site&building analyses

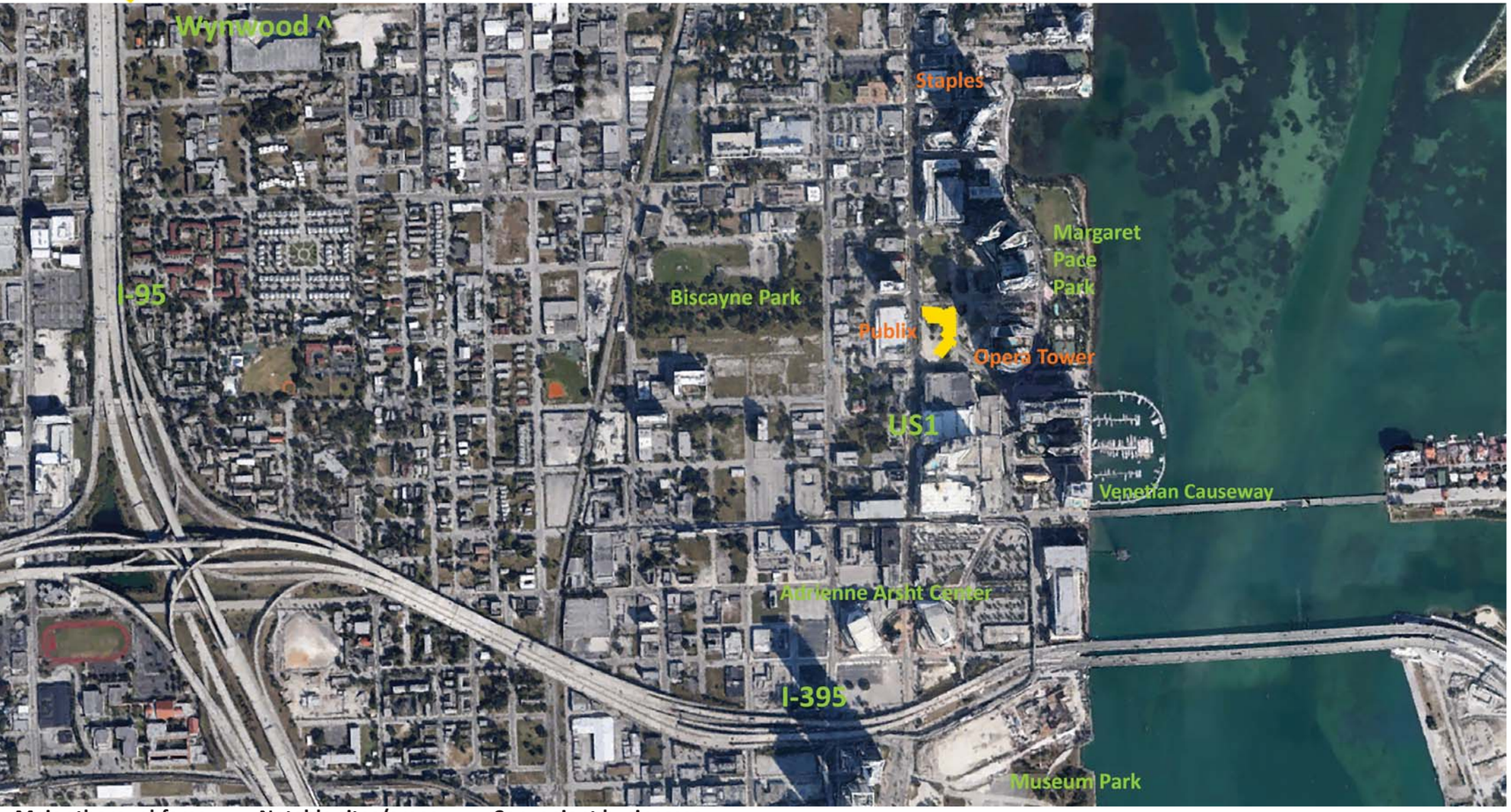
Amy Alonso | Grad II, Spring 2015

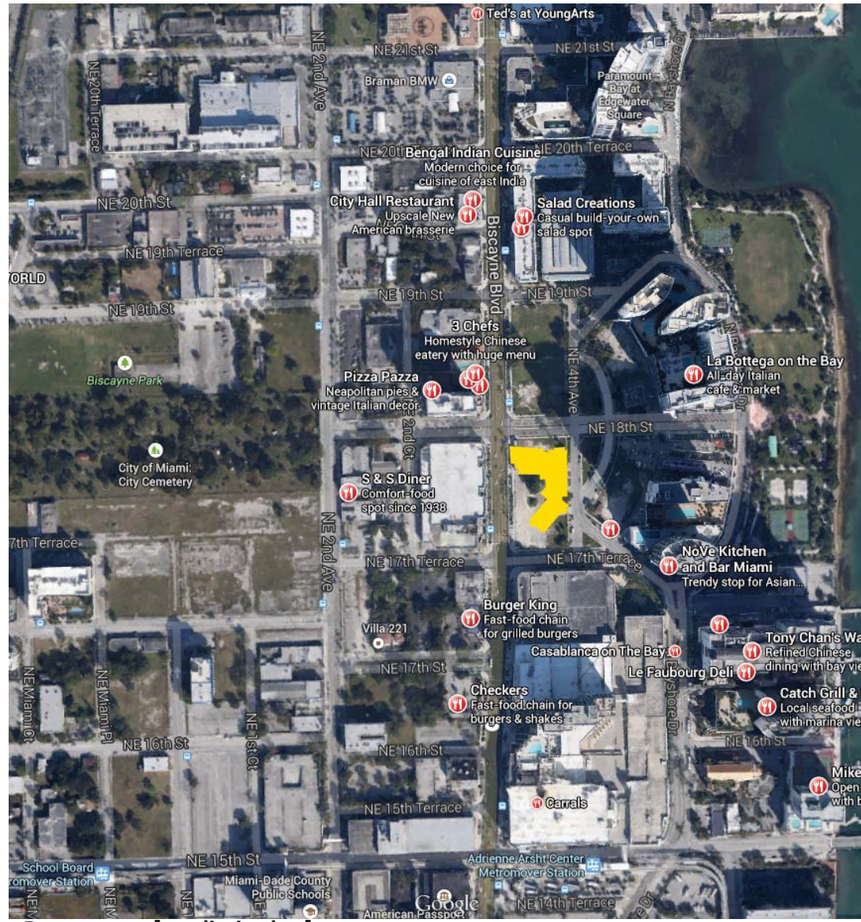
TABLE OF CONTENTS

The purpose of the following analyses is to gain a well-rounded understanding about the natural and man-made systems, and how they may affect the design of the space. Site analysis includes, for example, light studies, in order to understanding where the greatest source of heat gain in the interior may be, as a result of directional position and window placement. Some analyses require more assumptions (e.g. public and private zones), while others are completely objective (e.g. structural system). Each analysis has some relation to another, creating a holistic comprehension during the analysis phase.

SITE ANALYSIS | location + access

1789 Biscayne Blvd.,
Miami, FL 33132



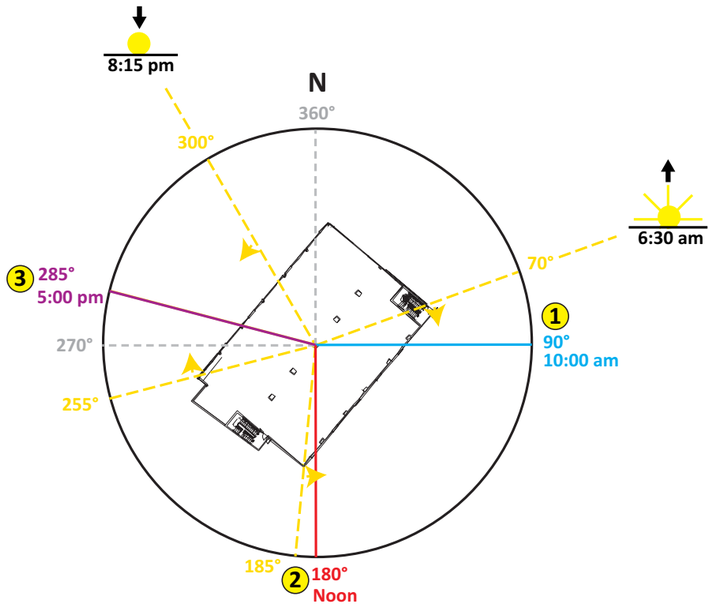


Major thoroughfares:	**Notable sites/areas:**	**Convenient businesses:**
US-1	Margaret Pace Park	Publix
I-395	Biscayne Park	Staples
I-95	Museum Park	Chase Bank
Venetian Causeway	Adrienne Arsht Center	Hilton Miami Downtown
	Wynwood	

Restaurants [not limited to]:
City Hall
3 Chefs
Salad Creations
Pizza Pazza
NoVe Kitchen and Bar Miami

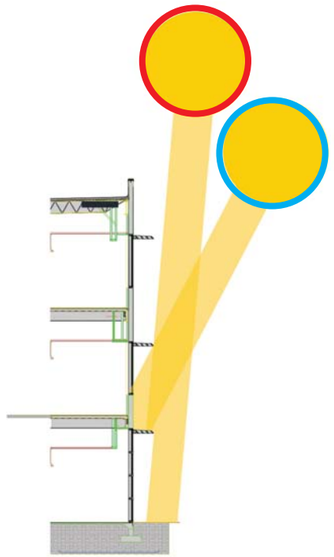
SITE ANALYSIS | light

SUMMER

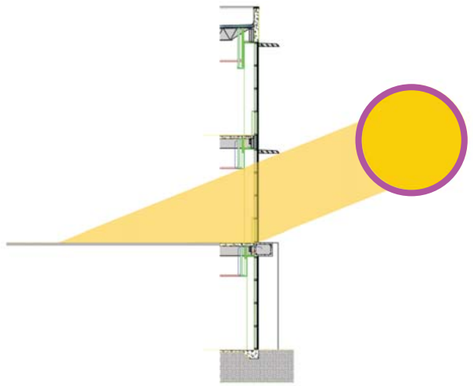


Boundary lines indicating sun penetration area, constrained by sunrise/ sunset times or by existing windows

Arbitrary times of day chosen for sun penetration analysis



SE Wall
Small windows



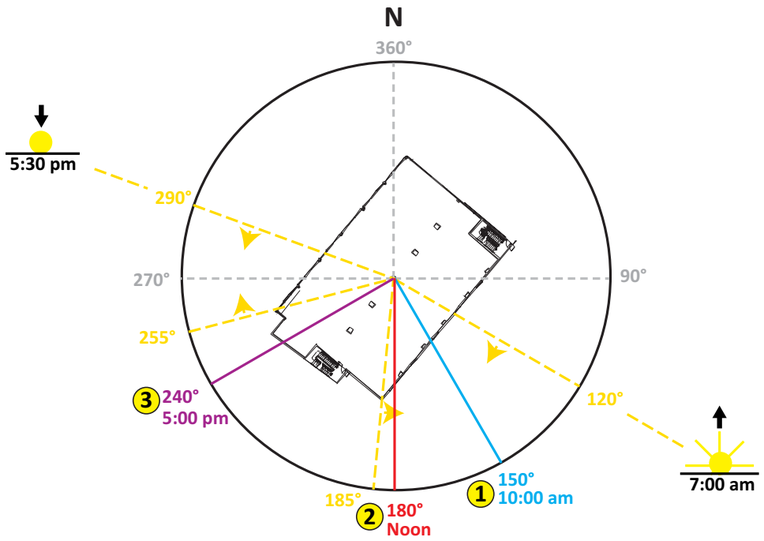
NW Wall
Curtain wall

1 **10:00 am**
Sun angle: 62.5°
Sun does not penetrate; sun shade and window sill height create barier against penetration at this time

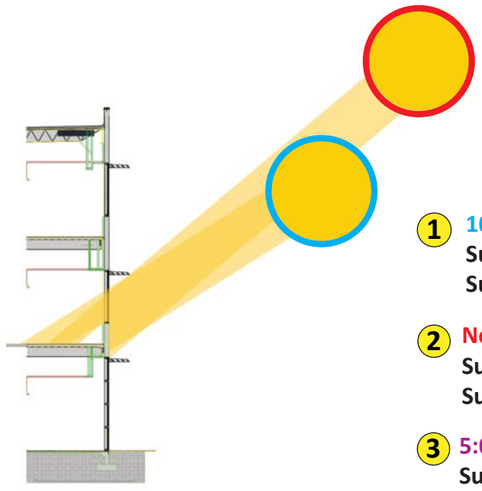
2 **Noon**
Sun angle: 85°
Sun does not penetrate; sun shade prevents penetration into building

3 **5:00 pm**
Sun angle: 22°
Sun penetration: 27’-10” into interior

WINTER



Analysis derived using stereographic sun path diagram for Zone 3 azimuth and altitude reference



SE Wall
Small windows

1 **10:00 am**
Sun angle: 32°
Sun penetration: 8’-2” into interior

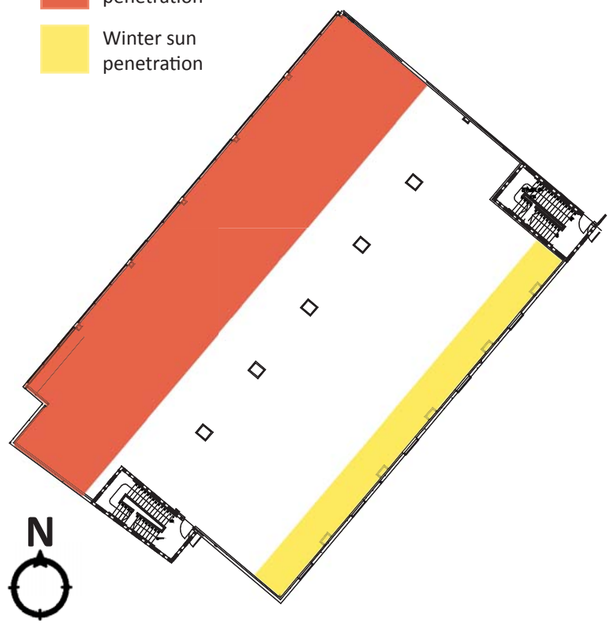
2 **Noon**
Sun angle: 40°
Sun penetration: 12’-4” into interior

3 **5:00 pm**
Sun penetration is not applicable; sun angle only affects SW wall with no windows

SUN PENETRATION

Summerr sun penetration

Winter sun penetration



SITE ANALYSIS | views

N

Because the building has only two walls with views - one is a curtain wall, and the other has five small windows lined up on each floor - there are really only two main views offered by the building-site relationship. The southeast-facing wall (**red** and **blue** views) offers views condos, such as the Opera Tower, the side of the Hilton Miami Downtown, and street traffic with minimal landscaping; these views can be seen through the small windows. The northwest-facing wall (**green** and **purple** views) offers views of retail, businesses, Biscayne Boulevard, and the parking lot designated for the building; these views can be seen through the curtain wall.

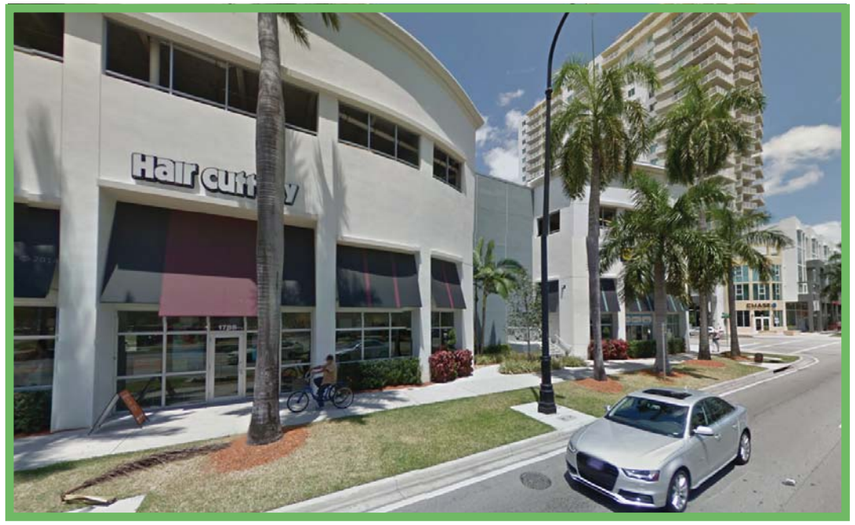
Clockwise from top left:

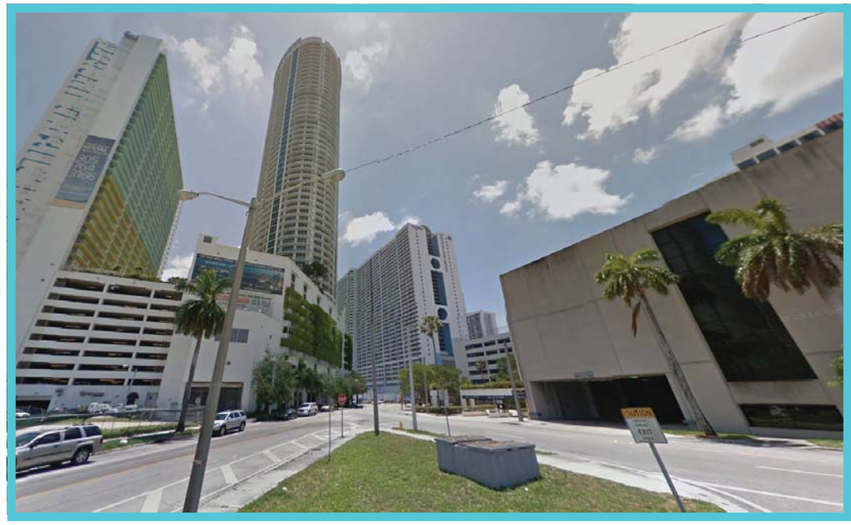
Biscayne Blvd & NE 18th St.
Publix
Chase Bank
1800 Biscayne Plaza
Sake Room
3 Chefs

NE 4th Ave.
Street parking
NoVe Kitchen and Bar
Opera Towers

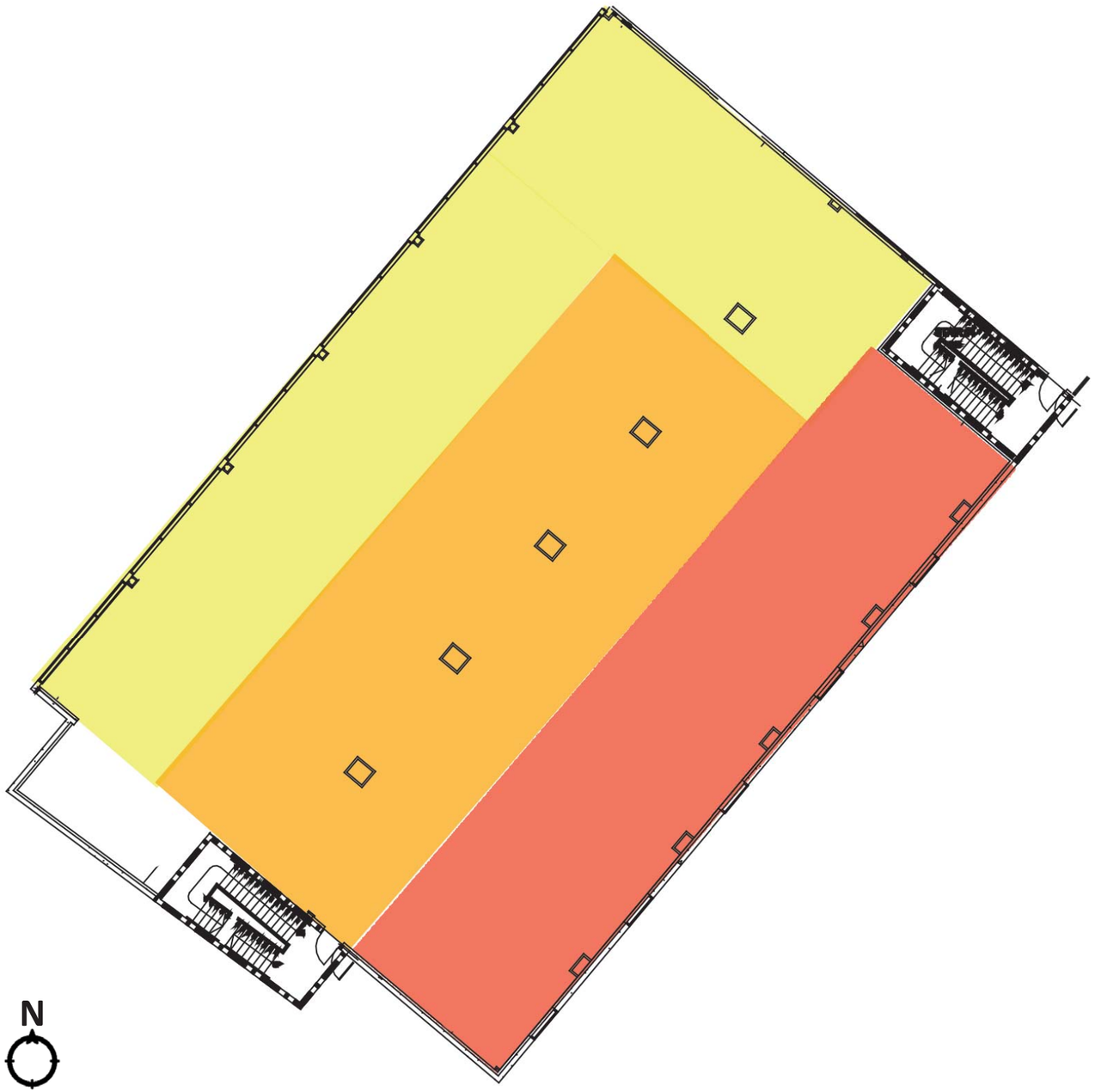
NE 4th Ave. & NE 17th Terrace
Opera Towers
Hilton Miami Downtown

Biscayne Blvd
Hair Cuttery
Publix





BUILDING ANALYSIS | public + private zones



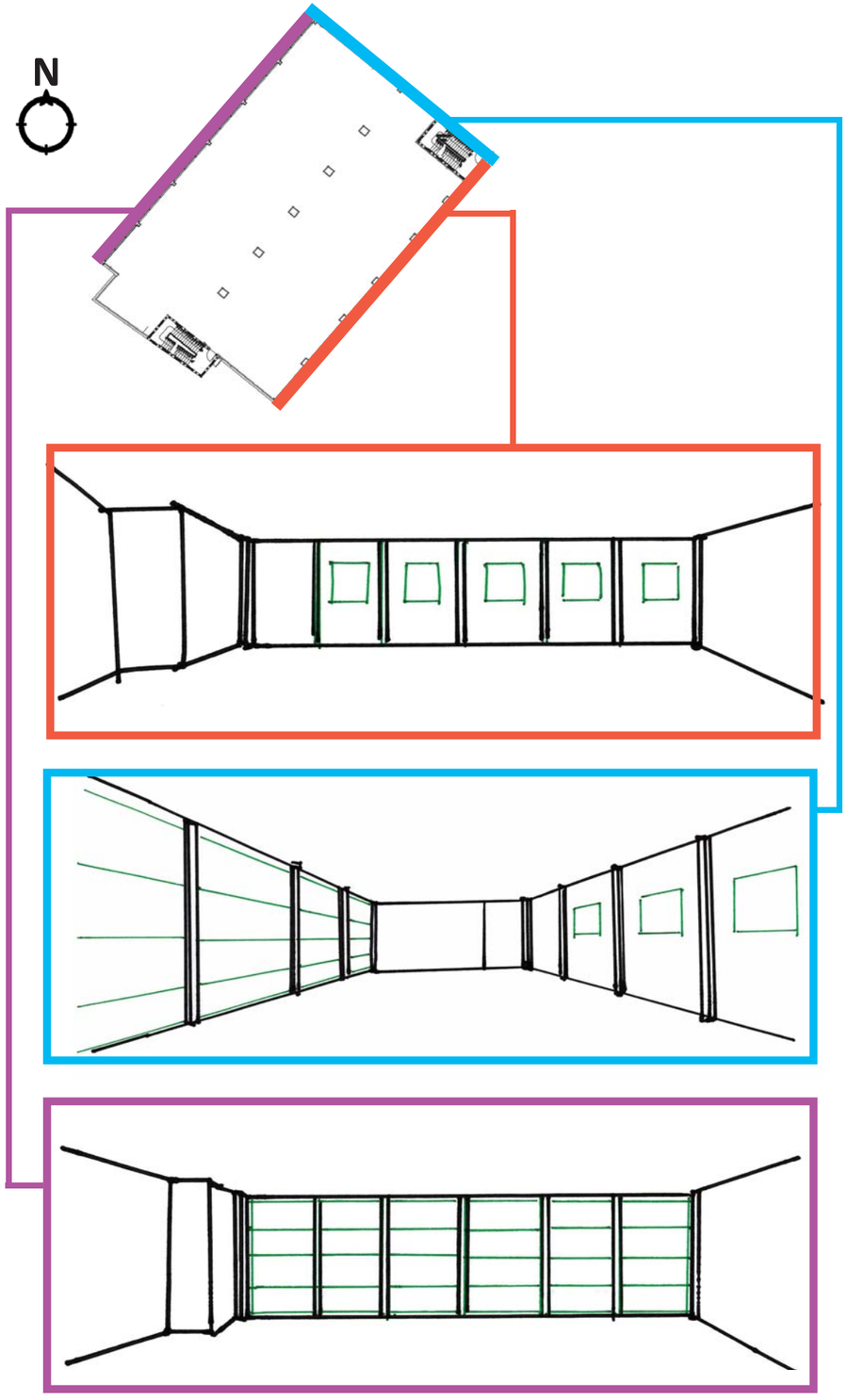
Public Zone

Semi-private Zone

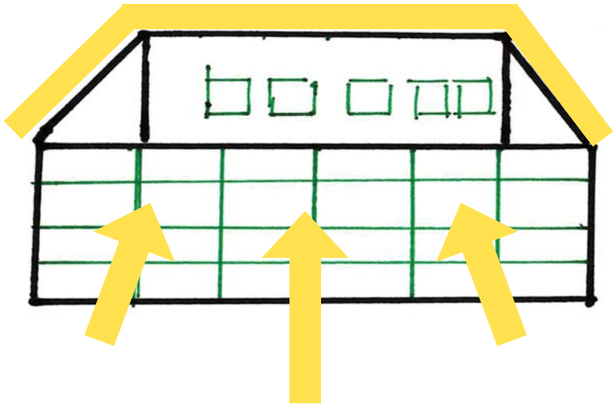
Private Zone

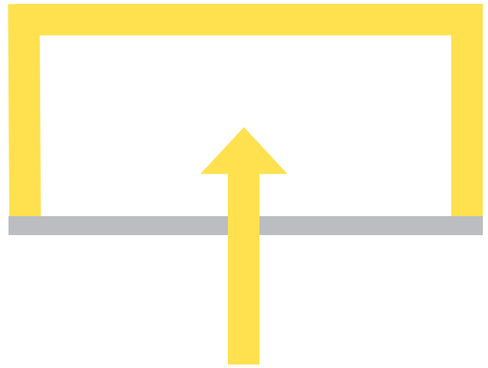
The building offers a simple, rectangular layout. The northwest curtain wall faces the entrance of the building (located near the nothwest corner), as well as the parking lot. This corner therefore dictates a natural public zone that surrounds it. The center area follows as the semi-private zone, before leading to the private zone, which is located along the southeast wall with the smaller windows.

BUILDING ANALYSIS | enclosure



Enclosure depiction viewing the southeast wall.



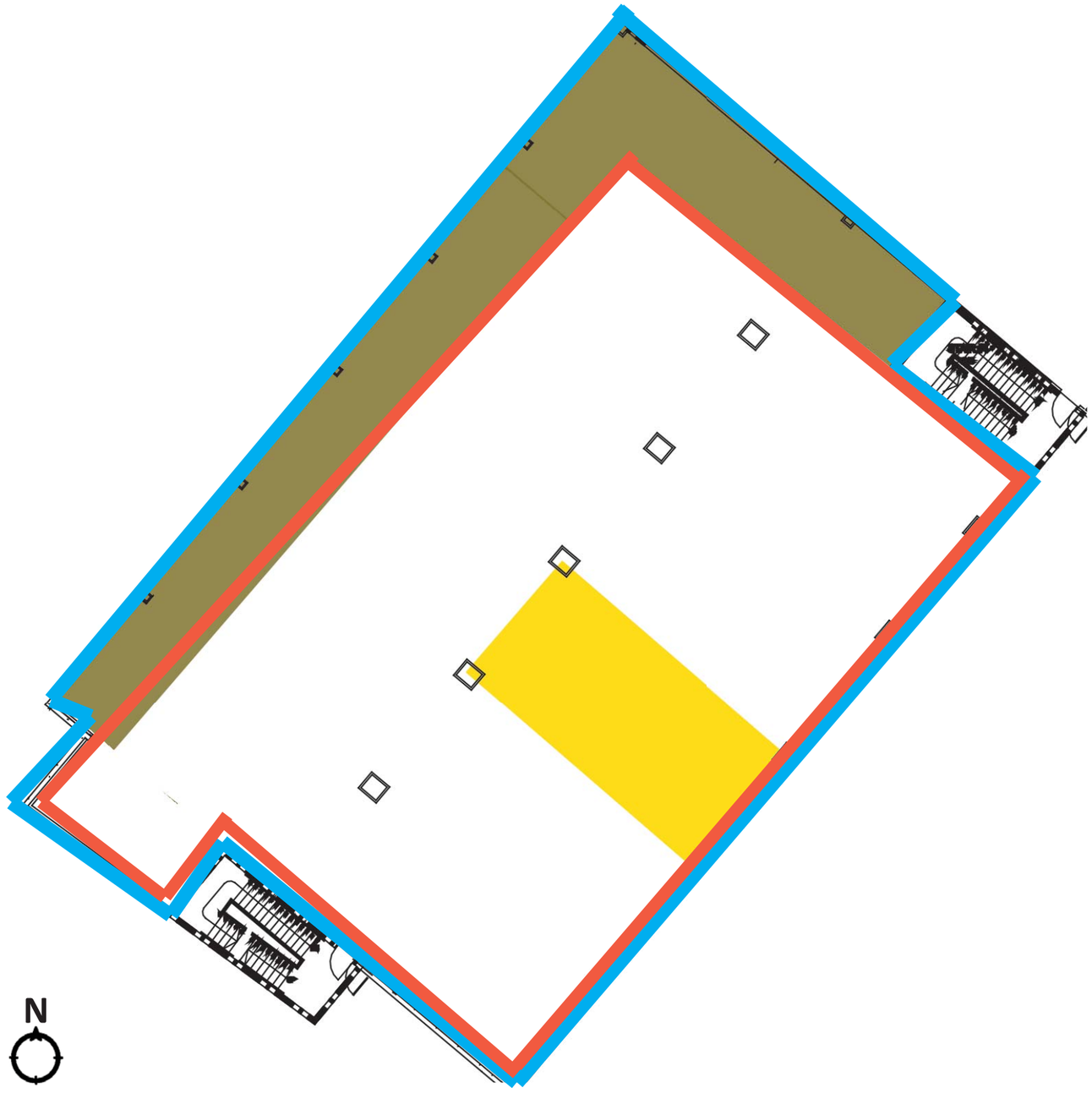


This plan provides an interesting feeling of enclosure with it's moderate tunnel effect. The diagrams above provide simple depictions of the relationship between the curtain wall and the surrounding walls. Because the southeast wall has smaller windows compared to the curtain wall, they seem almost insignificant in relation. The space therefore has a box-like quality with one side completely open (the curtain wall).

Enclosure depiction viewing the northeast wall. The curtain wall on the left keeps the space from feeling completely tunnel-like. It should also be noted that the small windows on the right seem almost insignificant when compared to the curtain wall.

Enclosure depiction viewing the northwest curtain wall. This view has a vast sense openness.

BUILDING ANALYSIS | spatial quality



Total Area (exc. stairwells)
approx. **9840 SF**

Main (semi-private + private zones)
approx. **7900 SF**

Main Circulation
approx. **1900 SF**

Typical Bay
approx. **800 SF**

Given that the building is relatively simple in it's rectangular shape, the only components that clearly defines the space are the bays created by the five column running down the center, and the curtain wall.

The **columns** create about twelve **bays** that are defined within the space, each bay being approximately 800 SF in area, which isn't a particularly large area. The bays of most importance seem to be the ones up against the southeast wall, where the private zone would be, as the curtain wall adds an important element to the bays opposite the former ones.

The **curtain wall** defines the space such that it dictates a public zone, and imply that the design possibilities are a little more limiting in that not much can be built up against it, for example.

Other areas of note are the **two stairwells**, one at the northeast corner and the other at the southwest corner. This will dictate circulation paths.

BUILDING ANALYSIS | structural system

Grid system

Openings

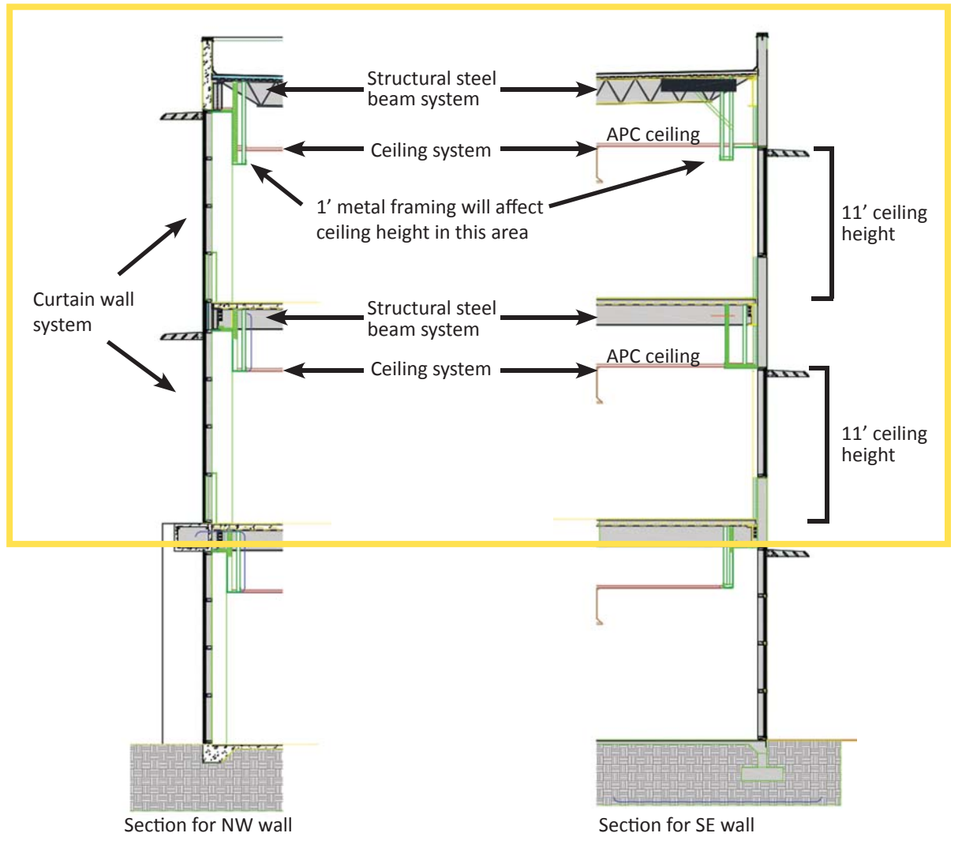
Columns

Stairwell

(Left) The grid system organizes the space in a straightforward manner, with all bays running perpendicular to the northwest (curtain wall) and southeast walls. The implications of this structural organization are that each area is oriented so that they naturally "face" the walls with the views; this makes for a simple understanding. The columns create about twelve rectangular bays that are defined within the space, each bay being approximately 800 SF in area. The size and orientation of the bays pose some natural suggestion for conference room, office, and reception orientation, to name a few.

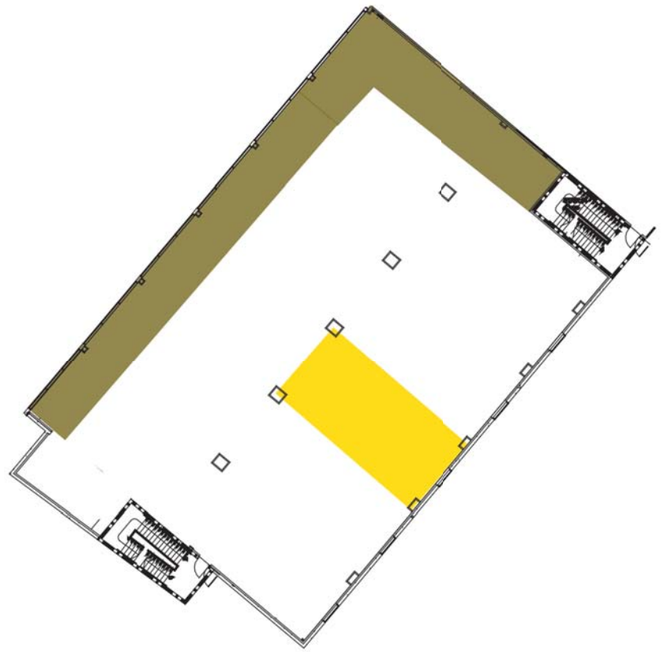
(Below) The space has a structural steel beam system, with a 3' plenum, and an ACP ceiling system. Floor to ceiling height is 11'; the wall section for the 3rd floor shows that a metal framing is extending 1' beyond the ceiling system, which is important to note during design planning.

Wall sections | 2nd & 3rd Floors to be used

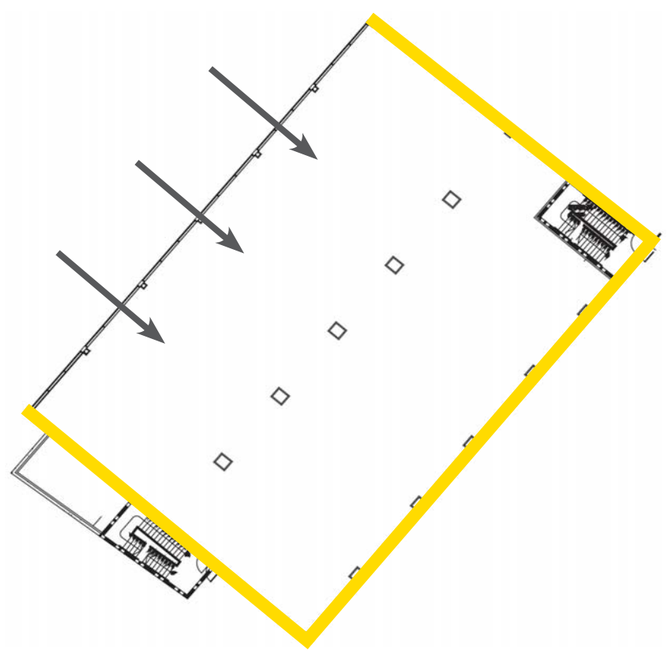


CONCLUSION | dominant issues

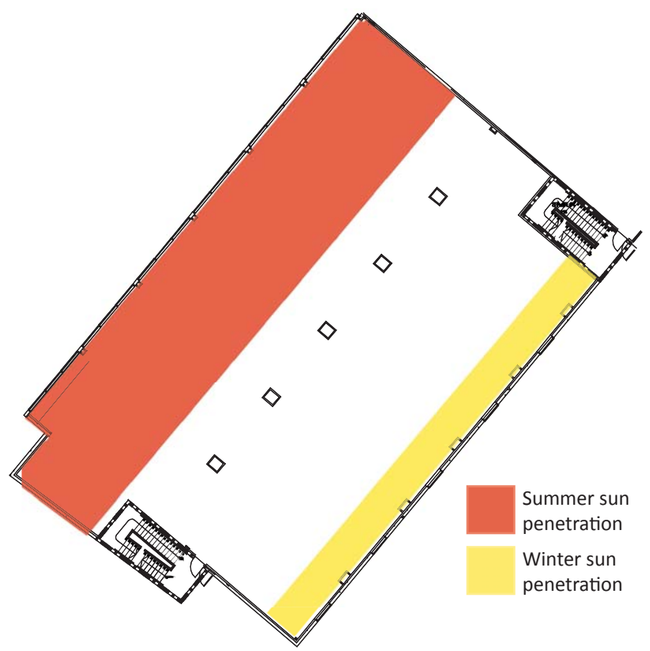
The following diagrams represent the three most dominant considerations to be aware of during the space planning and design process.



The 800 SF bays (yellow) created by the column grid system will contribute greatly to the design of the space in terms of boundary lines and orientation for specified areas.
The area parallel to the curtain wall and on the NE wall (grey) will also be considered, as these may be more public areas and may be used for circulation in some ways; the NE wall is attached to the rest of the [greater] building, and may be the main entry point, and the curtain wall faces the exterior entrance area and parking lot.



The relationship between the curtain wall and the surrounding walls create a box-like quality, with one side completely open, creating somewhat of a tunnel effect. Besides the light that will enter as a result, this building's space planning needs to take into account this distinct enclosure.



Although one of the longest walls of the building is a curtain wall, its position in relation to the sun path keeps it from having the winter sunlight entering during these months (the small windows will get a moderate amount of sun around 10:00 am in the winter. The summer sun, however, will penetrate approximately 27' through the curtain wall around 5:00 pm in the summer. This is a quality to consider with regard to heat gain and glare.