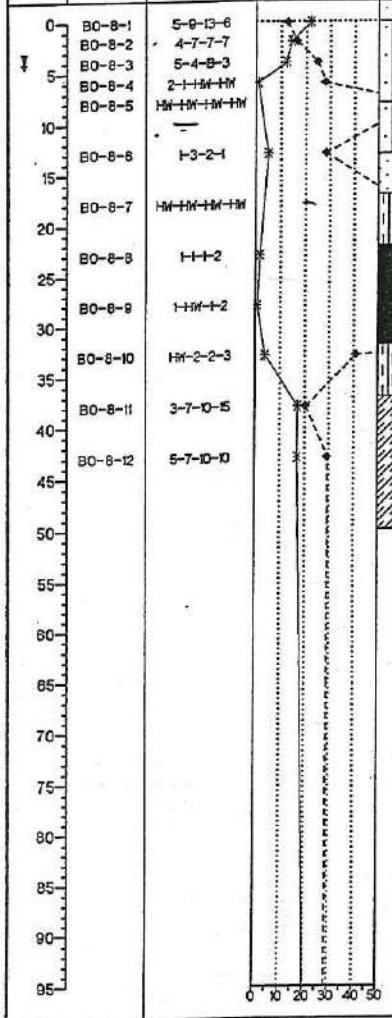
LOCATION : SAN JUAN, P.R.

CLIENT : GMTS

TOTAL DEPTH : 50 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 4 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-45
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2" O.D. X 2'L SS
HAMMER WEIGHT : 10 LBS

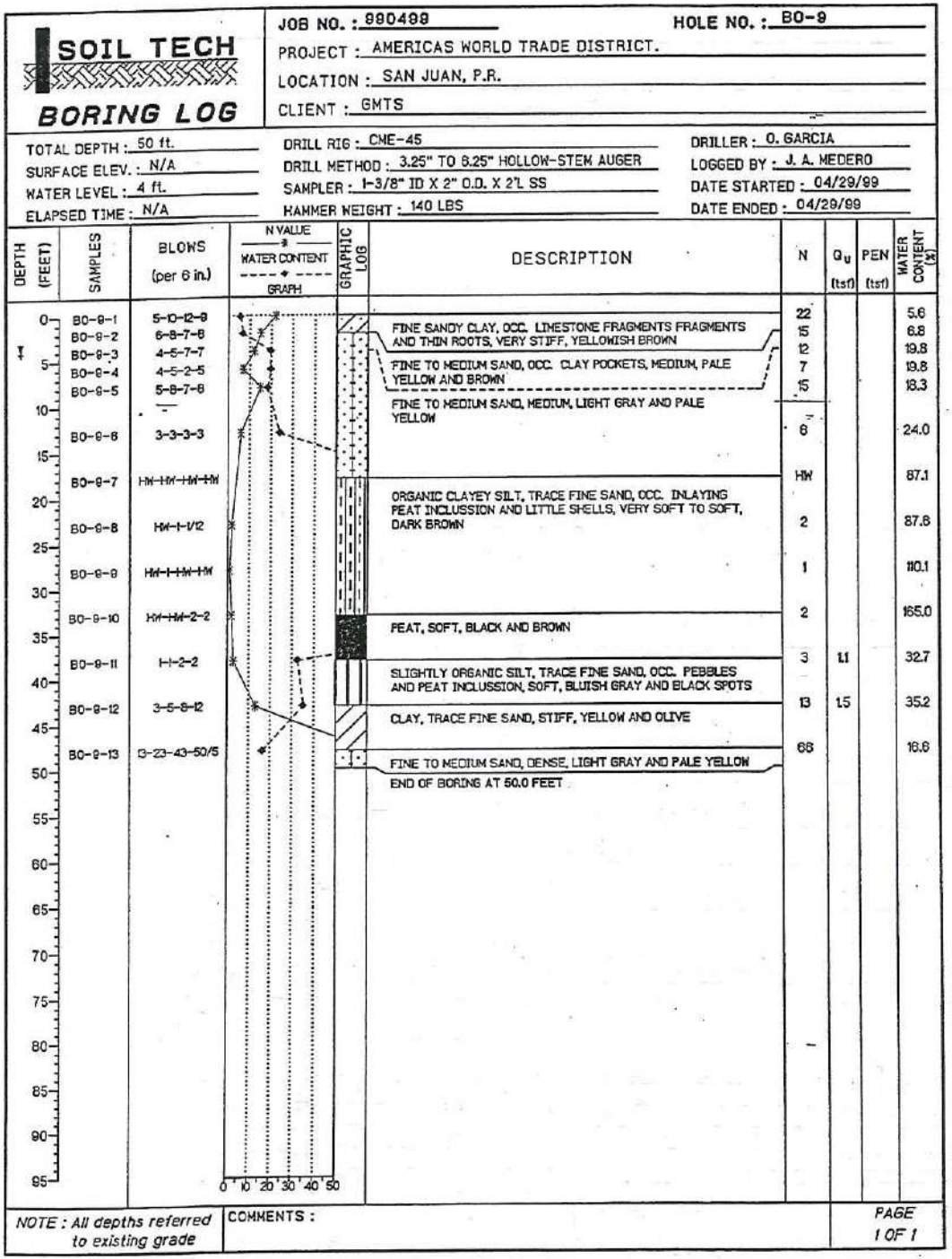
DRILLER : O. GARCIA
LOGGED BY : J. A. MEDERO
DATE STARTED : 04/29/99
DATE ENDED : 04/30/99



DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	G_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-8-1	5-9-13-6	SANDY SILT AND GRAVEL FRAGMENTS, STIFF TO VERY STIFF, DARK BROWN AND YELLOWISH BROWN	22			12.4
	BO-8-2	4-7-7-7		14			16.2
5	BO-8-3	5-4-8-3		12			24.8
	BO-8-4	2-1-HW-HW		1			27.8
	BO-8-5	HW-HW-HW-HW		HW			65.5
10			SANDY SILT, SLIGHTLY ORGANIC MATERIALS, VERY SOFT, DARK GRAY				
	BO-8-6	1-3-2-1		5			28.3
15			SAND, VERY LOOSE, DARK GRAY				
	BO-8-7	HW-HW-HW-HW	CLAYEY SILT, TRACE FINE SAND, VERY SOFT, DARK GRAY AND BROWN	HW			61.4
20	BO-8-8	1-1-1-2		2			378.3
25			FIBROUS PEAT, SOFT, DARK BROWN AND GRAY				
	BO-8-9	1-HW-1-2		1			268.0
30	BO-8-10	HW-2-2-3	CLAYEY SILT, LITTLE SAND, SLIGHTLY ORGANIC MATERIALS, SOFT, DARK GRAY	4	0.7		41.0
35	BO-8-11	3-7-10-15	SILTY CLAY, TRACE FINE SAND, VERY STIFF, LIGHT BROWN AND GRAY	17	1.3		20.4
40	BO-8-12	5-7-10-10		17	1.6		29.4
45							
50			END OF BORING AT 50.0 FEET				
55							
60							
65							
70							
75							
80							
85							
90							
95							

NOTE : All depths referred to existing grade

COMMENTS :



SOIL TECH

BORING LOG

JOB NO. : 990499 HOLE NO. : BO-9

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : SAN JUAN, P.R.

CLIENT : GMTS

TOTAL DEPTH : 50 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 4 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-45
DRILL METHOD : 3.25" TO 8.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : O. GARCIA
LOGGED BY : J. A. MEDERO
DATE STARTED : 04/29/99
DATE ENDED : 04/29/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	N VALUE ● WATER CONTENT ▲ GRAPH	GRAPHIC LOG	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-9-1	5-10-12-9			FINE SANDY CLAY, OCC. LIMESTONE FRAGMENTS FRAGMENTS AND THIN ROOTS, VERY STIFF, YELLOWISH BROWN	22			5.6
	BO-9-2	6-8-7-8				15			6.8
	BO-9-3	4-6-7-7				12			19.8
5	BO-9-4	4-5-2-5			FINE TO MEDIUM SAND, OCC. CLAY POCKETS, MEDIUM, PALE YELLOW AND BROWN	7			19.8
	BO-9-5	5-8-7-8				15			18.3
10					FINE TO MEDIUM SAND, MEDIUM, LIGHT GRAY AND PALE YELLOW				
	BO-9-6	3-3-3-3				6			24.0
15	BO-9-7	HW-HW-HW-HW				HW			87.1
20					ORGANIC CLAYEY SILT, TRACE FINE SAND, OCC. INLAYING PEAT INCLUSSION AND LITTLE SHELLS, VERY SOFT TO SOFT, DARK BROWN				
	BO-9-8	HW-1-1/12				2			87.8
25	BO-9-9	HW-1-HW-HW				1			110.1
30	BO-9-10	HW-HW-2-2				2			165.0
35					PEAT, SOFT, BLACK AND BROWN				
	BO-9-11	1-1-2-2			SLIGHTLY ORGANIC SILT, TRACE FINE SAND, OCC. PEBBLES AND PEAT INCLUSSION, SOFT, BLUISH GRAY AND BLACK SPOTS	3	1.1		32.7
40	BO-9-12	3-5-8-12			CLAY, TRACE FINE SAND, STIFF, YELLOW AND OLIVE	13	1.5		35.2
45	BO-9-13	13-23-43-50/5			FINE TO MEDIUM SAND, DENSE, LIGHT GRAY AND PALE YELLOW	66			16.6
50					END OF BORING AT 50.0 FEET				
55									
60									
65									
70									
75									
80									
85									
90									
95									

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :

PAGE 1 OF 1

A.3.11
TEST BORING LOG
Job 990499: ID BO-9

SOIL TECH
BORING LOG

JOB NO. : 990499 HOLE NO. : BO-10
PROJECT : AMERICAS WORLD TRADE DISTRICT.
LOCATION : SAN JUAN, P.R.
CLIENT : GMTS

TOTAL DEPTH : 75 ft.
SURFACE ELEV. : N/A
WATER LEVEL : NOT RECORDED ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : J. NIEVES
LOGGED BY : J. A. MEDERO
DATE STARTED : 04/28/99
DATE ENDED : 04/29/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-10-1	12-39-27-17	FINE SANDY SILT AND LIMESTONE FRAGMENTS, OCC. CLAY POCKETS, HARD, YELLOWISH BROWN, YELLOW AND WHITE	66			7.2
	BO-10-2	3-6-6-7		12			14.3
	BO-10-3	5-3-4-4	FINE SANDY CLAY, MEDIUM TO STIFF, BROWNISH YELLOW, GRAY AND BLUISH GRAY	7			24.3
5	BO-10-4	4-4-3-4		7			20.5
	BO-10-5	2-2-2-2		4			18.1
10			FINE SAND, OCC. CLAY POCKETS AND LIMESTONE FRAGMENTS, LOOSE TO MEDIUM, BROWNISH YELLOW, GRAY, PALE YELLOW AND LIGHT GRAY				
	BO-10-6	1-1-2-2	NO RECOVERY	3			N.R.
15	BO-10-7	5-2-3-2	FIBROUS PEAT, SOFT, BLACK AND BROWN	5			238.3
20	BO-10-8	3-6-9-9	FINE SAND, MEDIUM, GRAY AND PALE BROWN	15			18.8
25	BO-10-9	9-8-10-14		18			22.5
30	BO-10-10	7-7-8-8	FINE TO MEDIUM SAND, MEDIUM TO DENSE, GRAY, GRAYISH BROWN AND WHITE	15			17.0
35	BO-10-11	9-9-7-8		16			21.6
40	BO-10-12	19-13-19-16		32			15.9
45	BO-10-13	12-23-15-15		38			20.2
50	BO-10-14	10-10-11-10	NO RECOVERY	21			N.R.
55	BO-10-15	15-14-19-22	FINE TO MEDIUM SAND, TRACE SILT, DENSE, LIGHT GRAY	33			12.3
60	BO-10-16	11-17-20-22		37		4.5	15.7
65	BO-10-17	15-18-21-23	FINE SANDY CLAY, HARD, GRAY	39			15.4
70			FINE CLAYEY SAND, DENSE, GRAY				
75			END OF BORING AT 75.0 FEET				
80							
85							
90							
95							

N VALUE * WATER CONTENT ----•---- GRAPH

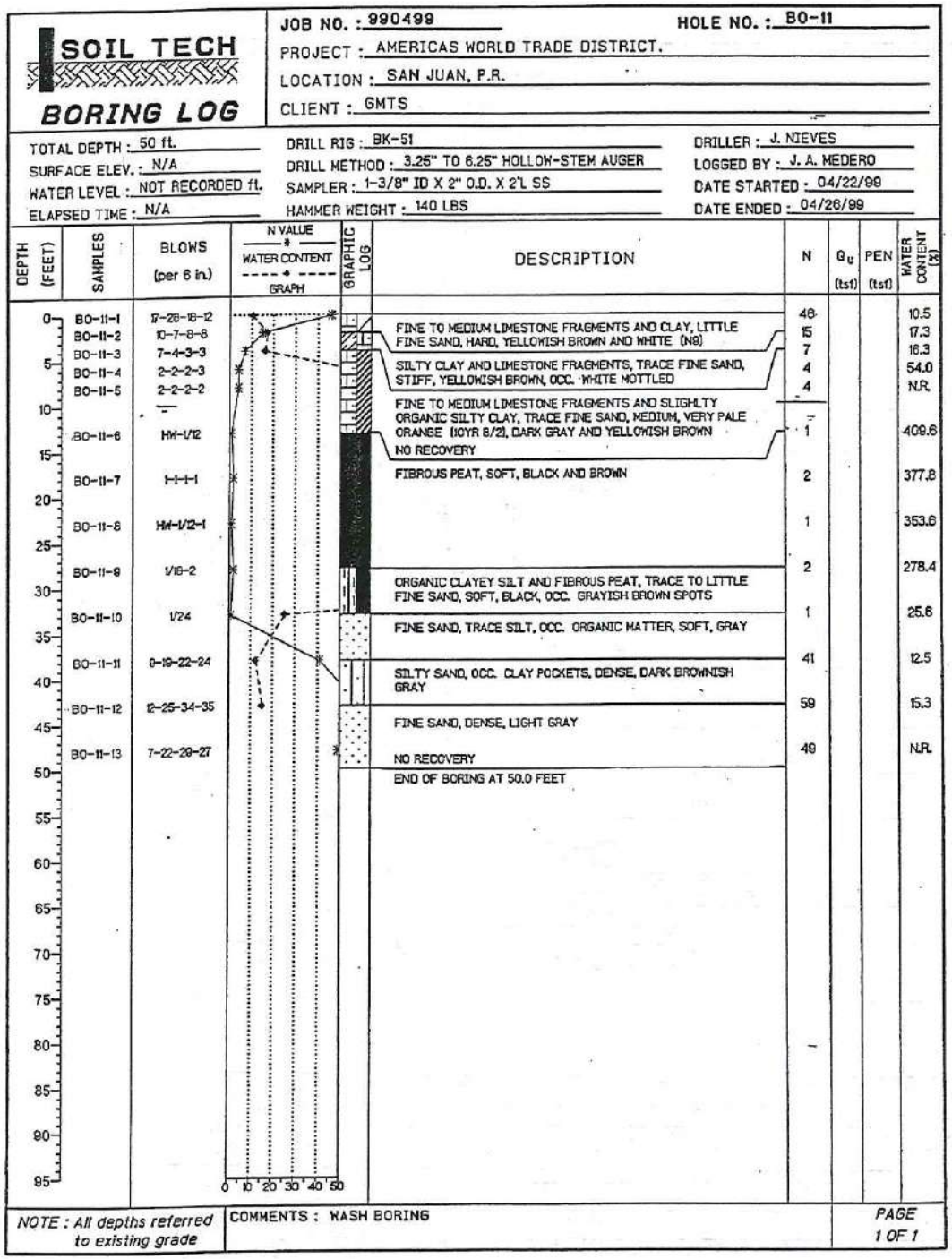
GRAPHIC LOG

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS : WASH BORING

PAGE 1 OF 1



SOIL TECH

BORING LOG

JOB NO. : 990499 HOLE NO. : BO-11

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : SAN JUAN, P.R.

CLIENT : GMTS

TOTAL DEPTH : 50 ft.
SURFACE ELEV. : N/A
WATER LEVEL : NOT RECORDED ft.
ELAPSED TIME : N/A

DRILL RIG : BK-51
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : J. NIEVES
LOGGED BY : J. A. MEDERO
DATE STARTED : 04/22/99
DATE ENDED : 04/26/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-11-1	17-26-18-12	FINE TO MEDIUM LIMESTONE FRAGMENTS AND CLAY, LITTLE FINE SAND, HARD, YELLOWISH BROWN AND WHITE (N8)	48			10.5
	BO-11-2	10-7-8-8		15			17.3
5	BO-11-3	7-4-3-3	SILTY CLAY AND LIMESTONE FRAGMENTS, TRACE FINE SAND, STIFF, YELLOWISH BROWN, OCC. WHITE MOTTLED	7			16.3
	BO-11-4	2-2-2-3		4			54.0
	BO-11-5	2-2-2-2		4			N.R.
10			FINE TO MEDIUM LIMESTONE FRAGMENTS AND SLIGHLTY ORGANIC SILTY CLAY, TRACE FINE SAND, MEDIUM, VERY PALE ORANGE (10YR 8/2), DARK GRAY AND YELLOWISH BROWN				
	BO-11-6	HW-1/12	NO RECOVERY	1			409.6
15	BO-11-7	1-1-1-1	FIBROUS PEAT, SOFT, BLACK AND BROWN	2			377.8
20	BO-11-8	HW-1/12-1		1			353.6
25	BO-11-9	1/18-2	ORGANIC CLAYEY SILT AND FIBROUS PEAT, TRACE TO LITTLE FINE SAND, SOFT, BLACK, OCC. GRAYISH BROWN SPOTS	2			278.4
30	BO-11-10	1/24	FINE SAND, TRACE SILT, OCC. ORGANIC MATTER, SOFT, GRAY	1			25.6
35	BO-11-11	9-19-22-24	SILTY SAND, OCC. CLAY POCKETS, DENSE, DARK BROWNISH GRAY	41			12.5
40	BO-11-12	12-25-34-35	FINE SAND, DENSE, LIGHT GRAY	59			15.3
45	BO-11-13	7-22-28-27	NO RECOVERY	49			N.R.
50			END OF BORING AT 50.0 FEET				
55							
60							
65							
70							
75							
80							
85							
90							
95							

N VALUE ● WATER CONTENT ----●---- GRAPH

GRAPHIC LOG

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS : WASH BORING

PAGE 1 OF 1

1.0
2.0
3.0
4.0
5.0
6.0
A
APPENDICES

SOIL TECH

BORING LOG

JOB NO. : 990499 HOLE NO. : BO-14

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : SAN JUAN, P.R.

CLIENT : GMTS

TOTAL DEPTH : 90 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 8.2 ft.
ELAPSED TIME : N/A

DRILL RIG : BK-51
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : J. NIEVES
LOGGED BY : J. A. MEDERO
DATE STARTED : 04/20/99
DATE ENDED : 04/21/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	G_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-14-1	6-10-17-20	SANDY SILT AND LIMESTONE FRAGMENTS, OCC. THIN ROOTS, STIFF TO HARD, YELLOWISH BROWN AND REDDISH YELLOW	27			8.3
	BO-14-2	14-14-16-13		30			19.3
5	BO-14-3	9-15-9-9		24			8.9
	BO-14-4	4-4-3-3		7		0.5	10.8
▼	BO-14-5	1-1-1/12	NO RECOVERY	1			N.R.
10		—					
	BO-14-6	2-2-2-1	SLIGHTLY ORGANIC CLAYEY SILT, TRACE FINE SAND, SOFT, DARK BROWN	4	1.5		68.3
15	BO-14-7	3-2-2-2	FIBROUS PEAT, SOFT, DARK BROWN AND BLACK	4			126.0
20	BO-14-8	HW-2-3-15	CLAYEY SAND, SLIGHTLY ORGANIC SENT, LOOSE, GRAY	5		0.75	17.2
25	BO-14-9	14-13-15-26	FINE TO MEDIUM SAND, TRACE CLAY, MEDIUM, LIGHT GRAY	28			16.2
30	BO-14-10	9-15-14-10		29			14.0
35	BO-14-11	5-6-15-19	INDURATED CLAYEY SILT, TRACE TO SOME SAND, VERY STIFF TO HARD, REDDISH BROWN AND YELLOWISH BROWN	24	11.3		8.7
40	BO-14-12	8-13-17-26		30	11.9		22.9
45	BO-14-13	8-11-15-18		28	15.4		21.4
50	BO-14-14	8-8-10-10	SANDY CLAY, VERY STIFF, OLIVE BROWN	18		4.5	27.0
55	BO-14-15	7-10-12-15	SILTY CLAY, SOME LIMESTONE FRAGMENTS, VERY STIFF, OLIVE BROWN, YELLOWISH BROWN AND LIGHT GRAY	22		4.0	27.1
60	BO-14-16	9-10-11-13		21	9.2		29.0
65	BO-14-17	9-10-14-17		24	3.9		38.7
70	BO-14-18	13-18-20-35	WEATHERED LIMESTONE, SAMPLED AS FINE TO MEDIUM LIMESTONE FRAGMENTS, LITTLE TO SOME SAND, VERY STIFF TO HARD, LIGHT YELLOWISH BROWN	33			25.4
75	BO-14-19	6-8-12-14		20			24.9
80	BO-14-20	12-18-17-20		22			20.5
85	BO-14-21	18-14-20-28		34			23.0
90			END OF BORING AT 90.0 FEET				
95							

N VALUE * WATER CONTENT ----- GRAPH

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :

PAGE 1 OF 1

SOIL TECH

BORING LOG

JOB NO. : 990499 HOLE NO. : BO-15

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : SAN JUAN, P.R.

CLIENT : GMTS

TOTAL DEPTH : 90 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 4 ft.
ELAPSED TIME : N/A

DRILL RIG : BK-51
DRILL METHOD : 3.25" TO 8.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : J. NIEVES
LOGGED BY : J. A. MEDERO
DATE STARTED : 04/08/99
DATE ENDED : 04/13/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	N VALUE ‡ WATER CONTENT ---•--- GRAPH	GRAPHIC LOG	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-15-1	7-17-15-8				32			15.7
	BO-15-2	4-3-5-3			SILTY SAND AND GRAVEL, HARD, BROWN	8			N.R.
‡	BO-15-3	1-1/12-2			NO RECOVERY	1			32.5
5	BO-15-4	1-4-5-3			SILTY SAND, ORGANIC MATTER INCLUSIONS, LOOSE TO VERY	9			43.3
	BO-15-5	1/24			LOOSE, DARK GRAY	1			43.6
10									
	BO-15-6	2-1-1-2				2			38.9
15					SAND, VERY LOOSE, GRAY				
	BO-15-7	HW-HW-HW-HW				HW			44.0
20					SANDY SILT AND ORGANIC MATTER INCLUSIONS, VERY LOOSE,				
	BO-15-8	1-1-1-2			VERY DARK GRAY AND BLACK	2			89.0
25									
	BO-15-9	1-1-1-2				2			89.6
30									
	BO-15-10	3-2-1-2			SILT AND DISSEMINATED PEAT, SOFT, BLACK	3			116.7
35									
	BO-15-11	5-5-7-10			CLAYEY SILT, SOME TO LITTLE SAND, STIFF TO VERY STIFF,	12		2.0	24.3
40					LIGHT BLUISH GRAY				
	BO-15-12	7-8-13-15			NO RECOVERY	22			N.R.
45									
	BO-15-13	7-8-11-15			NO RECOVERY	19		2.0	N.R.
	BO-15-14	3-4-10-11				14	3.5		26.5
50	BO-15-15	5-8-13-13				22	4.8		23.7
55					CLAYEY SILT, SOME TO LITTLE SAND, STIFF TO VERY STIFF,				
	BO-15-16	20-15-21-22			LIGHT BLUISH GRAY	36	2.9		23.8
60									
	BO-15-17	9-12-16-21				28	2.3		21.6
65									
	BO-15-18	9-11-15-18				26			32.0
70									
	BO-15-19	15-18-23-20				39			36.2
75					WEATHERED LIMESTONE, SAMPLED AS SANDY SILT AND				
	BO-15-20	7-7-15-24			LIMESTONE FRAGMENTS, VERY STIFF TO HARD, VERY PALE	22			22.5
80					ORANGE (10YR 8/2)				
	BO-15-21	14-13-21-28				34			30.4
85									
	BO-15-21	15-12-21-19				33			48.4
90					END OF BORING AT 90.0 FEET				
95			0 10 20 30 40 50						

NOTE : All depths referred to existing grade

COMMENTS :

PAGE 1 OF 1

SOIL TECH
BORING LOG

JOB NO. : 990580 HOLE NO. : B-101
PROJECT : AMERICAS WORLD TRADE DISTRICT.
LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO
CLIENT : GMTS

TOTAL DEPTH : 34 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 4 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/14/99
DATE ENDED : 09/14/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	B0-101-1	14-8-4-5	FINE TO MEDIUM ROCK FRAGMENTS AND SANDY CLAY, STIFF, DARK BROWN, GRAYISH YELLOW.	13			7.7
	B0-101-2	4-3-3-3		10			17.9
	B0-101-3	4-3-2-6	FINE TO MEDIUM SANDY CLAY, STIFF TO MEDIUM, YELLOWISH BROWN AND GRAY.	5			25.1
5	B0-101-4	3-2-2-1		4			19.9
	B0-101-5	WH-WH-1-1	FINE TO MEDIUM SAND, OCC. CLAY LUMPS AND PEBBLES, LOOSE, OLIVE YELLOW, GRAY AND LIGHT GRAY.	1			18.8
10	B0-101-6	WH-WH-3-2		3			37.1
	B0-101-7	3-4-2-2	FINE TO MEDIUM SAND, OCC. SHELLS FRAGMENTS, LOOSE, GRAY, OCC. SHELLS FRAGMENTS.	6			35.2
	B0-101-8	1-1-2-2		3			114.5
15	B0-101-9	3-3-2-2	DISEMINATED AND FIBREOUS PEAT, SOFT, VERY DARK BROWN.	5			205.0
	B0-101-10	WH-WH-WH-WH		W/H			31.3
20	B0-101-11	1-1-1	SLIGHTLY ORGANIC CLAY, TRACE FINE SAND, AND PEAT INCLUSSIONS, SOFT, GRAY AND OLIVE YELLOW.	2		.75	30.7
	B0-101-12	3-3-6-6	CLAY, TRACE FINE SAND, SOFT, OLIVE YELLOW, GRAY AND RED SPOTS.	9			30.5
	B0-101-13	2-5-7-8	CLAY, TRACE FINE SAND, OCC. DECAYED PARTICLES, STIFF, RED, GRAY AND OLIVE BROWN.	12	1.9		37.1
25	B0-101-14	6-8-9-10	FINE SANDY CLAY, STIFF, GRAY AND OLIVE YELLOW, SOFT. YELLOW AND GRAY.	15			18.0
	B0-101-15	3-3-2-2		5			24.7
30	B0-101-16	1-3-3-5		6			25.5
	B0-101-17	3-6-8-8	CLAY, TRACE TO LITTLE FINE SAND, OCC. INLAYING DECLAYED THIN ROOTS, MEDIUM OLIVE BROWN AND GRAY.	14			15.2
35			CLAY, TRACE TO LITTLE FINE SAND, STIFF, GRAY, RED AND OLIVE BROWN.				
40			END OF BORING AT 34 FEET.				
45							
50							

N VALUE * WATER CONTENT ◆ GRAPH (0 10 20 30 40 50)

NOTE : All depths referred to existing grade

COMMENTS : NR= NO RECOVERY

PAGE 1 OF 1

A.3.16
TEST BORING LOG
Job 990580; ID B-101

PRCD MASTER PLAN VOLUME 7
CONVENTION CENTER DISTRICT AUTHORITY Commonwealth of Puerto Rico
COLLIERS INTERNATIONAL
209

1.0 2.0 3.0 4.0 5.0 6.0 A
APPENDICES

SOIL TECH
BORING LOG

JOB NO. : 990580 HOLE NO. : B-102
PROJECT : AMERICAS WORLD TRADE DISTRICT.
LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO
CLIENT : GMTS

TOTAL DEPTH : 44 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 4 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/03/99
DATE ENDED : 09/08/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	B0-102-1	50/0	NO RECOVERY	50/0			NR
	B0-102-2	3-4-4-4	SILTY CLAY, LITTLE FINE SAND,STIFF, YELLOWISH BROWN AND GRAY.	8	0.7		18.6
	B0-102-3	3-4-2-5		6			19.9
5	B0-102-4	1-2-2-2	CLAYEY FINE SAND, LOOSE OLIVE BROWN AND GRAY.	4	1.6		18.4
	B0-102-5	2-4-5-6	CLAY, TRACE TO LITTLE FINE SAND, MEDIUM, OLIVE AND GRAY.	9			26.5
			FINE SANDY CLAY, STIFF, OLIVE AND GRAY				
10	B0-102-6	1-2-1-1		3	0.8		62.7
	B0-102-7	1-1-2-2	ORGANIC SILTY CLAY TRACE FINE SAND, SOFT, DARK GRAY.	3			69.6
	B0-102-8	1-3-4-4	DISEMINATE PEAT AND FINE SAND, SOFT, DARK BROWN AND GRAY.	7			341.0
15	B0-102-9	2-7-12-22	FIBREOUS PEAT, MEDIUM, DARK BROWN AND BLACK.	19			21.2
	B0-102-10	10-14-14-17	FINE SAND, MEDIUM, GRAY.	28			18.1
20	B0-102-11	3-3-7-14		10			30.0
	B0-102-12	4-11-15-20	CLAY, TRACE TO LITTLE FINE SAND, STIFF TO VERY STIFF, GRAY AND OLIVE BROWN.	27		4.5	12.7
	B0-102-13	7-14-21-21		35		2.75	13.3
25	B0-102-14	8-12-20-20	SANDY CLAY, OCC. INLAYING THIN ROOTS, HARD, GRAY.	32	6.6	2.75	15.6
	B0-102-15	5-12-14-14	SANDY CLAY, HARD TO VERY STIFF, GRAY.	26	2.1		14.3
30	B0-102-16	7-12-20-22		32	6.8		18.2
	B0-102-17	14-20-19-18	CLAY, LITTLE FINE SAND, HARD TO VERY STIFF, GRAY.	39	4.8		15.8
	B0-102-18	5-8-12-14		20	2.5		18.4
35	B0-102-19	6-8-9-11		17	1.9		15.7
	B0-102-20	6-8-8-14		16	2.3		18.6
40	B0-102-21	6-7-11-11		18			14.3
	B0-102-22	11-13-14-14	FINE SANDY CLAY, VERY STIFF, GRAY.	27			15.0
45			FINE CLAYEY SAND, MEDIUM, GRAY.				
50			END OF BORING AT 44 FEET.				

N VALUE — WATER CONTENT GRAPH (0 10 20 30 40 50)

NOTE : All depths referred to existing grade

COMMENTS : NR= NO RECOVERY

PAGE 1 OF 1

SOIL TECH
BORING LOG

JOB NO. : 990580 HOLE NO. : B-103
PROJECT : AMERICAS WORLD TRADE DISTRICT.
LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO
CLIENT : GMTS

TOTAL DEPTH : 42 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 10 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/07/99
DATE ENDED : 09/07/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-103-1	50/3	FINE TO MEDIUM ROCK FRAGMENTS AND SILTY SAND, HARD, DARK YELLOWISH BROWN, WHITE AND GRAY MOTTLED.	50/3			4.3
	BO-103-2	10-8-10-16		18			12.8
	BO-103-3	9-8-6-4	FINE TO COARSE ROCK FRAGMENTS AND SANDY CLAY, VERY STIFF, OLIVE BROWN AND WHITE.	15			14.0
5	BO-103-4	5-8-11-10	FINE SANDY CLAY, OCC. LIMESTONE FRAGMENTS, STIFF TO VERY STIFF, GRAY AND GRAYISH BROWN.	19			14.1
	BO-103-5	3-5-6-7		11			18.1
10	BO-103-6	1-2-2-2	CLAYEY FINE SAND, OCC.LIMESTONE FRAGMENTS, STIFF, GRAYISH BROWN.	4			15.8
	BO-103-7	3-3-3-1		6		.25	56.1
	BO-103-8	HW-HW-HW-HW	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, MEDIUM TO VERY STIFF, DARK GRAY.	W/H		.25	71.7
15	BO-103-9	1-2-2-2		4			127.0
	BO-103-10	3-3-3-4	DISEMINATED PEAT, TRACE ORGANIC SILTY CLAY, SOFT, DARK BROWN AND OLIVE GRAY.	6			329.8
20	BO-103-11	1-1-3-3	FIBREOUS PEAT, MEDIUM TO STIFF, VERY DARK BROWN.	4			327.9
	BO-103-12	5-5-6-6		11			332.2
	BO-103-13	2-2-3-4-5		5			314.9
25	BO-103-14	7-7-8-24	FINE TO MEDIUM SAND AND PEAT POCKETS, MEDIUM, GRAYISH BROWN AND DARK BROWN.	15			51.7
	BO-103-15	7-11-13-22	FINE SAND, MEDIUM TO DENSE, BROWN TO GRAYISH BROWN.	24			19.1
30	BO-103-16	5-8-14-16		22			19.0
	BO-103-17	13-16-19-20		35			18.7
	BO-103-18	10-15-16-22		31			17.8
35	BO-103-19	8-15-24-33		39			18.8
	BO-103-20	7-22-30-40		52			16.7
40	BO-103-21	15-28-46-50/4		74			18.5
	BO-103-22		END OF BORING AT 42 FEET.	–			
45							
50							

N VALUE — WATER CONTENT GRAPH (0 10 20 30 40 50)

NOTE : All depths referred to existing grade

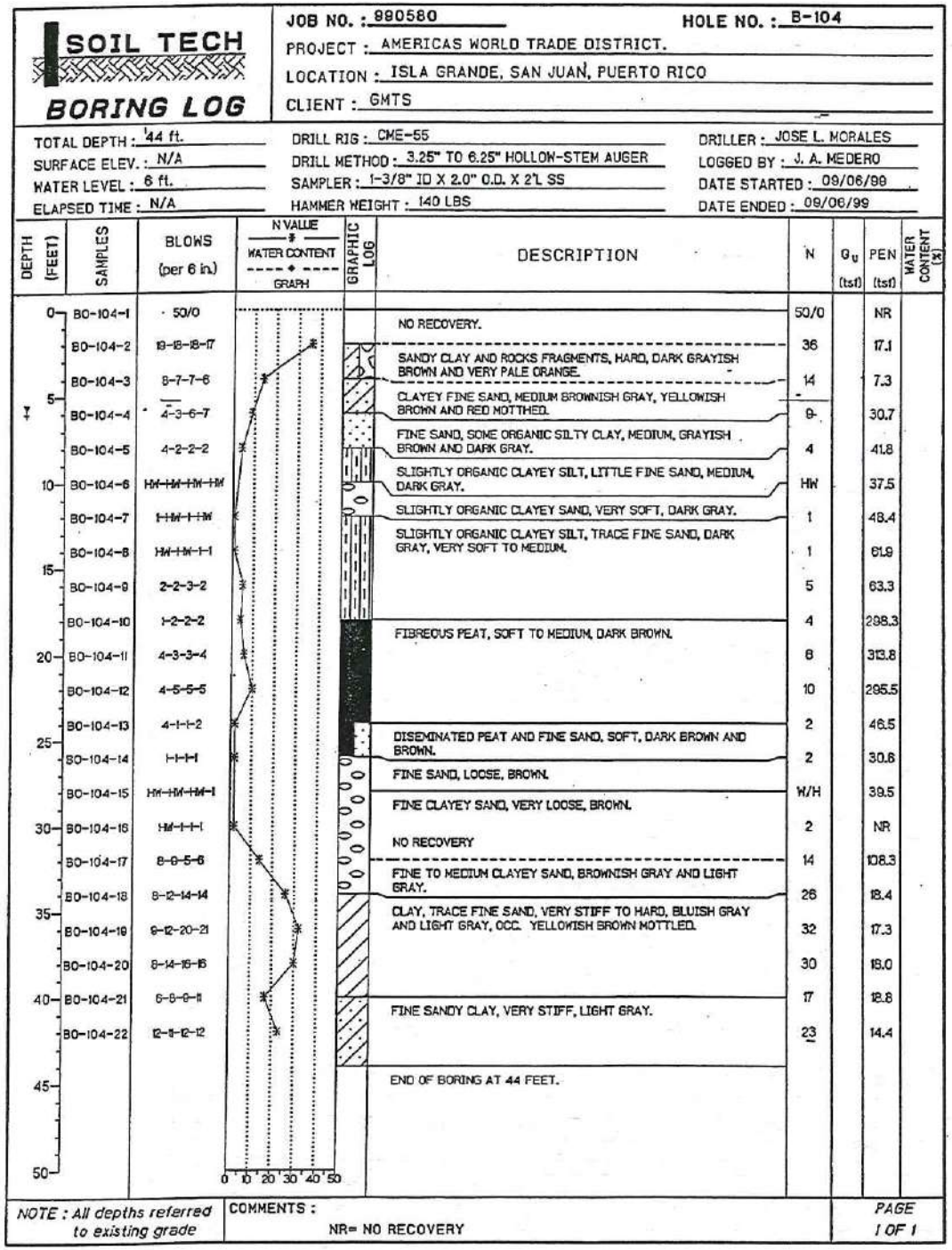
COMMENTS :
NR= NO RECOVERY

PAGE 1 OF 1

A.3.18
TEST BORING LOG
Job 990580; ID B-103

PRCD MASTER PLAN VOLUME 7
CONVENTION CENTER DISTRICT AUTHORITY
Commonwealth of Puerto Rico
COLLIERS INTERNATIONAL
211

1.0 2.0 3.0 4.0 5.0 6.0 A
APPENDICES



SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-104

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 44 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 6 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/06/99
DATE ENDED : 09/06/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	B0-104-1	50/0	NO RECOVERY.	50/0		NR	
	B0-104-2	19-18-18-17	SANDY CLAY AND ROCKS FRAGMENTS, HARD, DARK GRAYISH BROWN AND VERY PALE ORANGE.	36		17.1	
	B0-104-3	8-7-7-6	CLAYEY FINE SAND, MEDIUM BROWNISH GRAY, YELLOWISH BROWN AND RED MOTTLED.	14		7.3	
5	B0-104-4	4-3-6-7	FINE SAND, SOME ORGANIC SILTY CLAY, MEDIUM, GRAYISH BROWN AND DARK GRAY.	9		30.7	
	B0-104-5	4-2-2-2	SLIGHTLY ORGANIC CLAYEY SILT, LITTLE FINE SAND, MEDIUM, DARK GRAY.	4		41.8	
10	B0-104-6	HW-HW-HW-HW	SLIGHTLY ORGANIC CLAYEY SAND, VERY SOFT, DARK GRAY.	HW		37.5	
	B0-104-7	H-HW-H-HW	SLIGHTLY ORGANIC CLAYEY SILT, TRACE FINE SAND, DARK GRAY, VERY SOFT TO MEDIUM.	1		48.4	
	B0-104-8	HW-H-W-H-1		1		61.9	
15	B0-104-9	2-2-3-2		5		63.3	
	B0-104-10	1-2-2-2		4		298.3	
20	B0-104-11	4-3-3-4	FIBREOUS PEAT, SOFT TO MEDIUM, DARK BROWN.	6		313.8	
	B0-104-12	4-5-5-5		10		295.5	
	B0-104-13	4-1-1-2		2		46.5	
25	B0-104-14	1-1-1-1	DISEMINATED PEAT AND FINE SAND, SOFT, DARK BROWN AND BROWN.	2		30.6	
	B0-104-15	HW-HW-HW-1	FINE SAND, LOOSE, BROWN.	W/H		39.5	
30	B0-104-16	HW-1-1-1	FINE CLAYEY SAND, VERY LOOSE, BROWN.	2		NR	
	B0-104-17	8-8-5-6	NO RECOVERY	14		108.3	
	B0-104-18	8-12-14-14	FINE TO MEDIUM CLAYEY SAND, BROWNISH GRAY AND LIGHT GRAY.	26		18.4	
35	B0-104-19	9-12-20-21	CLAY, TRACE FINE SAND, VERY STIFF TO HARD, BLUISH GRAY AND LIGHT GRAY, OCC. YELLOWISH BROWN MOTTLED.	32		17.3	
	B0-104-20	8-14-16-16		30		18.0	
40	B0-104-21	6-8-9-11	FINE SANDY CLAY, VERY STIFF, LIGHT GRAY.	17		18.8	
	B0-104-22	12-8-12-12		23		14.4	
45			END OF BORING AT 44 FEET.				
50							

N VALUE — * — WATER CONTENT ---- ◆ ---- GRAPH

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :
NR= NO RECOVERY

PAGE 1 OF 1

SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-105

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 32 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 7 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/09/99
DATE ENDED : 09/09/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-102-1	35-50/2	FINE TO MEDIUM SILTY SAND AND LIMESTONE FRAGMENTS, HARD, YELLOWISH BROWN.	50/2			3.8
	BO-102-2	16-16-16-12	FINE SAND, DENSE, BROWNISH YELLOW.	32			6.3
	BO-105-3	4-2-5-4	SILTY CLAY, TRACE TO LITTLE FINE SAND AND LIMESTONE FRAGMENTS, MEDIUM, DARK GRAYISH.	5			35.2
5	BO-105-4	5-4-1-2		5			41.4
	BO-105-5	HW-HW-1-1	FINE TO MEDIUM, SILTY SAND, OCC. CORAL FRAGMENTS AND SHELLS, LOOSE, OLIVE BROWN.	1			67.0
10	BO-105-6	HW-HW-3-3	SLIGHTLY ORGANIC SILTY CLAY, VERY SOFT, OCC.CORAL FRAGMENTS AND FINE SAND,DARK GRAY.	3			44.3
	BO-105-7	2-1-HW-1		1			41.7
	BO-105-8	HW-HW-HW-HW	FINE TO MEDIUM SAND, OCC. CORAL FRAGMENTS AND CLAYEY SILT, LOOSE, GRAY.	W/H			68.1
15	BO-105-9	1-2-1-1	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, VERY SOFT, DARK GRAY.	3			218.8
	BO-105-10	HW-HW-2-2	SLIGHTLY ORGANIC CLAYEY SILT AND DISEMINATED PEAT, SOFT, DARK GRAY AND BLACK.	2			138.1
20	BO-105-11	1-2-2-3	FIBREOUS PEAT, SOFT, VERY DARK BROWN.	4			348.5
	BO-105-12	3-4-2-2		6			345.7
	BO-105-13	1-2-2-6		4			327.6
25	BO-105-14	1-4-9-16	FINE SAND, MEDIUM TO DENSE, LIGHT BROWN.	13			21.8
	BO-105-15	8-19-20-19		38			17.4
30	BO-105-16	15-17-13-13		30			19.0
			END OF BORING AT 32 FEET.				
35	BO-105-19						
	BO-105-20						
40	BO-105-21						
	BO-105-22						
45							
50							

N VALUE / WATER CONTENT GRAPH: 0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :
NR= NO RECOVERY

PAGE 1 OF 1

A.3.20
TEST BORING LOG
Job 990580: ID B-105

PRCD MASTER PLAN VOLUME 7
CONVENTION CENTER DISTRICT AUTHORITY
Commonwealth of Puerto Rico
COLLIERS INTERNATIONAL
213

1.0
2.0
3.0
4.0
5.0
6.0
A
APPENDICES

SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-106

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 36 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 10 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/08/99
DATE ENDED : 09/08/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-106-1	50/3	NO RECOVERY	50/3			NR
	BO-106-2	50/4	FINE TO MEDIUM ROCK FRAGMENTS, HARD, VERY PALE, ORANGE AND BLACK.	50/4			4.2
	BO-106-3	3-5-6-10		11			15.1
5	BO-106-4	11-6-6-6	SILTY CLAY, TRACE FINE SAND AND LIMESTONE FRAGMENTS, STIFF, OLIVE AND YELLOWISH BROWN.	12			23.1
	BO-106-5	6-6-8-10		16			19.5
10	BO-106-6	2-8-3-2		11			23.9
	BO-106-7	1-2-1-3		3			NR
	BO-106-8	1-1-1-1	SLIGHTLY ORGANIC SILTY CLAY, OCC. FINE SAND POCKETS AND SHELLS FRAGMENTS, SOFT, DARK GRAY.	2			50.1
15	BO-106-9	2-2-3-2		5			54.5
	BO-106-10	2-2-2-2	SLIGTHLY ORGANIC CLAYEY SILT, LITTLE VERY FINE SAND, MEDIUM, DARK GRAY.	4			54.6
20	BO-106-11	1-1-1-2		2	0.9		63.1
	BO-106-12	3-2-1-1		3			65.6
	BO-106-13	2-2-2-3		4			74.0
25	BO-106-14	3-3-3-3	DISEMINATED PEAT, OCC. FINE SAND POCKETS AND SHELLS FRAGMENTS, SOFT, DARK BROWN AND GRAY.	6			180.1
	BO-106-15	4-5-7-9	FIBREOUS PEAT, LITTLE FINE SAND AND SHELLS FRAGMENTS, MEDIUM TO STIFF, SOFT, DARK BROWN AND GRAY.	12			285.5
30	BO-106-16	1-1-3-6		4			271.4
	BO-106-17	2-2-9-11		11			23.9
	BO-106-18	6-11-18-24	FINE TO MEDIUM SAND, TRACE, PEAT, MEDIUM, GRAYISH BROWN.	29			17.0
35			END OF BORING AT 36 FEET.				
40							
45							
50							

N VALUE / WATER CONTENT GRAPH: 0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS : NR= NO RECOVERY

PAGE 1 OF 1

SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-107

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 44 ft. | DRILL RIG : CME-55 | DRILLER : JOSE L. MORALES

SURFACE ELEV. : N/A | DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER | LOGGED BY : J. A. MEDERO

WATER LEVEL : 4 ft. | SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS | DATE STARTED : 09/14/99

ELAPSED TIME : N/A | HAMMER WEIGHT : 140 LBS | DATE ENDED : 09/15/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-107-1	50/2	FINE TO MEDIUM LIMESTONE AND ASPHALT FRAGMENTS, TRACE SILTY SAND, HARD YELLOWISH BROWN AND BLACK.	50/2			10.4
	BO-107-2	7-50/6		50/6			10.8
	BO-107-3			-			
5	BO-107-4	1-3-3-4	SILTY CLAY, LITTLE FINE SAND, OCC. PEBBLES, MEDIUM, OLIVE GRAY.	6			22.0
	BO-107-5	1-1-4-3		5			NR
10	BO-107-6	1-1-3-2	SLIGHTLY ORGANIC SANDY CLAY, OCC. LIMESTONE FRAGMENTS, MEDIUM, OLIVE GRAY AND OLIVE YELLOW.	4			22.4
	BO-107-7	1-2-1-2	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, OCC. PEBBLES, SOFT, DARK GRAY AND OLIVE BROWN.	3			56.3
	BO-107-8	1-1-1-4	FINE SANDY SILT, SOFT, DARK GRAY.	2			51.0
15	BO-107-9	1-HW-2-HW	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, SOFT, DARK GRAY AND OLIVE GRAY.	2			58.2
	BO-107-10	HW-2-2-1		4			55.2
20	BO-107-11	HW-HW-2-3		2			52.7
	BO-107-12	1-2-1-2		3			60.3
	BO-107-13	1-HW-2-HW	FIBREOUS PEAT, SOFT, OCC. FINE SAND POCKETS, MEDIUM, DARK BROWN AND GRAY.	W/H			258.2
25	BO-107-14	4-4-4-4		8			256.6
	BO-107-15	2-1-3-4		4			329.2
30	BO-107-16	1-1-2-3		3			309.3
	BO-107-17	4-3-4-4		7			314.5
	BO-107-18	1-HW-2-1	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, OCC. PEAT INCLUSSIONS, SOFT TO MEDIUM, BLUISH GRAY AND DARK BROWN.	2			42.3
35	BO-107-19	2-2-3-3		5		.75	37.0
	BO-107-20	4-6-7-8	SILTY CLAY, TRACE FINE SAND, OCC. INLAYING DECAYED ROOTS, STIFF TO, VERY STIFF, OLIVE YELLOW AND GRAY.	13	1.2		34.7
40	BO-107-21	3-3-4-8		7	1.4		29.8
	BO-107-22	8-8-14-8		23	3.1		27.0
45			END OF BORING AT 44 FEET.				
50							

N VALUE * — WATER CONTENT ---- ◆ ---- GRAPH (0 10 20 30 40 50)

NOTE : All depths referred to existing grade

COMMENTS : NR= NO RECOVERY

SOIL TECH
BORING LOG

JOB NO. : 990580 HOLE NO. : B-108
PROJECT : AMERICAS WORLD TRADE DISTRICT.
LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO
CLIENT : GMTS

TOTAL DEPTH : 44 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 9 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/08/99
DATE ENDED : 09/08/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	N VALUE ● / WATER CONTENT ---●--- GRAPH	GRAPHIC LOG	DESCRIPTION	N	q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	B0-108-1	5-12-25-31			NO RECOVERY	37			4.8
	B0-108-2	13-15-16-13			SILTY CLAY, LITTLE FINE SAND,STIFF, YELLOWISH BROWN AND GRAY.	31			28.3
	B0-108-3	13-10-8-8			CLAYEY FINE SAND, LOOSE OLIVE BROWN AND GRAY.	18			8.5
5	B0-108-4	6-8-8-10			CLAY, TRACE TO LITTLE FINE SAND, MEDIUM, OLIVE AND GRAY.	16			19.1
	B0-108-5	5-6-7-8			FINE SANDY CLAY, STIFF, OLIVE AND GRAY	13			24.8
	B0-108-6	6-7-6-8			ORGANIC SILTY CLAY TRACE FINE SAND, SOFT, DARK GRAY.	15			22.6
10	B0-108-7	6-7-8-8			DISEMINATED PEAT AND FINE SAND, SOFT, DARK BROWN AND GRAY.	15			25.2
	B0-108-8	8-7-8-5			FIBREOUS PEAT, MEDIUM, DARK BROWN AND BLACK.	13			22.8
	B0-108-9	7-7-6-4			FINE SAND, MEDIUM, GRAY.	13			14.2
	B0-108-10	5-7-6-5				10			16.2
15	B0-108-11	5-5-5-5			CLAY, TRACE TO LITTLE FINE SAND, STIFF TO VERY STIFF, GRAY AND OLIVE BROWN.	19			18.9
	B0-108-12	7-6-13-13				12			23.8
	B0-108-13	4-4-8-13			SANDY CLAY, OCC. INLAYING THIN ROOTS, HARD, GRAY.	20			14.4
20	B0-108-14	8-12-8-2			SANDY CLAY, HARD TO VERY STIFF, GRAY.	4			32.8
	B0-108-15	3-1-3-3				8			200.8
	B0-108-16	2-2-4-3			CLAY, LITTLE FINE SAND, HARD TO VERY STIFF, GRAY.	6			316.3
	B0-108-17	4-2-4-4				10			231.3
25	B0-108-18	3-4-6-7				12			287.8
	B0-108-19	6-6-6-6				15		3.5	45.3
	B0-108-20	3-6-9-17				18		3.75	21.2
30	B0-108-21	3-5-7-11			FINE SANDY CLAY, VERY STIFF, GRAY.	23	3.7		28.8
	B0-108-22	8-11-11-12			FINE CLAYEY SAND, MEDIUM, GRAY.				27.4
					END OF BORING AT 44 FEET.				
35									
40									
45									
50			0 10 20 30 40 50						

NOTE : All depths referred to existing grade

COMMENTS :
NR= NO RECOVERY

PAGE 1 OF 1

SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-109

PROJECT : AMRICAS WORLD TRACE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 46 ft. | DRILL RIG : CME-55 | DRILLER : JOSE L. MORALES

SURFACE ELEV. : N/A | DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER | LOGGED BY : J. A. MEDERO

WATER LEVEL : 4 ft. | SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS | DATE STARTED : 09/03/99

ELAPSED TIME : N/A | HAMMER WEIGHT : 140 LBS | DATE ENDED : 09/03/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-109-1	10-10-11-9	SILTY CLAYEY SAND AND LIMESTONE FRAGMENTS, TRACE FINE SAND, VERY STIFF, YELLOWISH RED AND WHITE.	21			
	BO-109-2	10-8-5-7		14			
	BO-109-3	3-3-4-4	SILTY CLAY AND LIMESTONE FRAGMENTS, TRACE FINE SAND, STIFF TO MEDIUM, YELLOWISH BROWN AND VERY PALE ORANGE.	7			
5	BO-109-4	HW-1-HW		1			NR
	BO-109-5	HW-HW-HW		W/H			
10	BO-109-6	HW-HW-HW-HW	FINE TO MEDIUM LIMESTONE FRAGMENTS AND SILTY CLAY, TRACE FINE SAND, SOFT, YELLOWISH BROWN AND VERY PALE ORANGE.	W/H			
	BO-109-7	HW-HW-HW-HW	SLIGHTLY ORGANIC SILTY CLAY, VERY SOFT, DARK GRAY.	W/H			
	BO-109-8	7-4-1-2	CLAY, LITTLE FINE SAND, MEDIUM, BLUISH GRAY, OLIVE AND BROWNISH GRAY.	5			
15	BO-109-9	2-1-1-2	CLAY, TRACE FINE SAND, SOFT, GRAY AND OLIVE YELLOW.	2			
	BO-109-10	1-2-1-2	DISEMINATED PEAT AND FINE SAND, SOFT, DARK BROWN AND GRAY.	3			
20	BO-109-11	HW-HW-1-HW	SLIGHTLY ORGANIC SILTY CLAY, LITTLE FINE SAND, VERY SOFT, DARK GRAY AND GRAY.	1			
	BO-109-12	1-1-1-2	DISEMINATED PEAT AND ORGANIC SILTY CLAY, SOFT, BLACK AND BROWNISH GRAY.	2			
	BO-109-13	HW-HW-HW-HW	ORGANIC SILTY CLAY, VERY SOFT TO SOFT, VERY DARK GRAYISH BROWN, TRACE SHELLS FRAGMENTS.	W/H			
25	BO-109-14	2-2-2-2		4			
	BO-109-15	1-1-1-1		2			
30	BO-109-16	HW-HW-2-1		2			
	BO-109-17	1-2-1-2		3			
	BO-109-18	HW-2-2-2		4			
35	BO-109-19	3-4-4-3	PEAT, TRACE FINE SAND, OCC. SHELLS FRAGMENTS, SOFT, DARK BROWN AND GRAY.	8			
	BO-109-20	1-3-3-3	CONSOLIDATED PEAT MEDIUM, BLACK AND DARK BROWN.	6			
40	BO-109-21	1-3-5-7	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, MEDIUM, BLUISH GRAY AND OLIVE YELLOW, OCC. INLAYING DECAYED PARTICLES, STIFF, OLIVE AND GRAY.	8			
	BO-109-22	8-8-8-9	CLAY, TRACE FINE SAND, VERY STIFF, OLIVE AND GRAY MOTTLED.	18			
	BO-109-23	8-10-12-10		22			
45							
50			END OF BORING AT 46 FEET.				

N VALUE * WATER CONTENT ----•---- GRAPH

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS : AS= AUGER SAMPLE
NR= NO RECOVERY

SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-110

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 44 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 1 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/02/99
DATE ENDED : 09/02/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-110-1	30-27-50/4	FINE TO MEDIUM LIMESTONE AND GRAVEL FRAGMENTS, SOME SANDY SILT, HARD, YELLOWISH BROWN AND GRAY.	77			12.9
	BO-110-2	21-14-8-6		22			18.0
	BO-110-3	25-12-12-12	FINE TO MEDIUM LIMESTONES FRAGMENTS AND SILTY CLAY, TRACE FINE SAND, VERY STIFF, YELLOWISH BROWN.	24			31.3
5	BO-110-4	6-3-2-1		5			25.5
	BO-110-5	HW-HW-HW-HW	CLAYEY SILT AND LIMESTONE FRAGMENTS, TRACE TO LITTLE FINE SAND, STIFF, YELLOWISH BROWN.	W/H			65.5
10	BO-110-6	HW-HW-HW-HW	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, SOFT, DARK GRAY.	W/H			72.1
	BO-110-7	HW-7-8-8	FINE TO MEDIUM SAND, MEDIUM, LIGHT GRAY.	15			46.3
	BO-110-8	1-1-1-1	DISEMINATED PEAT AND FINE SAND, SOFT, DARK BROWN AND GRAY	2			138.8
15	BO-110-9	1-1-1-1		2			60.5
	BO-110-10	HW-HW-HW-HW	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND AND PEAT, VERY SOFT, DARK GRAY AND BROWN.	W/H			137.0
20	BO-110-11	HW-HW-2-1	FINE TO MEDIUM SAND, OCC. SHELLS FRAGMENTS, LOOSE, GRAY.	2			38.9
	BO-110-12	2-1-2-1		3			79.47
	BO-110-13	2-2-2-2	ORGANIC SILTY CLAY, SOFT, DARK GRAY AND GRAYISH BROWN, DARK BROWNISH GRAY, OCC. PEAT INCLUSIONS AND OCC. SHELLS FRAGMENTS	4			105.03
25	BO-110-14	HW-HW-2-2		2			88.2
	BO-110-15	1-1-2-2		3			87.0
30	BO-110-16	HW-HW-2-2		2			82.6
	BO-110-17	1-2-1-1		3		0.5	85.7
	BO-110-18	1-2-3-3		5			235.8
35	BO-100-19	2-3-4-6	DISEMINATED PEAT, MEDIUM, VERY DARK BROWN.	7			177.5
	BO-110-20	4-4-7-9		11	2.1		22.6
40	BO-110-21	4-6-10-10	CLAY, TRACE FINE SAND, STIFF TO VERY STIFF, BLUISH GRAY OLIVE BROWN AND, YELLOWISH BROWN, GRAY MOTTLED.	16	3.0		27.4
	BO-110-22	8-12-14-16		26	1.4		31.5
45			END OF BORING AT 44 FEET.				
50							

N VALUE * / WATER CONTENT ---•--- GRAPH

GRAPHIC LOG

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS : AS= AUGER SAMPLE
NR= NO RECOVERY

PAGE 1 OF 1

SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-111

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 44 ft. | DRILL RIG : CME-55 | DRILLER : JOSE L. MORALES

SURFACE ELEV. : N/A | DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER | LOGGED BY : J. A. MEDERO

WATER LEVEL : 6 ft. | SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS | DATE STARTED : 09/01/99

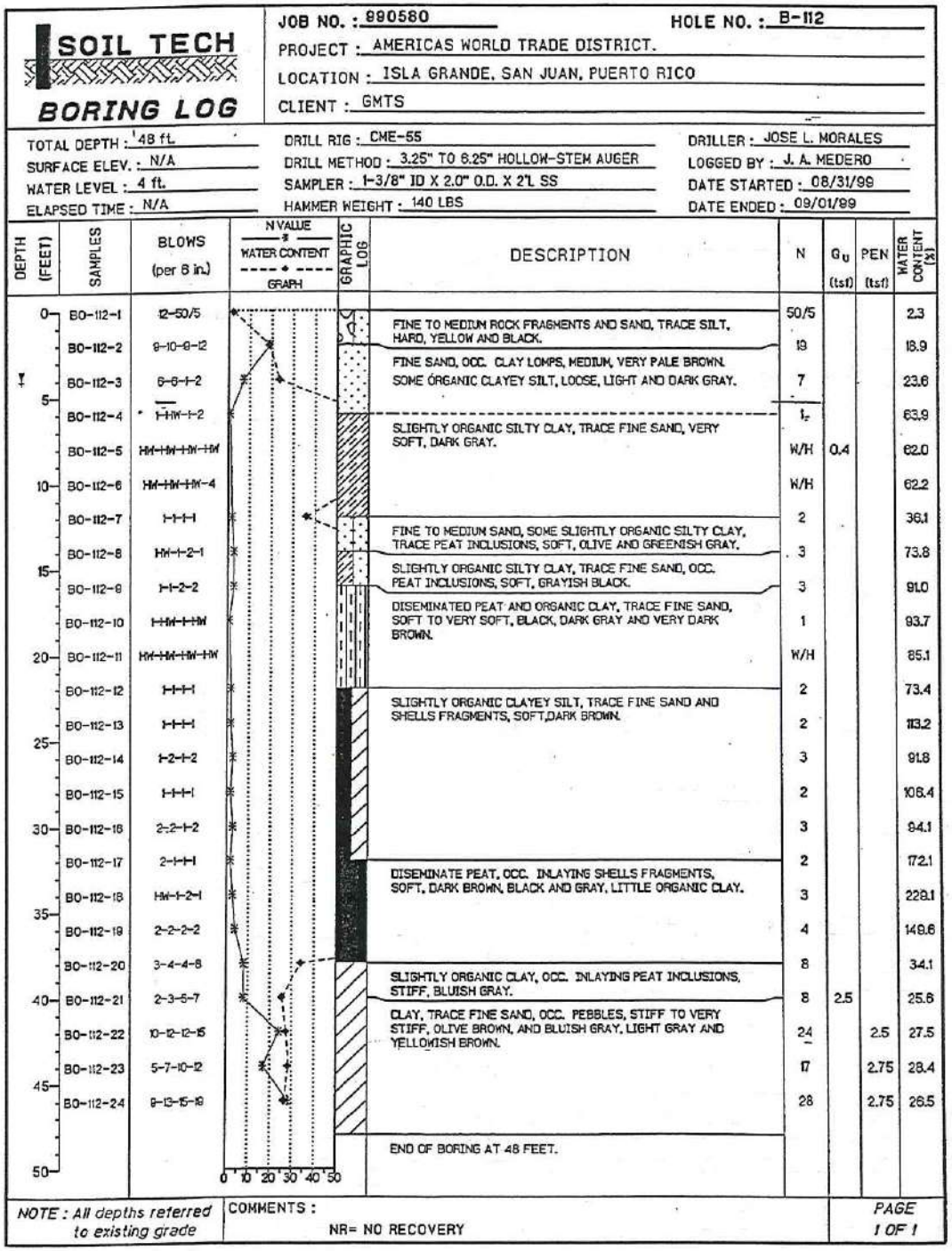
ELAPSED TIME : N/A | HAMMER WEIGHT : 140 LBS | DATE ENDED : 09/01/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-112-1	17-30-25-18	FINE TO COARSE ROCK FRAGMENTS AND SANDY SILT, HARD, YELLOWISH BROWN AND GRAY.	55			7.8
	BO-112-2	9-7-5-5		12			24.25
	BO-112-3	4-5-6-5	SILTY CLAY AND LIMESTONE FRAGMENTS TRACE FINE SAND, STIFF, YELLOWISH BROWN.	11			30.8
5	BO-112-4	3-4-4-3		8			31.8
	BO-112-5	2-HW-HW-HW	NO RECOVERY	W/H			NR
10	BO-112-6	HW-HW-HW-HW	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, SOFT, DARK OLIVE GRAY.	W/H	.04		65.7
	BO-112-7	1-1-1		3	.04		58.0
	BO-112-8	HW-HW-6-8	FINE TO MEDIUM SAND, LOOSE, GRAY.	6			33.5
15	BO-112-9	3-3-4-5		7			31.0
	BO-112-10	5-5-3-3		8			30.6
20	BO-112-11	4-2-2-2		4			30.7
	BO-112-12	1-1-2		2	1.3		105.6
	BO-112-13	1-2-3-4	DISEMINATED PEAT, SOFT TO STIFF, VERY DARK BROWN.	5			260.1
25	BO-112-14	4-6-8-8		14			283.2
	BO-112-15	3-5-6-8		11			251.5
30	BO-112-16	2-3-10-14		13			24.9
	BO-112-17	5-7-10-8	FINE TO MEDIUM SAND, MEDIUM, GRAYISH BROWN.	17			15.5
	BO-112-18	4-8-14-17		22	3.8		19.2
35	BO-112-19	12-12-14-10	CLAY TRACE TO LITTLE FINE SAND, VERY STIFF, GRAY, YELLOW AND RED MOTTLED.	26			14.0
	BO-112-20	5-7-10-13	CLAYEY SAND, MEDIUM, LIGHT GRAY.	17			15.5
40	BO-112-21	2-12-17-17		29			15.1
	BO-112-22	17-24-31-32		55	1.2		12.7
45			SANDY CLAY, GRAY.				
			END OF BORING AT 44 FEET.				
50							

N VALUE / WATER CONTENT GRAPH: 0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS : AS= AUGER SAMPLE
NR= NO RECOVERY



SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-112

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 48 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 4 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 08/31/99
DATE ENDED : 09/01/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-112-1	12-50/5	FINE TO MEDIUM ROCK FRAGMENTS AND SAND, TRACE SILT, HARD, YELLOW AND BLACK.	50/5			2.3
	BO-112-2	9-10-9-12	FINE SAND, OCC. CLAY LOMPS, MEDIUM, VERY PALE BROWN.	19			18.9
	BO-112-3	6-6-1-2	SOME ORGANIC CLAYEY SILT, LOOSE, LIGHT AND DARK GRAY.	7			23.6
5	BO-112-4	1-HW-1-2		1/2			63.9
	BO-112-5	HW-HW-HW-HW	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, VERY SOFT, DARK GRAY.	W/H	0.4		62.0
10	BO-112-6	HW-HW-HW-4		W/H			62.2
	BO-112-7	1-1-1-1		2			36.1
	BO-112-8	HW-1-2-1	FINE TO MEDIUM SAND, SOME SLIGHTLY ORGANIC SILTY CLAY, TRACE PEAT INCLUSIONS, SOFT, OLIVE AND GREENISH GRAY.	3			73.8
15	BO-112-9	1-1-2-2	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, OCC. PEAT INCLUSIONS, SOFT, GRAYISH BLACK.	3			91.0
	BO-112-10	1-HW-1-HW	DISEMINATED PEAT AND ORGANIC CLAY, TRACE FINE SAND, SOFT TO VERY SOFT, BLACK, DARK GRAY AND VERY DARK BROWN.	1			93.7
20	BO-112-11	HW-HW-HW-HW		W/H			85.1
	BO-112-12	1-1-1-1		2			73.4
	BO-112-13	1-1-1-1	SLIGHTLY ORGANIC CLAYEY SILT, TRACE FINE SAND AND SHELLS FRAGMENTS, SOFT, DARK BROWN.	2			113.2
25	BO-112-14	1-2-1-2		3			91.8
	BO-112-15	1-1-1-1		2			106.4
30	BO-112-16	2-2-1-2		3			84.1
	BO-112-17	2-1-1-1		2			172.1
	BO-112-18	HW-1-2-1	DISEMINATE PEAT, OCC. INLAYING SHELLS FRAGMENTS, SOFT, DARK BROWN, BLACK AND GRAY, LITTLE ORGANIC CLAY.	3			229.1
35	BO-112-19	2-2-2-2		4			149.6
	BO-112-20	3-4-4-8		8			34.1
40	BO-112-21	2-3-5-7	SLIGHTLY ORGANIC CLAY, OCC. INLAYING PEAT INCLUSIONS, STIFF, BLUISH GRAY.	8	2.5		25.8
	BO-112-22	10-12-12-15	CLAY, TRACE FINE SAND, OCC. PEBBLES, STIFF TO VERY STIFF, OLIVE BROWN, AND BLUISH GRAY, LIGHT GRAY AND YELLOWISH BROWN.	24		2.5	27.5
	BO-112-23	5-7-10-12		17		2.75	28.4
45	BO-112-24	9-13-15-19		28		2.75	26.5
50			END OF BORING AT 48 FEET.				

N VALUE # — WATER CONTENT ---- • ---- GRAPH

GRAPHIC LOG

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :
NR= NO RECOVERY

PAGE 1 OF 1

A.3.27
TEST BORING LOG
Job 990580; ID B-112

PRCD MASTER PLAN VOLUME 7

CONVENTION CENTER DISTRICT AUTHORITY Commonwealth of Puerto Rico — COLLIERS INTERNATIONAL

220

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APPENDICES

SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-113

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 38 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 7 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 08/31/99
DATE ENDED : 08/31/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-113-1	21-21-50/5	FINE TO MEDIUM ROCK FRAGMENTS TRACE SANDY SILT, HARD, DARK GRAYISH BROWN AND REDDISH YELLOW.	71/11"			3.3
	BO-113-2	7-16-17-18	FINE TO MEDIUM LIMESTONE FRAGMENTS, SOME SANDY SILT, HARD, VERY PALE ORANGE.	33			8.4
	BO-112-3	7-7-11-6		18			19.2
5	BO-113-4	4-5-2-3	FINE TO COARSE LIMESTONE FRAGMENTS AND CLAY, TRACE FINE SAND, VERY STIFF, OLIVE AND VERY PALE ORANGE.	7			27.2
	BO-113-5	9-4-2-6	FINE TO COARSE SAND TRACE CLAY AND SOME CORAL, LIMESTONE AND SHELLS FRAGMENTS, MEDIUM, OLIVE GRAY.	6			23.7
10	BO-113-6	4-5-3-2		8			28.7
	BO-113-7	5-1-1-1		2			27.8
	BO-113-8	4-2-1-3		3			28.8
15	BO-113-9	4-4-3-2		7			38.5
	BO-113-10	5-4-4-2	FINE TO COARSE SAND CORALS AND SHELLS FRAGMENTS, MEDIUM, GRAY.	8			30.1
20	BO-113-11	4-1-1-2	SLIGHTLY ORGANIC SILTY CLAY, OCC. PEAT INCLUSSIONS TRACE FINE SAND, SOFT DARK GRAY.	2	0.9		59.2
	BO-113-12	1-2-1-2		3			52.3
	BO-113-13	1-2-2-3	FIBREOUS PEAT, SOFT TO STIFF, DARK BROWN.	4			208.8
25	BO-113-14	3-2-4-5		6			249.2
	BO-113-15	2-2-4-5		6			194.2
30	BO-113-16	4-4-6-5		10			335.9
	BO-113-17	4-5-9-8		14			256.1
	BO-113-18	HW-1-HW-4		1			23.0
35	BO-113-19	9-19-29-38	CLAY, TRACE TO LITTLE FINE SAND, OCC. PEAT, INCLUSSIONS, SOFT, GRAY AND BLACK MOTTHED.	48			
	BO-113-20		FINE TO MEDIUM SAND, DENSE, BROWNISH GRAY.				
	BO-113-21		END OF BORING AT 38 FEET.				
40	BO-113-22						
	BO-113-23						
45							
50							

N VALUE — ● — WATER CONTENT - - - ◆ - - - GRAPH

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS : NR= NO RECOVERY

PAGE 1 OF 1

A.3.28
TEST BORING LOG
Job 990580; ID B-113

PRCD MASTER PLAN VOLUME 7
CONVENTION CENTER DISTRICT AUTHORITY
Commonwealth of Puerto Rico
COLLIERS INTERNATIONAL
221

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APPENDICES

SOIL TECH

BORING LOG

JOB NO. : 390580 HOLE NO. : B-114

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 48 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 8 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 8.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 08/30/99
DATE ENDED : 08/31/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	N VALUE * WATER CONTENT GRAPH	GRAPHIC LOG	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-114-1	3-4-5-9			SILTY CLAY TRACE TO LITTLE FINE SAND, OCC. PEBBLES, STIFF, STRONG BROWN.	9		3.25	17.7
	BO-114-2	10-10-10-6			FINE CLAYEY SAND, OCC. LIMESTONE FRAGMENTS, MEDIUM, YELLOWISH BROWN.	20			13.8
	BO-114-3	3-3-4-5			SILTY CLAY AND LIMESTONES FRAGMENTS, TRACE TO LITTLE FINE SAND, MEDIUM, REDDISH YELLOW.	7			17.2
5	BO-114-4	3-3-4-3			CLAY, LITTLE TO SOME FINE SAND, OCC. PEBBLES, MEDIUM, OLIVE YELLOW, GRAY AND BROWNISH YELLOW.	7		.75	23.6
	BO-114-5	2-2-2-2			CLAY, LITTLE TO SOME FINE SAND, BROWNISH YELLOW AND GRAY.	4	0.6		17.5
10	BO-114-6	2-3-3-3			FINE TO MEDIUM SAND, LOOSE, LIGHT GRAY.	6			70.6
	BO-114-7	1-2-1-2			VERY FINE SAND, VERY LOOSE, OLIVE GRAY AND YELLOW.	3			29.1
	BO-114-8	HW-HW-HW-HW				W/H			78.8
15	BO-114-9	HW-HW-HW-HW			SLIGHTLY ORGANIC SILTY CLAY, SOFT, DARK GRAY.	W/H			59.9
	BO-114-10	1-1-1-1				2			61.2
20	BO-114-11	1-3-7-8			FINE TO MEDIUM SAND, TRACE SLIGHTLY ORGANIC SILTY CLAY, MEDIUM,GRAY.	10			30.6
	BO-114-12	3-3-2-3			FINE TO MEDIUM SAND, OCC. CLAY LUMPS, MEDIUM GRAY.	13			25.8
	BO-114-13	1-HW-2-1			DISEMINATED PEAT AND ORGANIC CLAY, SOFT, BLACK AND DARK GRAY.	2			67.6
25	BO-114-14	3-3-2-3			FIBREOUS PEAT, MEDIUM, DARK BROWN.	5			205.0
	BO-114-15	2-2-2-4				4			273.7
30	BO-114-16	1-1-3-4				4			271.0
	BO-114-17	3-4-5-6				9			282.1
	BO-114-18	3-4-4-7				8			265.8
35	BO-114-19	5-5-6-5				11			365.7
	BO-114-20	3-4-17-28			FINE TO MEDIUM SAND,LOOSE TO DENSE, GRAYISH BROWN.	21			17.8
40	BO-114-21	HW-HW-HW-4				W/H			19.0
	BO-114-22	13-21-17-24				38			17.0
	BO-114-23	5-7-7-8				14			17.4
45	BO-114-24	7-13-25-32			NO RECOVERY	38	NR	NR	NR
50			0 10 20 30 40 50		END OF BORING AT 48 FEET.				

NOTE : All depths referred to existing grade

COMMENTS :
NR= NO RECOVERY

PAGE 1 OF 1

SOIL TECH
BORING LOG

JOB NO. : 990580 HOLE NO. : B-115
PROJECT : AMERICAS WORLD TRADE DISTRICT.
LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO
CLIENT : GMTS

TOTAL DEPTH : 44 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 2 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/02/99
DATE ENDED : 09/02/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	G_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-115-1	30-41-30-30	FINE TO MEDIUM ROCK FRAGMENTS, TRACE SANDY SILT, HARD, GRAYISH BROWN.	71			8.3
	BO-115-2	9-8-8-11		17			8.5
	BO-115-3	6-8-10-7	FINE SAND, OCC. ROCK FRAGMENTS, MEDIUM, YELLOWISH BROWN.	18			8.7
5	BO-115-4	1-1-1-1	FINE SAND, MEDIUM, PALE BROWN.	2			31.6
	BO-115-5	HW-HW-HW-HW	SLIGHTLY ORGANIC SILTY CLAY, SOFT, DARK GRAY.	W/H			34.8
10	BO-115-6	HW-HW-HW-HW		W/H			32.1
	BO-115-7	5-5-5-2	FINE TO MEDIUM SAND, LOOSE, GRAY.	10			31.6
	BO-115-8	1-2-1-2	DISEMINATED PEAT, SOFT, DARK BROWN AND GRAY.	3			54.9
15	BO-115-9	HW-1W-1-1		1			52.4
	BO-115-10	1-HW-HW-HW	ORGANIC SILTY CLAY OCC. PEAT INCLUSSIONS, VERY SOFT, VERY DARK GRAY AND DARK BROWN.	W/H			31.6
20	BO-115-11	HW-HW-HW-HW		W/H			28.3
	BO-115-12	HW-HW-2-2	SLIGHTLY ORGANIC SILTY CLAY, OCC. SHELLS FRAGMENTS, SOFT, DARK GRAY AND DARK BROWN.	2		.50	54.9
	BO-115-13	HW-HW-1-1		1			26
25	BO-115-14	2-1-2-1		3		.25	54.2
	BO-115-15	HW-HW-1-1		1			47.3
30	BO-115-16	HW-HW-2-1		2			43.4
	BO-115-17	1-2-1-2	DISEMINATED PEAT, OCC. SHELLS FRAGMENTS, SOFT, VERY DARK BROWN.	3			55.0
	BO-115-18	HW-2-2-2		4			64.8
35	BO-115-19	1-2-1-3	SLIGHTLY ORGANIC SILTY CLAY, OCC. PEAT INCLUSSIONS AND PEBBLES, SOFT, DARK OLIVE GRAY AND BLACK MOTTLED.	3	0.5		45.5
	BO-115-20	2-4-5-5	CLAY TRACE FINE SAND, OCC. PEBBLES AND WHITE SPOTS, HARD, AND OLIVE YELLOWISH BROWN.	9	1.3		32.0
40	BO-115-21	3-6-8-13		14	3.3		28.1
	BO-115-22	14-14-16-16		30	3.6		28.3
45			END OF BORING AT 44 FEET.				
50							

GRAPHIC LOG: N VALUE ● — WATER CONTENT ▲ - - - GRAPH; 0 10 20 30 40 50

NOTE : All depths referred to existing grade

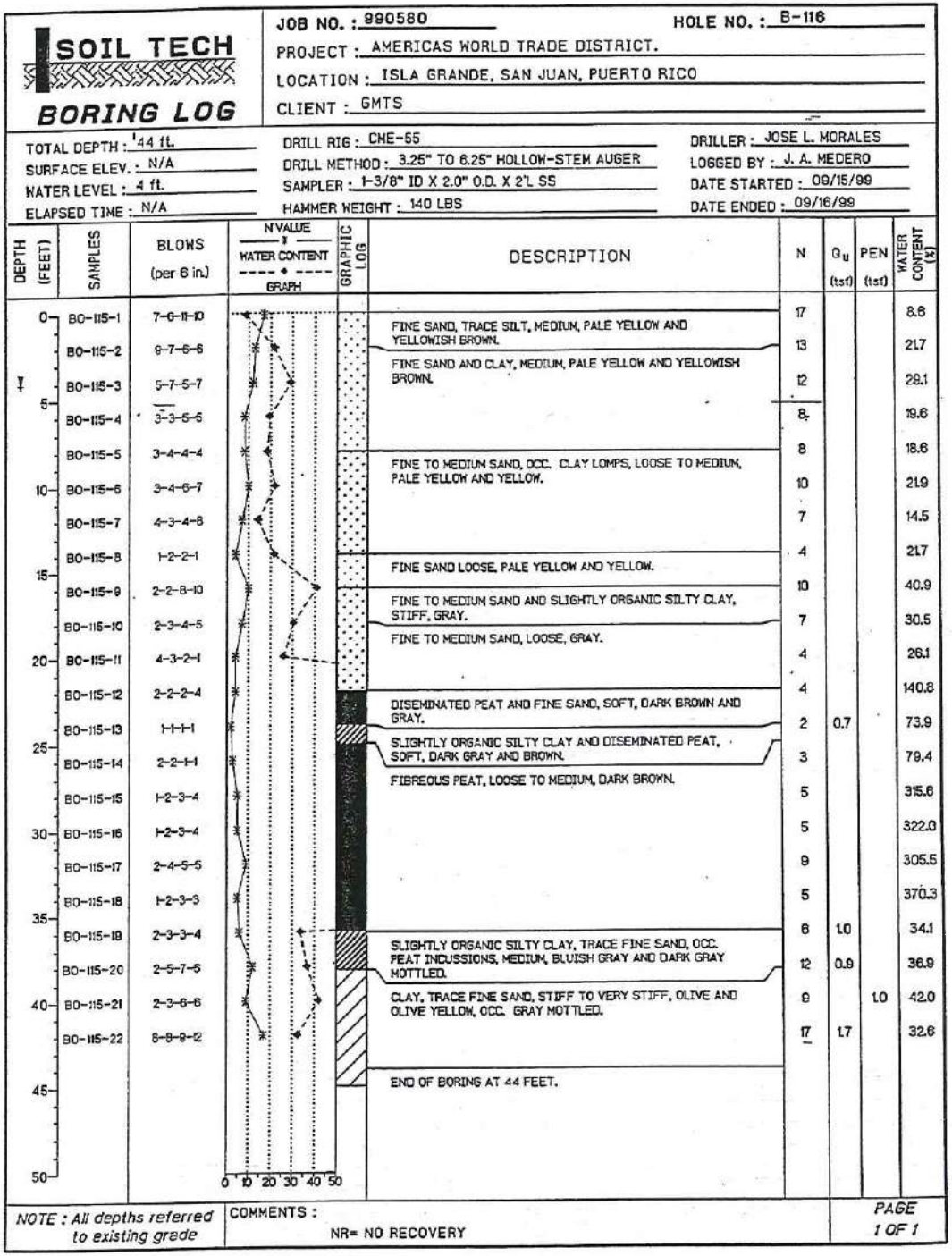
COMMENTS : NR= NO RECOVERY

PAGE 1 OF 1

A.3.30
TEST BORING LOG
Job 990580; ID B-115

PRCD MASTER PLAN VOLUME 7
CONVENTION CENTER DISTRICT AUTHORITY Commonwealth of Puerto Rico
COLLIERS INTERNATIONAL
223

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APPENDICES



SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-116

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 44 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 4 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/15/99
DATE ENDED : 09/16/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-115-1	7-6-11-10	FINE SAND, TRACE SILT, MEDIUM, PALE YELLOW AND YELLOWISH BROWN.	17			8.8
	BO-115-2	8-7-6-6		13			21.7
	BO-115-3	5-7-5-7	FINE SAND AND CLAY, MEDIUM, PALE YELLOW AND YELLOWISH BROWN.	12			28.1
5	BO-115-4	3-3-5-5		8			19.6
	BO-115-5	3-4-4-4		8			18.6
	BO-115-6	3-4-6-7	FINE TO MEDIUM SAND, OCC. CLAY LUMPS, LOOSE TO MEDIUM, PALE YELLOW AND YELLOW.	10			21.9
10	BO-115-7	4-3-4-8		7			14.5
	BO-115-8	1-2-2-1		4			21.7
	BO-115-9	2-2-8-10	FINE SAND LOOSE, PALE YELLOW AND YELLOW.	10			40.9
15	BO-115-10	2-3-4-5	FINE TO MEDIUM SAND AND SLIGHTLY ORGANIC SILTY CLAY, STIFF, GRAY.	7			30.5
	BO-115-11	4-3-2-1	FINE TO MEDIUM SAND, LOOSE, GRAY.	4			26.1
	BO-115-12	2-2-2-4		4			140.8
	BO-115-13	1-1-1-1	DISEMINATED PEAT AND FINE SAND, SOFT, DARK BROWN AND GRAY.	2	0.7		73.9
20	BO-115-14	2-2-1-1	SLIGHTLY ORGANIC SILTY CLAY AND DISEMINATED PEAT, SOFT, DARK GRAY AND BROWN.	3			79.4
	BO-115-15	1-2-3-4	FIBREOUS PEAT, LOOSE TO MEDIUM, DARK BROWN.	5			315.8
	BO-115-16	1-2-3-4		5			322.0
25	BO-115-17	2-4-5-5		9			305.5
	BO-115-18	1-2-3-3		5			370.3
	BO-115-19	2-3-3-4	SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, OCC. PEAT INCUSSIONS, MEDIUM, BLUISH GRAY AND DARK GRAY MOTTLED.	6	1.0		34.1
30	BO-115-20	2-5-7-5		12	0.9		36.9
	BO-115-21	2-3-6-6	CLAY, TRACE FINE SAND, STIFF TO VERY STIFF, OLIVE AND OLIVE YELLOW, OCC. GRAY MOTTLED.	9		1.0	42.0
	BO-115-22	8-8-9-12		17	1.7		32.6
35			END OF BORING AT 44 FEET.				
40							
45							
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N VALUE — WATER CONTENT ---- GRAPH

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :
NR= NO RECOVERY

PAGE 1 OF 1

SOIL TECH
BORING LOG

JOB NO. : 990580 HOLE NO. : B-117
PROJECT : AMERICAS WORLD TRADE DISTRICT.
LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO
CLIENT : GMTS

TOTAL DEPTH : 40 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 8 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/22/99
DATE ENDED : 09/22/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-117-1	17-9-10-11	SILTY CLAY AND LIMESTONE FRAGMENTS, TRACE TO LITTLE FINE SAND, VERY STIFF, YELLOWISH BROWN AND VERY PALE ORANGE, OCC. SHELLS FRAGMENTS.	19		4.5	11.7
	BO-117-2	18-17-13-11		30		2.5	6.2
	BO-117-3	3-2-4-3		6			20.5
5	BO-117-4	3-3-6-7		9			21.3
	BO-117-5	10-7-7-4		14			28.6
			FINE TO MEDIUM LIMESTONE FRAGMENTS AND SANDY CLAY, STIFF, YELLOWISH BROWN.				
10	BO-117-6	3-6-4-2		10			14.7
	BO-117-7	3-3-2-1	SILTY CLAY AND LIMESTONE FRAGMENTS, TRACE FINE SAND, STIFF, DARK YELLOWISH BROWN.	5			36.8
			DO, MEDIUM, OLIVE.				
	BO-117-8	HW-3-1-2		4			65.1
15			SLIGHTLY ORGANIC SILTY CLAY, TRACE FINE SAND, SOFT, DARK GRAY.				
	BO-117-9		SHELBY 16' @ 18'.				
	BO-117-10						
20	BO-117-11	2-2-3-4	FIBREOUS PEAT AND FINE SAND, MEDIUM, VERY DARK BROWN AND GRAY.	5			17.3
	BO-117-12	4-7-7-7		14			70.4
	BO-117-13	3-4-3-2	FINE SAND, TRACE SHELLS AND PEAT, MEDIUM GRAY AND DARK BROWN.	7			34.9
25	BO-117-14	2-2-3-4	FINE SAND, OCC. SHELLS FRAGMENTS.	5	1.7		25.4
	BO-117-15		FIBREOUS PEAT, MEDIUM, VERY DARK BROWN.				
			SHELBY 28' @ 30'.				
30	BO-117-16	2-2-3-4		5			342.4
	BO-117-17	4-4-5-4	FIBREOUS PEAT, MEDIUM, VERY DARK BROWN, BLACK.	8			284.6
	BO-117-18	2-3-4-3		7	1.3		34.9
35	BO-117-19	4-5-7-8	SLIGHTLY ORGANIC CLAY, TRACE FINE SAND, OCC. INLAYING DECAYED PARTICLES, MEDIUM, BLUISH GRAY.	12	1.7		34.7
	BO-117-20	6-7-10-16	CLAY, TRACE FINE SAND, OCC. INLAYING DECAYED PARTICLES, STIFF, OLIVE YELLOW AND OLIVE BROWN.	17	2.8		31.0
40	BO-117-21		END OF BORING AT 40 FEET.				
	BO-117-22						
45							
50							

N VALUE * — WATER CONTENT * - - - GRAPH

GRAPHIC LOG

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :
NR= NO RECOVERY

PAGE 1 OF 1

A.3.32
TEST BORING LOG
Job 990580; ID B-117

PRCD MASTER PLAN VOLUME 7
CONVENTION CENTER DISTRICT AUTHORITY Commonwealth of Puerto Rico
COLLIERS INTERNATIONAL
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APPENDICES

SOIL TECH

BORING LOG

JOB NO. : 990580 HOLE NO. : B-118

PROJECT : AMERICAS WORLD TRADE DISTRICT.

LOCATION : ISLA GRANDE, SAN JUAN, PUERTO RICO

CLIENT : GMTS

TOTAL DEPTH : 38 ft.
SURFACE ELEV. : N/A
WATER LEVEL : 8 ft.
ELAPSED TIME : N/A

DRILL RIG : CME-55
DRILL METHOD : 3.25" TO 6.25" HOLLOW-STEM AUGER
SAMPLER : 1-3/8" ID X 2.0" O.D. X 2'L SS
HAMMER WEIGHT : 140 LBS

DRILLER : JOSE L. MORALES
LOGGED BY : J. A. MEDERO
DATE STARTED : 09/30/99
DATE ENDED : 09/30/99

DEPTH (FEET)	SAMPLES	BLOWS (per 6 in.)	DESCRIPTION	N	Q_u (tsf)	PEN (tsf)	WATER CONTENT (%)
0	BO-118-1	11-9-13-21	SILTY CLAY AND LIMESTONE FRAGMENTS, TRACE TO LITTLE FINE SAND, VERY STIFF, REDDISH YELLOW, YELLOWISH BROWN AND VERY PALE ORANGE.	22			10.3
	BO-118-2	11-12-8-12		20			17.3
	BO-118-3	8-13-11-16		24		2.5	15.1
5	BO-118-4	10-13-10-7		23		1.50	15.5
	BO-118-5	5-3-6-6	SLIGHTLY ORGANIC CLAY, TRACE FINE SAND, OCC. LIMESTONE FRAGMENTS, STIFF, OLIVE AND YELLOWISH BROWN.	9			29.5
10	BO-118-6	5-5-5-4		10			25.1
	BO-118-7	WH-WH-WH-1	ORGANIC SILT, TRACE PEAT, INCLUSIONS AND FINE SAND, SOFT, DUSK GRAY.	WH			86.3
	BO-118-8		SHELBY 12' @ 14'.				
15	BO-118-9	WH-WH-1-1	DISEMINATED PEAT AND ORGANIC CLAYEY SILT, VERY SOFT, DARK GRAYISH BROWN.	1			84.5
	BO-118-10	3-3-2-2	FINE TO MEDIUM SAND, LOOSE, GRAY.	5			25.9
20	BO-118-11	2-2-1-2	FINE TO MEDIUM SANDY CLAY, SOFT, GRAY.	3			51.2
	BO-118-12	1-1-4-2	ORGANIC CLAYEY SILT, TRACE TO LITTLE FINE SAND, MEDIUM, GRAYISH BROWN AND GRAY.	5			17.9
	BO-118-13	2-3-3-4	FIBREOUS PEAT, MEDIUM, DARK BROWN.	6			213.9
25	BO-118-14		SHELBY 26' @ 28'.				
	BO-118-15	2-2-3-4	FIBREOUS PEAT, MEDIUM, VERY DARK BROWN.	5			268.6
30	BO-118-16	1-2-4-5		6			282.0
	BO-118-17	1-2-3-3	SLIGHTLY ORGANIC CLAY, TRACE FINE SAND, OCC. PEAT INCLUSIONS, MEDIUM TO VERY STIFF, GRAY.	5	0.5		29.8
	BO-118-18	4-5-6-9		11	1.6		21.2
35	BO-118-19	8-10-11-15		21	1.0		18.1
			END OF BORING AT 38 FEET.				
40							
45							
50							

N VALUE ● — WATER CONTENT ▲ ---- GRAPH

GRAPHIC LOG

0 10 20 30 40 50

NOTE : All depths referred to existing grade

COMMENTS :
NR= NO RECOVERY

PAGE 1 OF 1

APPENDIX IV

Available Geotechnical and Environmental Document List:

Geotechnical Reports for Convention Center:

"Geotechnical Report, Subsoil Investigation ...." Prepared by Suelos Inc., dated 17 February 2000.

"Geotechnical & Subsoil Investigation Report for Trade and Convention Center, Frontage Road Parcel I-B, Isla Grande, San Juan, Puerto Rico" prepared by Suelos Inc. dated 25 August 2003.

"Complimentary Soil Report, ReEvaluation Recommendations for Trade and Convention Center, San Juan, Puerto Rico" prepared by Suelos Inc. dated October 31, 2000 (Volumes I and II).

"2nd Complimentary Soil Report....." prepared by Suelos Inc. dated 5 December 2000.

Geotechnical Reports for Earthwork Roads and Utilities:

Technical Letters No. 1 to 9 for Americas World Trade District, San Juan P.R., prepared by Geotechnical Materials Testing Services (GMTS) dated February 2000 to January 2001.

Environmental Reports:

"Phase I Environmental Assesment, Puerto Rico Trade & Convention Center District" prepared by Gaya & Associates, dated August 1998.

"Phase II/III Environmental Assesment, Puerto Rico Trade and Convention Center District, Miramar Puerto Rico" prepared by CSA Architects and Engineers, dated May 1999.

Site Improvement Drawings:

DP-1/DP-2 Earthwork Roads and Utilities, prepared by CSA Architects and Engineers dated September 20, 2002

Stone Columns Piles and Earthwork, Prepared by CSA Architects and Engineers, dated September 20, 2002.

Table No.1 Detailed Water and Sanitary Points of Connections

Block	Convention Center	Retail/ Rest/Entertaiments	Hotel	Office	Cinemas	Museum	Residential	Hotel	Total for Water Demand (gal/day)	Equivalent Residential Units of Water Demand	No. of Water Points of Connection	Total for Sanitary Contribution (gal/day)	Peak Capacity Block Contribution	No. of Sanitary Sewer Points of Connection
	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Units	Rooms						
A	1,303,456								390,771	977	2-6"DIA; 2-4"DIA	123,284	281,089	5-8"DIA
B1a		37,000	469,000					500	361,092	903	1-8"DIA; 1-8"DIA (1); 1-8"DIA (2)	266,000	606,479	1-8"DIA; 1-8"DIA (1); 1-8"DIA (2)
B1b		18,000	139,201		62,000			350	268,984	672		191,317	436,202	
B1c		44,000		170,500					64,306	161	1-8"DIA (3); 1-8"DIA (1)	55,277	126,031	1-8"DIA (3); 1-8"DIA (1)
B1d		32,000		216,200					74,409	186	1-8"DIA (2); 1-8"DIA (3)	67,843	154,681	1-8"DIA (2); 1-8"DIA (3)
B2		2,000		216,200					65,416	164	1-4"DIA	65,005	148,212	1-8"DIA
B3	Parcel has been changed to a parking building								15,889	40	1-4"DIA	5,013	11,429	1-8"DIA
C		50,000		19,400			114		66,406	166	2-4"DIA	50,445	115,015	2-8"DIA
D							111		44,400	111	1-4"DIA	38,850	88,578	1-8"DIA
E				50,555					15,156	38	1-4"DIA	15,156	34,556	1-8"DIA
F				50,000					14,900	37	1-4"DIA	14,900	34,177	1-8"DIA
G				50,000					14,900	37	1-6"DIA	14,900	34,177	1-8"DIA
H	Parcel has been changed to a park area - water demand for pecious use maintained								7,345	18	2-2"DIA; 1-4"DIA	2,317	5,283	1-8"DIA
I						152,592			45,746	114	1-8"DIA; 1-2"DIA	14,433	32,906	1-8"DIA
J			468,875					920	644,000	1,610	2-8"DIA	483,000	1,101,240	1-10"DIA
Other uses									52,800	132	VARIES	46,200	105,336	VARIES
TOTALS	1,303,456	183,000	1,077,076	722,855	62,000	152,592	225	1,770	2,146,761	5,234		1,465,119		

Usage **Water Demand**

Commercial/Retail/Offi	300 gal/day/93sm
Hotel	700 gal/day/room
Residential	400 gal/day/unit

Usage **Sanitary Contribution**

Commercial/Retail	4000 gal/day/cuerda
Hotel	525 gal/day/room
Office	300 gal/day/93sm
Residential	350 gal/day/unit

Other uses include park areas, kiosks, irrigation, public bathrooms and maintenance building

NOTE

(1) SHARED BETWEEN BLOCKS B1-a, B1-b AND B1-d

(2) SHARED BETWEEN BLOCKS B1-a, B1-b AND B1-c

(3) SHARED BETWEEN BLOCKS B1-d AND B1-c

4 Blocks Water Meters must be provided by the Developer and Aproved by PRASA

Table No. 2 - Densities, Detailed District Electrical Demands

Block	Convention Center	Retail/ Rest/Entertainments	Hotel	Office	Cinemas	Museum	Residential	Hotel	Parking	Total for Electrical Demand (KVA)	Points of connections and voltage to be connected	Remarks
	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Units	Rooms				
A	1,303,456								1,950	22,000	4-8" conduits for 38 KV (direct connection from PRCCD substation).	see note 1
B1a		37,000	469,000					500	396	4,946	2-8" conduits for 38 KV that could be used by any of the parcels. Four sets of (6-3" and 4-4") for 13.2 KV that could be shared between parcels.	see note 5
B1b		18,000	139,201		62,000			350		960		see note 2 & 5
B1c		44,000		170,500					328	2,653		see note 2 & 5
B1d		32,000		216,200					466	3,090		see note 2 & 5
B2		2,000		216,200					573	2,756	6-3" and 4-4" for 13.2 KV	see note 2
B3	Parcel has been changed to a parking building								1,200	288	6-3" and 4-4" for 13.2 KV	
C		50,000		10,400			114		278	1,237	Two sets of (6-3" and 4-4") for 13.2 KV	see note 2
D							111		250	615	Two sets of (6-3" and 4-4") for 13.2 KV	see note 2
E				50,555					575	138	Two sets of (6-3" and 4-4") for 13.2 KV	see note 2
F				50,000					200	48	Two sets of (6-3" and 4-4") for 13.2 KV	see note 2
G				50,000					967	832	Two sets of (6-3" and 4-4") for 13.2 KV	see note 2
H	Parcel has been changed to a park area - water demand for previous use maintained									631	Two sets of (6-3" and 4-4") for 13.2 KV	see note 4
I						152,592			284	2,128	Two sets of (6-3" and 4-4") for 13.2 KV	see note 2
J			468,875					920	474	4,615	2-8" for 38KV and (6-3" and 4-4") for 13.2 KV	see note 2 & 5
Other loads										1,650	Various at 13.2 KV	see note 3
TOTALS	1,303,456	183,000	1,077,076	772,855	62,000	152,592	225	1,770	7,941	48,587		

Usage	Electrical Demand	Diversity factor
Commercial/Retail/Office	15 VA/sq. ft.	0.8
Hotel	12 VA/sq. ft.	0.8
Residential	6250 VA/residential unit	0.8
Museum	15 VA/sq. ft.	0.9
Parking	300 VA/parking	0.8

Notes:

Note no.1 - 22000 KVA will be installed at phase I with the capability for the future loads of the phases II and III.

Note no.2 - Parkings will be connected to building's electrical system.

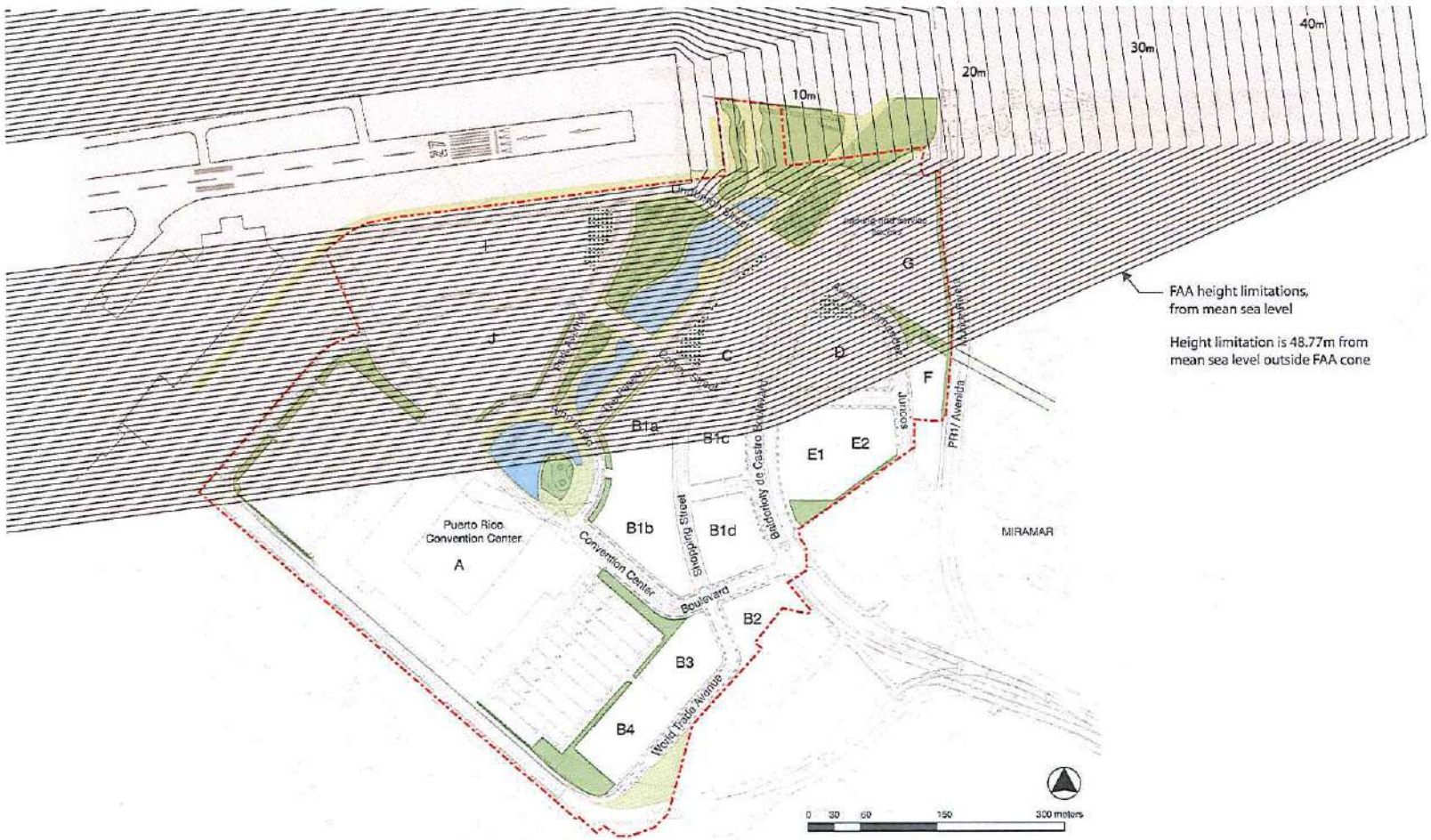
Note no. 3 - Other loads include Maintenance Bldg., Pump Stations and Street lighting.

Note no. 4 - Block converted to park area - power demand for previous use maintained

Note no. 5 - For the 38 KV point of connections the developer of the parcels shall be responsible to furnish and install the 38 KV

Table No. 3 - District Communication Point of Connections

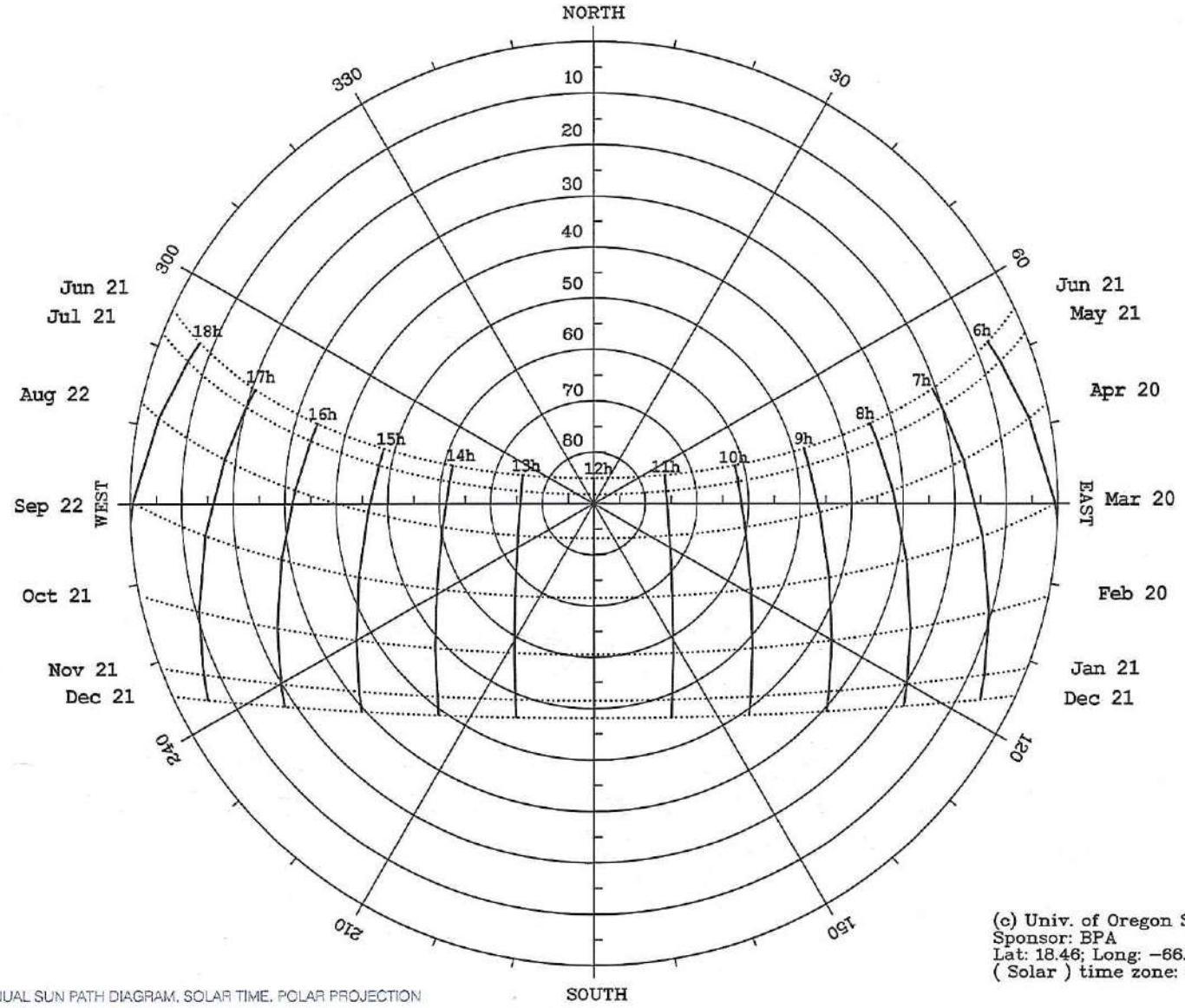
Block	Convention Center	Retail/ Rest/Entertaiments	Hotel	Office	Cinemas	Museum	Residential	Hotel	Telephone points of connections	Cable TV points of connections
	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Area (sq.ft.)	Units	Rooms		
A	1,303,456								Three sets of 4-4" conduits	Three sets of 2-4" conduits
B1a		37,000	469,000					500	Four sets of 4-4" conduits that could be shared between parcels	Four sets of 2-4" conduits that could be shared between parcels
B1b		18,000	139,201		62,000			350		
B1c		44,000		170,500						
B1d		32,000		216,200						
B2		2,000		216,200					4-4" conduits	Two sets of 2-4" conduits
B3	Parcel has been changed to a parking building								Two sets of 4-4" conduits	Two sets of 2-4" conduits
C		50,000		19,400			114		Two sets of 4-4" conduits	Two sets of 2-4" conduits
D							111		Two sets of 4-4" conduits	Two sets of 2-4" conduits
E				50,555					Two sets of 4-4" conduits	Two sets of 2-4" conduits
F				50,000					Two sets of 4-4" conduits	Two sets of 2-4" conduits
G				50,000					Two sets of 4-4" conduits	Two sets of 2-4" conduits
H	Parcel has been changed to a park area - water demand for previous use maintained								Two sets of 4-4" conduits	Two sets of 2-4" conduits
I						152,592			Two sets of 4-4" conduits	Two sets of 2-4" conduits
J			468,875					920	Two sets of 4-4" conduits	Two sets of 2-4" conduits
TOTALS	1,303,456	183,000	1,077,076	772,855	62,000	152,592	225	1,770		



LEGEND

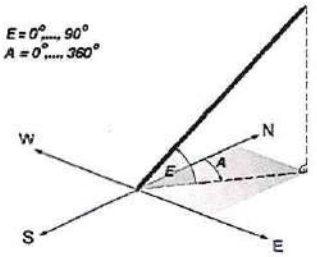
- Building Height limited to between 20m and 46m inside FAA cone
- Building Height limited to 48.77m outside FAA cone

A.8.1
FAA HEIGHT LIMITATIONS



ANNUAL SUN PATH DIAGRAM, SOLAR TIME, POLAR PROJECTION

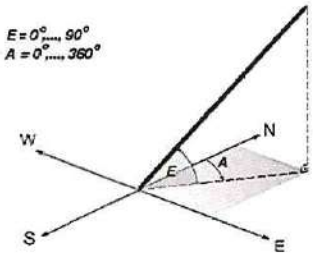
(c) Univ. of Oregon SRML
Sponsor: BPA
Lat: 18.46; Long: −66.11
(Solar) time zone: −4

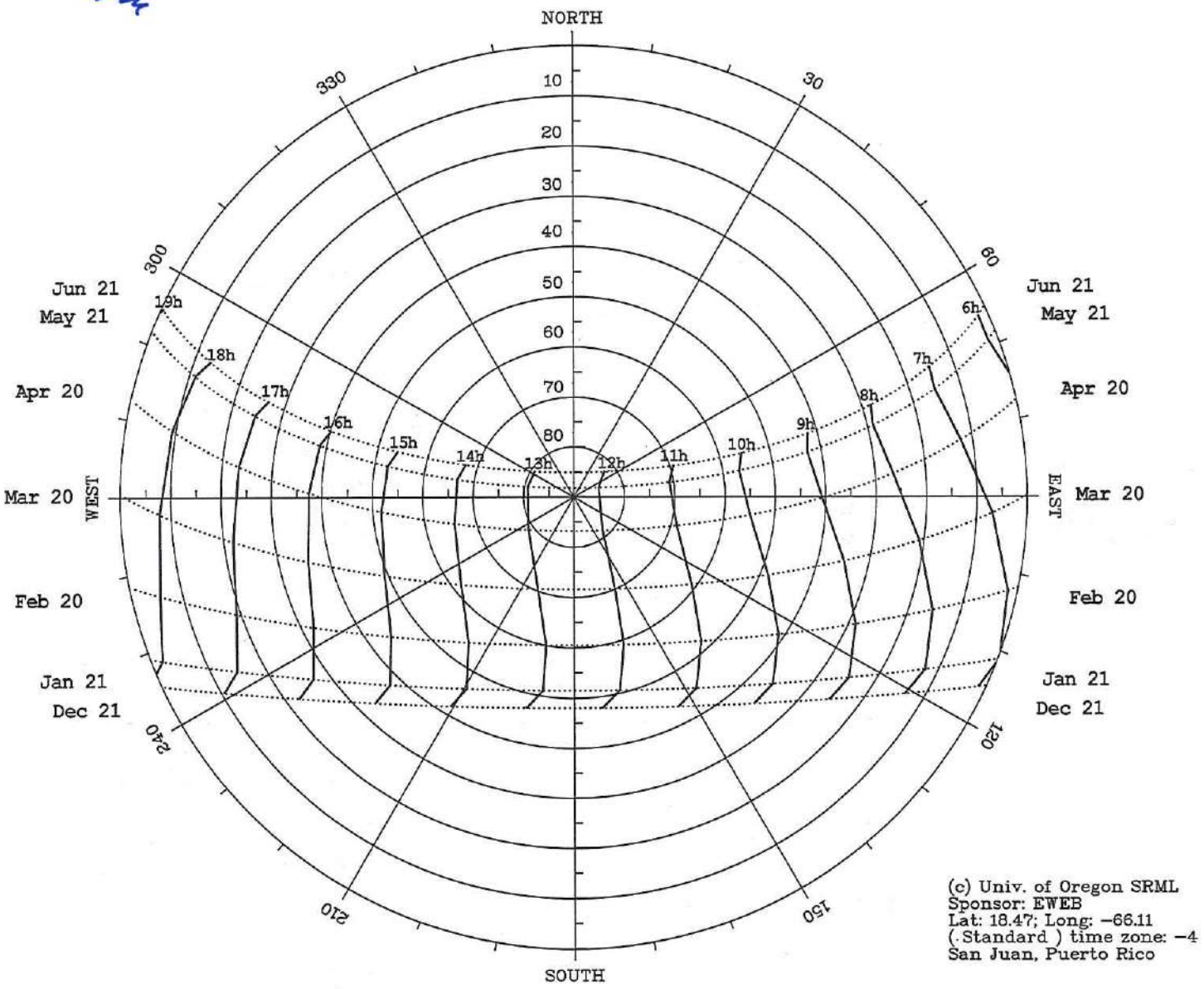


SOLAR PATH CHARTS

The polar sun chart plots the horizontal path of the sun (azimuth) on a given day of the year (dotted lines), along with the corresponding height from the ground (elevation). To read the azimuth and elevation of the sun at a given time and day (such as June 21, 9am), locate the crossing point of the June 21 (dotted, horizontal) and 9 am (solid, vertical) lines. Draw a line going out from the center of the circle through this point and read its azimuth (angle from North axis) on the outer edge of the circle. The concentric circle that passes through this point will be the sun elevation, or its angle from the ground.

*Charts plotted with software available at: http://solardat.uoregon.edu/PolarSunChartProgram.html





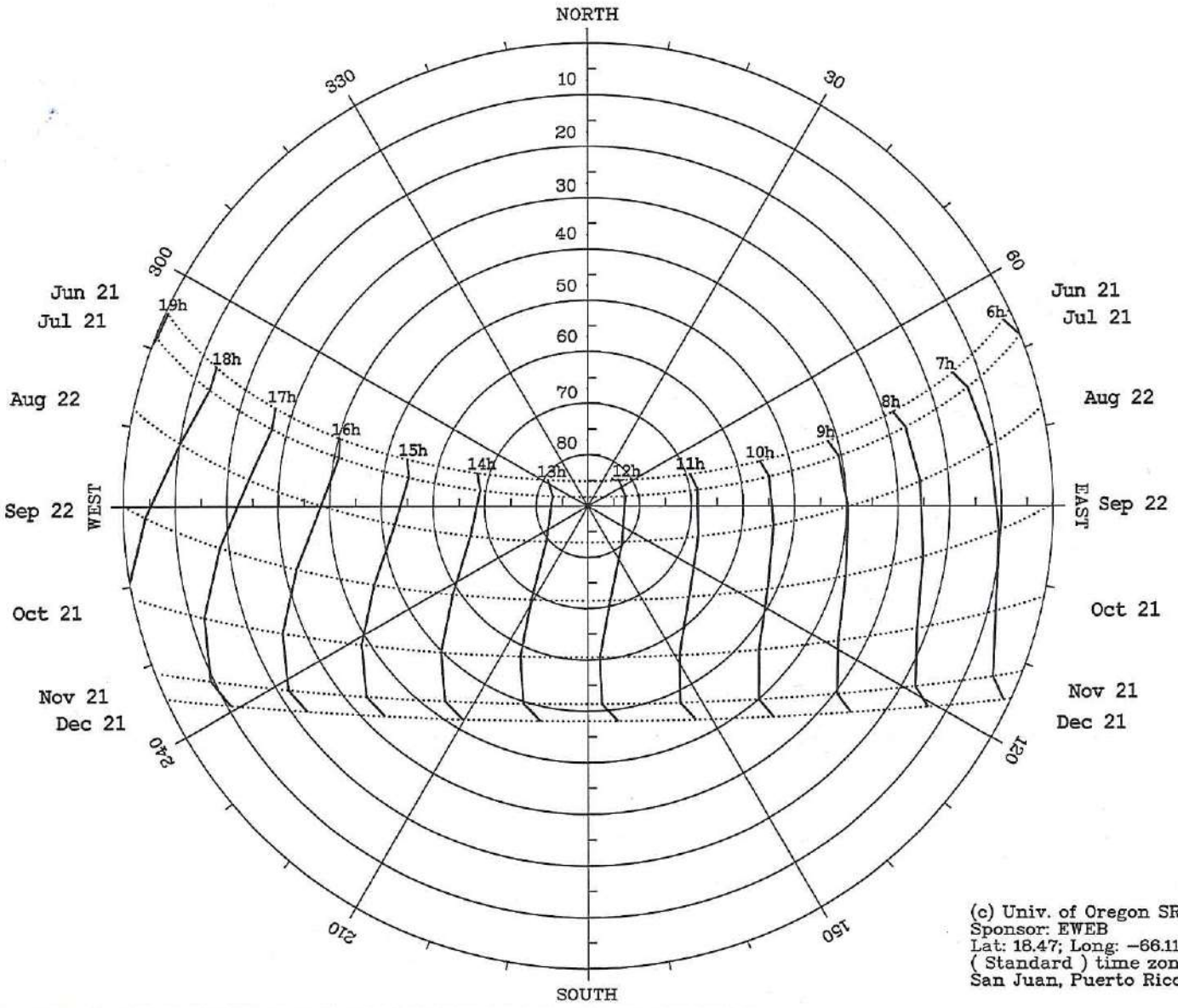
(c) Univ. of Oregon SRML
Sponsor: EWEB
Lat: 18.47; Long: −66.11
(Standard) time zone: −4
San Juan, Puerto Rico

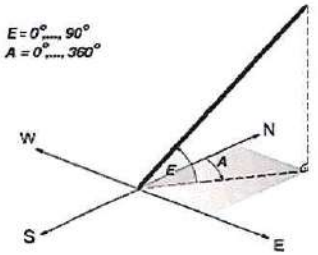
SOLAR PATHS FROM DECEMBER THROUGH JUNE IN LOCAL STANDARD TIME (UTC -4, EST). POLAR PROJECTION
(NOTE: PUERTO RICO DOES NOT OBSERVE DAYLIGHT SAVINGS TIME)

A.9.2
SUN, WIND AND CLIMATE
Solar path chart, Dec-Jun. Local Time

1.0
2.0
3.0
4.0
5.0
6.0

A
APPENDICES





(c) Univ. of Oregon SRML
Sponsor: EWEB
Lat: 18.47; Long: −66.11
(Standard) time zone: −4
San Juan, Puerto Rico

SOLAR PATHS FROM DECEMBER THROUGH JUNE IN LOCAL STANDARD TIME (UTC -4, EST), POLAR PROJECTION
(NOTE: PUERTO RICO DOES NOT OBSERVE DAYLIGHT SAVINGS TIME)

LEGEND

Indicates Rainy Season

Wind Speeds

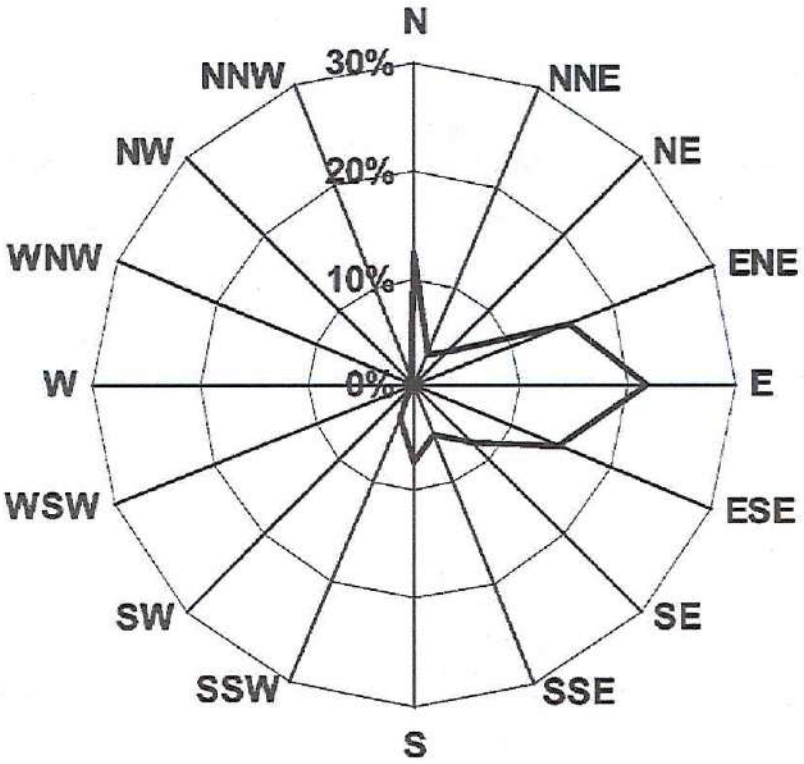
m/s	mph
>11.1	>24.7
8.5-11.1	19.0-24.7
8.5-11.1	12.1-19.0
8.5-11.1	7.5-12.1
8.5-11.1	4.0-7.5
8.5-11.1	1.1-4.0

WIND ROSES
SAN JUAN, PUERTO RICO

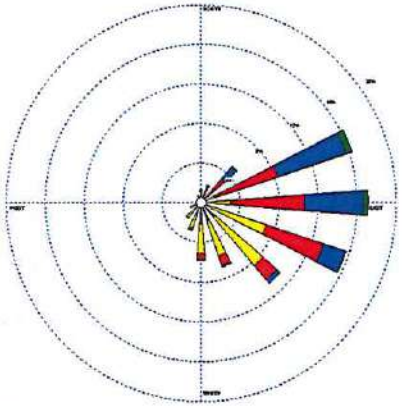
The length of each "spoke" around the circle designates the frequency of winds blowing from that direction, where each ring represents a 5% increase. (North is up)

The Length of each spoke is subdivided into color units representing the frequency of a particular range of wind speeds originating from that direction.

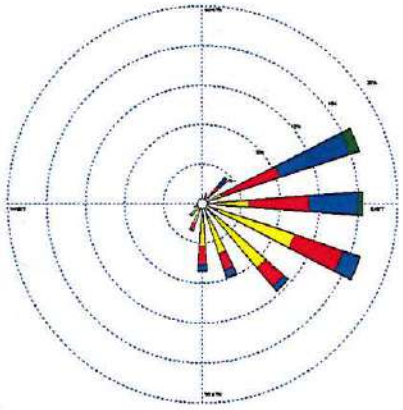
*Sources: United States Department of Agriculture, Natural Resources Conservation Center; "Wind characteristics on the Caribbean island of Puerto Rico" (Altaii, K. and R. N. Farrugia, 2003, Renewable Energy, Volume 28, Issue 11, 1701-1710.)



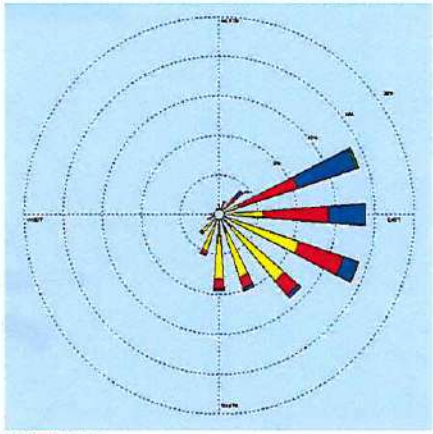
ANNUAL WIND FREQUENCY DISTRIBUTION IN SAN JUAN (1998-2000)



JANUARY



MAY

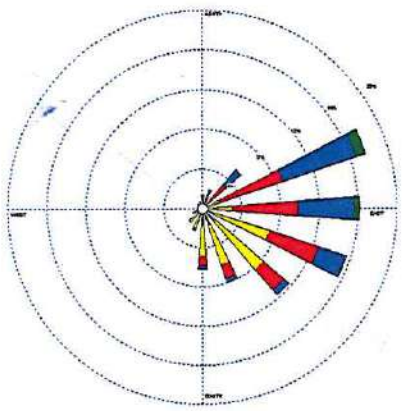


SEPTEMBER

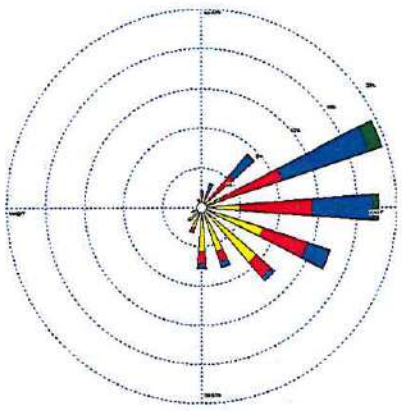
A.9.4
SUN, WIND AND CLIMATE
Monthly and Annual Windroses

1.0
2.0
3.0
4.0
5.0
6.0

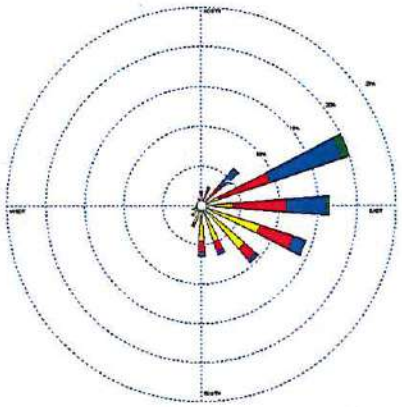
A
APPENDICES



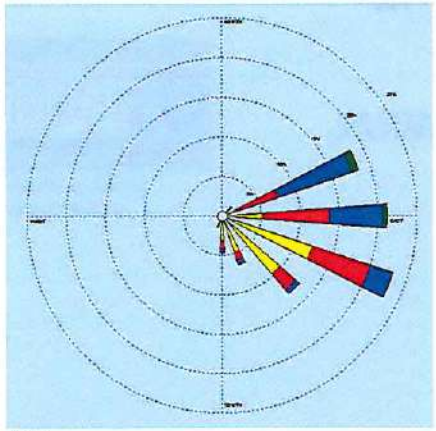
FEBRUARY



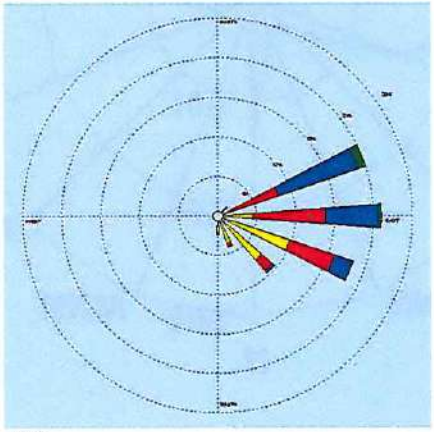
MARCH



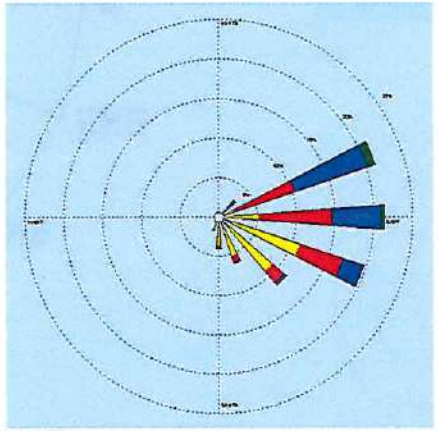
APRIL



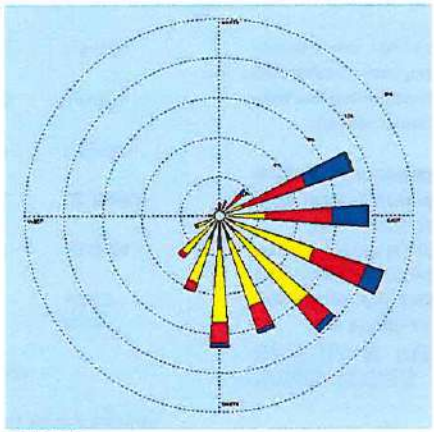
JUNE



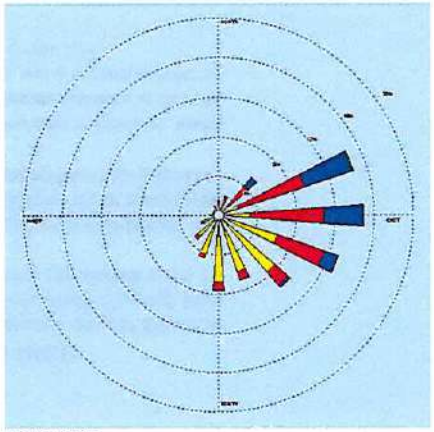
JULY



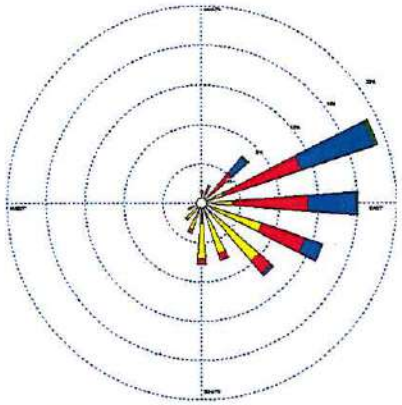
AUGUST



OCTOBER

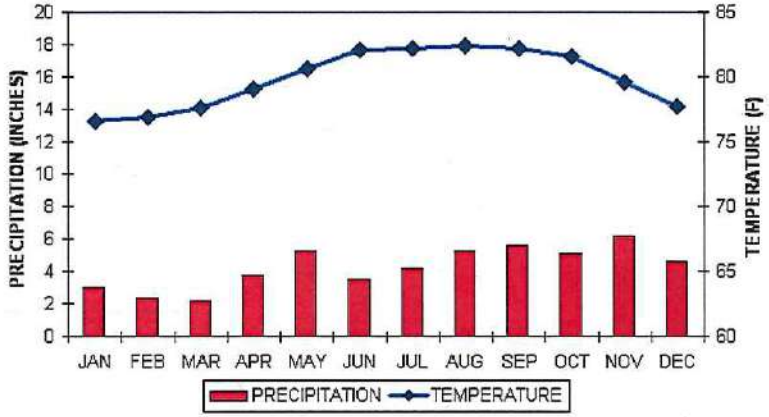


NOVEMBER

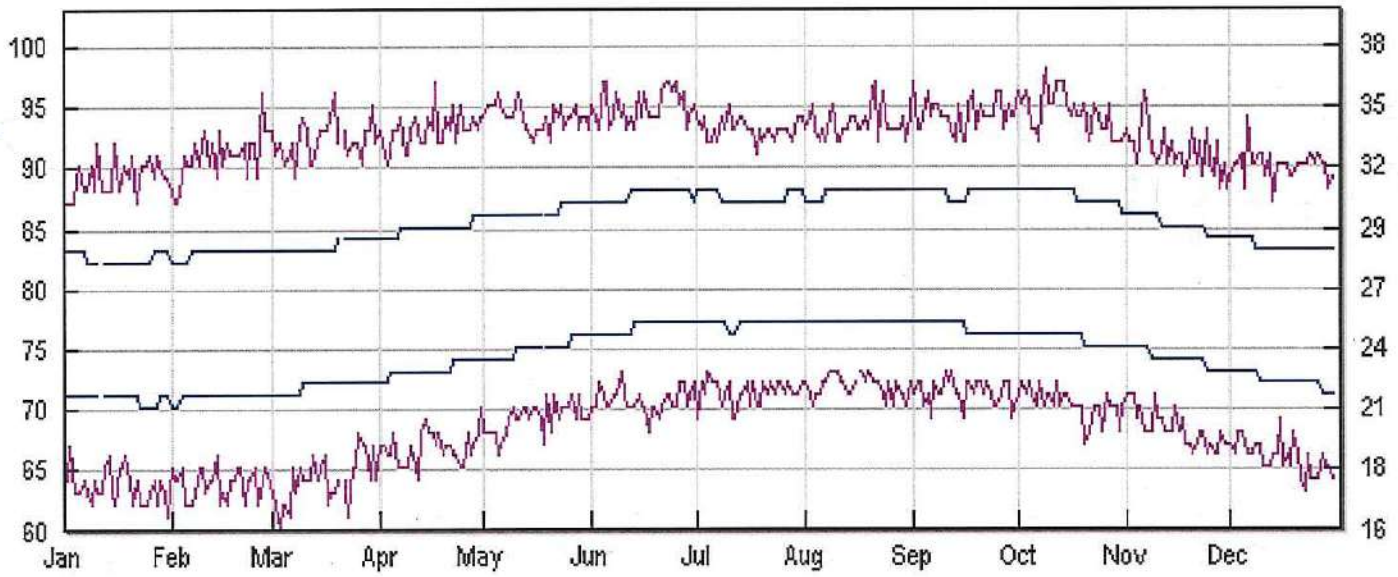


DECEMBER

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Normal daily mean temperature (°F, 1971-2005)												
76.6	76.9	77.6	79.1	80.6	82.1	82.2	82.4	82.2	81.6	79.6	77.7	79.9
Normal daily minimum temperature (°F, 1971-2005)												
70.8	70.9	71.7	73.2	74.9	76.6	76.9	77.0	76.5	75.6	74.0	72.1	74.2
Normal daily maximum temperature (°F, 1971-2005)												
82.4	82.8	83.4	84.9	86.3	87.6	87.4	87.8	87.8	87.5	85.1	83.2	85.5
Highest temperature on record (°F, 1954-2005)												
92	96	96	97	96	97	95	97	97	98	96	94	98
Lowest temperature on record (°F, 1955-2005)												
61	62	60	64	66	69	69	70	69	46	66	59	46
Mean number of days with maximum temperature of 90°F or higher (1956-2005)												
*	1	2	4	6	9	8	11	11	9	2	1	62
Normal cooling degree days (Base 65°F, 1971-2005)												
360	332	388	421	484	513	533	539	515	513	436	392	5426
Average wind speed (mph, 1956-2005)												
8.3	8.7	9.1	8.8	8.3	8.9	9.6	8.7	7.5	6.6	7.4	8.0	8.3
Normal precipitation (inches, 1956-2005)												
3.02	2.30	2.14	3.71	5.29	3.52	4.16	5.22	5.60	5.06	6.17	4.57	50.76
Average relative humidity, morning and afternoon (1956-2005)												
82 65	80 63	77 61	76 62	78 66	77 65	79 67	80 67	79 67	80 67	81 68	82 67	79 65
Mean number of clear, partly cloud and cloudy days (1966-2005)												
9 18 4	7 16 4	9 17 4	7 17 6	4 16 12	4 16 10	5 17 9	5 17 8	4 17 9	5 17 9	5 18 7	7 18 6	73 203 89
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN



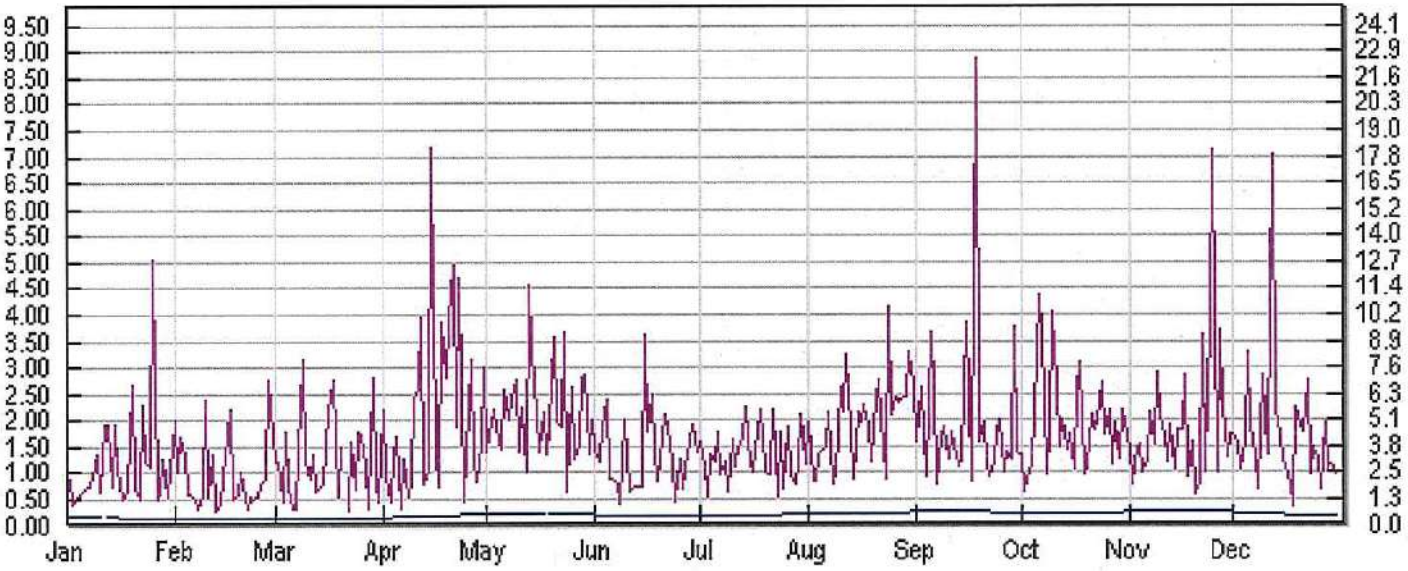
(SOURCE: NOAA NATIONAL DATA CENTER WEBSITE. DATA FOR SAN JUAN INTERNATIONAL AIRPORT.



LEGEND

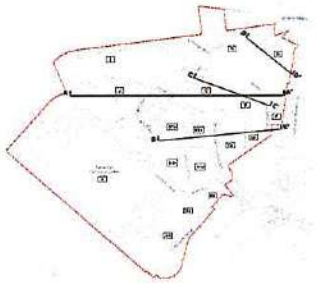
- Normal High/Low Temperatures (above) or Rainfall (below)
- Record High Low Temperatures (above) or Rainfall (below)

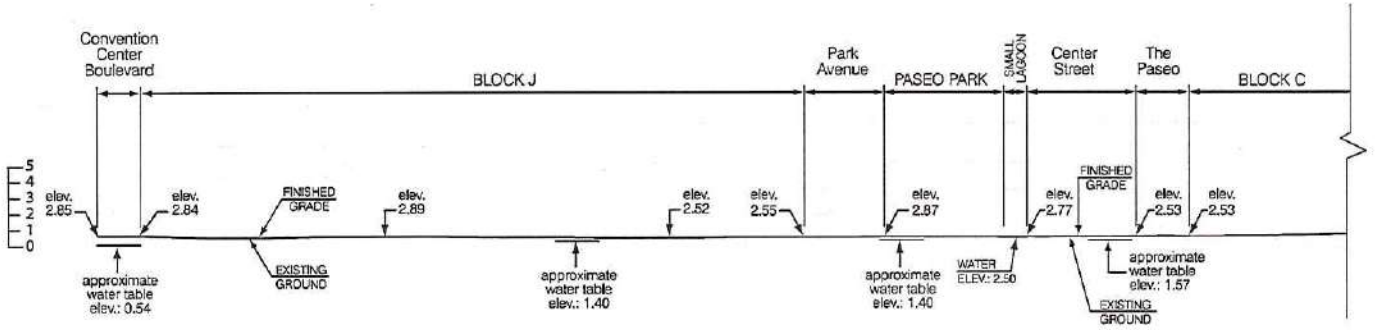
TEMPERATURE



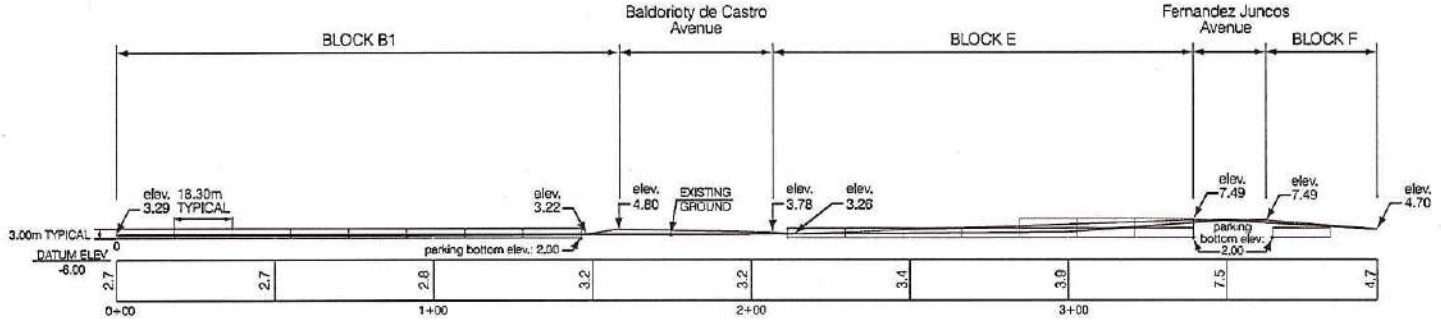
RAINFALL

SOURCE: WEATHER UNDERGROUND WEBSITE.



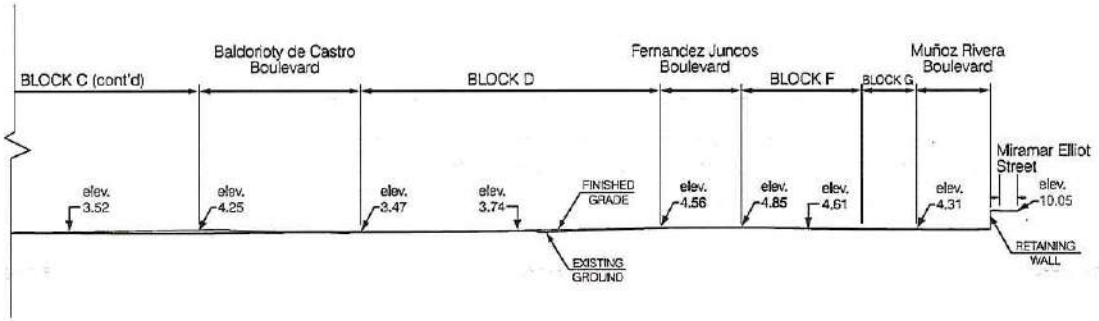


SECTION A

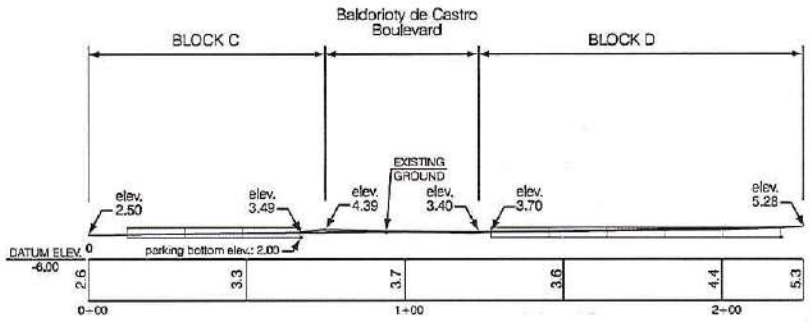


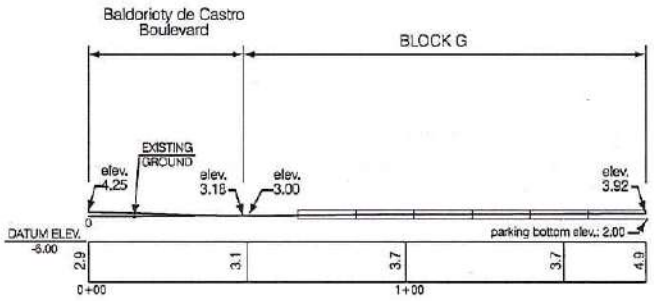
SECTION B

A.10.1
OVERALL SITE SECTIONS



SECTION A (CONTINUED)





SECTION C

SUMMARY OF AREAS FOR ALL PROGRAMS

Block	Use	Const. Area (Sq. Ft.)	Hotel Sq. Ft.	Residential Sq. Ft.	Commercial Sq. Ft.	Office Sq. Ft.
A	Convention Center	1,303,466				
B1a & B1b	Hotel	724,602	455,470		115,132	
B1c	Hotel	330,434	267,300		11,184	
B1d	Offices	415,944			24,322	205,086
B2	Offices	253,400			2,000	117,800
B3	Hotel	370,208	253,208		12,000	
B4	Parking	692,870				
C	Residential Units	349,084		200,358	35,684	17,035
D	Residential Units	395,200		276,000	12,000	
E1	Residential Units	316,880		189,520	12,000	
E2	Residential Units	208,800		147,200		
F	Hotel	141,336	100,759			
G	Hotel/Residential Units	488,167	73,000	276,000	5,000	
I	Aquarium	176,592				
J	Hotel	390,024	322,896		15,678	
TOTALS		6,557,007	1,472,633	1,089,078	245,000	339,921

Residential (UVBs)	563
Hotel (Keys)	1,772
Offices (sq. ft.)	339,921
Commercial / Restaurants (Sq. Ft.)	245,000
Civic (Sq. Ft.)	1,456,058
Parking (Spaces)	7,914

Civic Sq. Ft.	Parking Sq. Ft.	Residential Units (UVBs)	Hotel Rooms	Parking Spaces	Lot Area			
					Sq. Mts.	(CDAS)	Sq. Ft.	FAR
1,303,466				1,950	111,020.33	28.25	1,195,012.91	1.1
	154,000		503	467	18,650.86	4.75	200,756.19	3.6
	51,950		300	277	5,820.54	1.48	62,651.78	5.3
	186,536			527	6,513.77	1.66	70,113.63	5.9
	133,600			579	4,269.62	1.09	45,957.77	5.5
	105,000		300	0	5,069.05	1.29	54,562.85	6.8
	692,870			2,056	9,195.68	2.34	98,981.49	7.0
	96,007	90		380	9,969.47	2.54	107,310.49	3.3
	107,200	140		335	9,046.02	2.30	97,370.59	4.1
	115,360	103		330	7,329.41	1.86	78,893.11	4.0
	61,600	80		176	4,570.06	1.16	49,191.67	4.2
	40,577		169	82	5,190.51	1.32	55,870.13	2.5
	134,167	150	100	383	19,663.33	5.00	211,654.35	2.3
152,592	24,000			180	24,620.56	6.26	265,013.54	0.7
	51,450		400	192	18,461.57	4.70	198,718.67	2.0
1,456,058	1,954,317	563	1,772	7,914	259,391	66	2,792,059	