



walter  
p moore

# HGAC – Parking Workshop



# The history of parking design spans nearly 120 years

- In 1903 an electric car gets the first ever speeding ticket
- First structured parking: and its automated!

- Attendants parked vehicles
- Enclosed parking structures with short span construction

- Cheap land resulted in large surface parking lots

- Self Parking Introduced
- Open Structures w/ Long-Span Construction

- User and Efficiency became priorities
- 1990's Focus on Sustainability

- Level of Service
- Community
- Sustainability
- Adaptive Reuse
- Future Proofing
- Mobility Hubs



1900's



1920's



1930's - 1940's



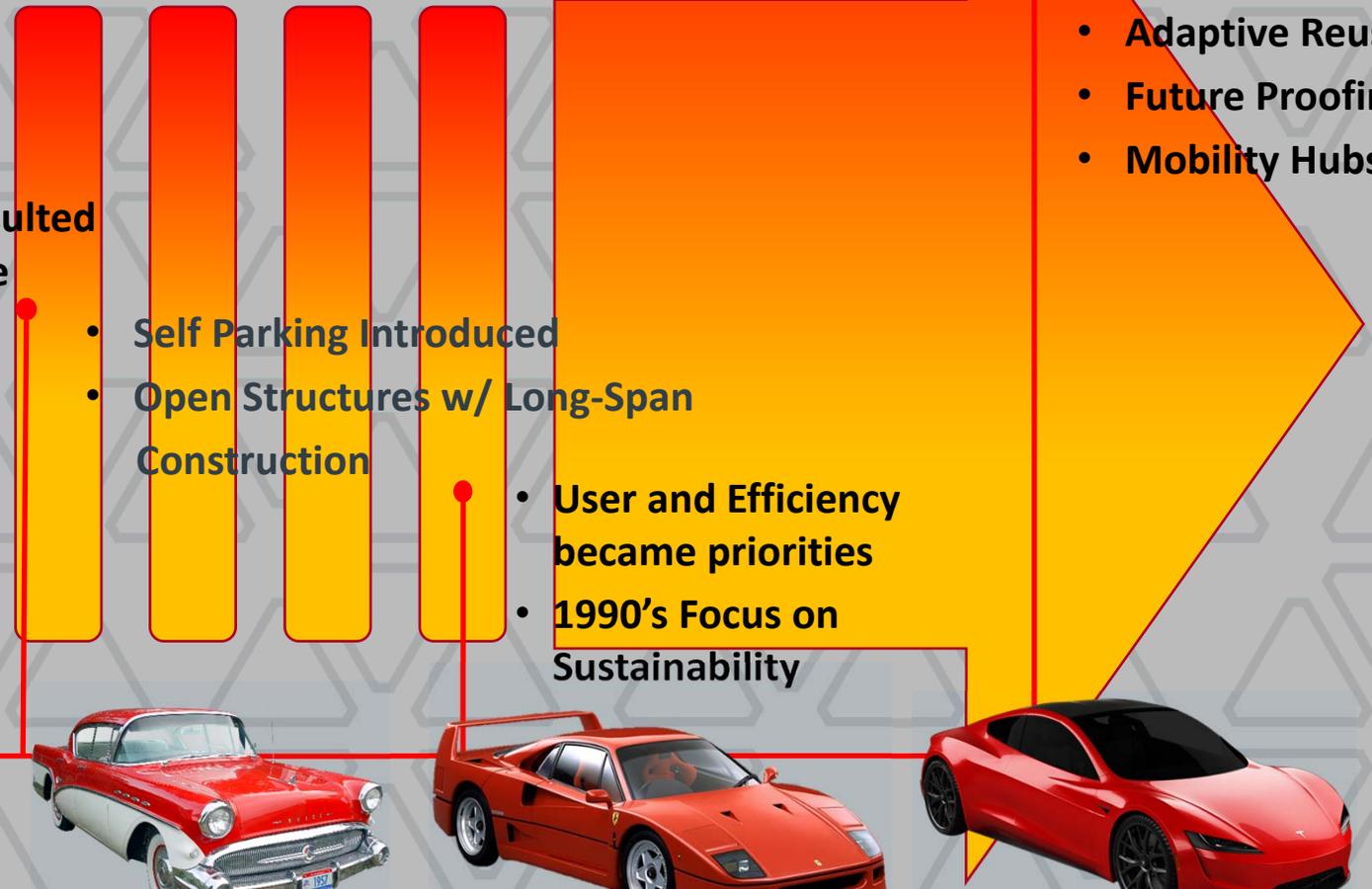
1950's



1960's - 2000's



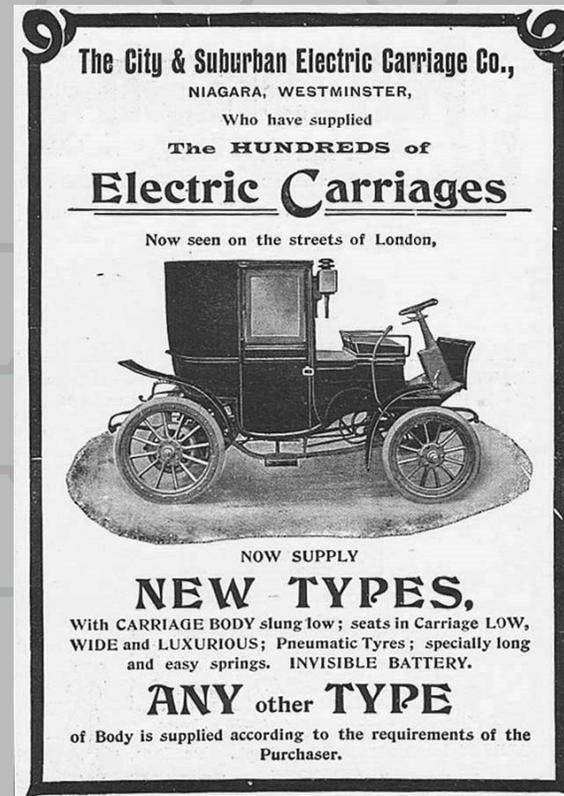
Present



# History of Parking Structure Design – 1900's

## City & Suburban Electric Carriage Company Parking Structure

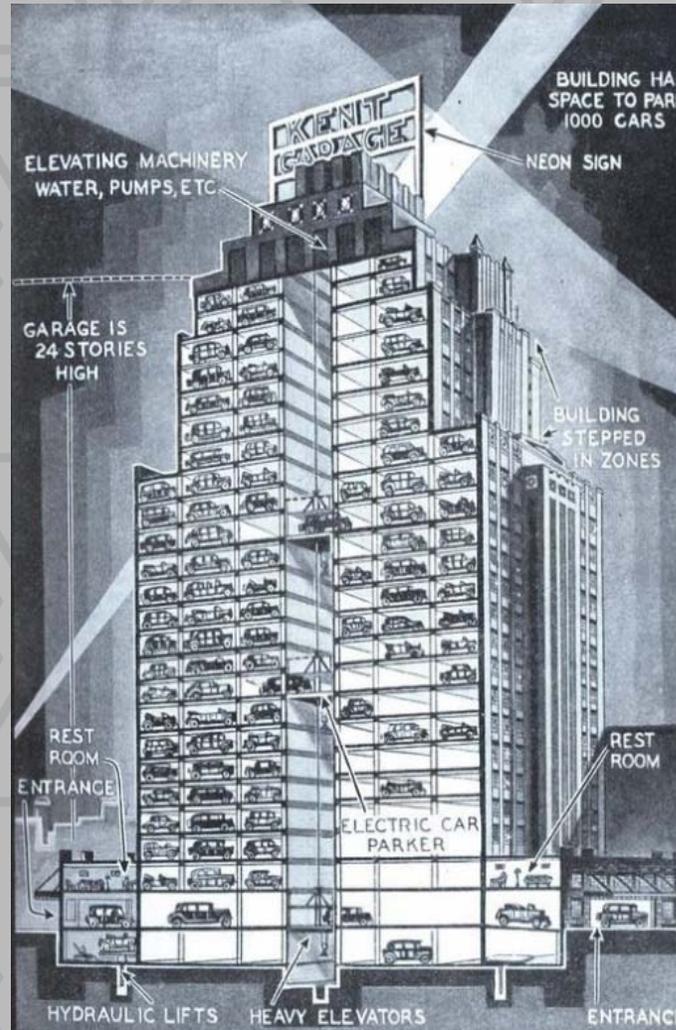
- Central London, England
- Year Built 1901
- 100 Spaces
- Seven Floors
- Electric elevator to move vehicles between floors



# History of Parking Structure Design – 1930's

## Hotel for Autos

- New York, New York
- Year Built 1930
- 25 Levels w/ Mechanical Lifts
- Jardine, Hill & Murdock Arch.
- Attendants Drive the Auto into the Elevator, Press a Button and the car is “whisked” Away
- Converted to a “Fireproof” Warehouse in 1943



# History of Parking Structure Design – 1950's

## Farmers Trading Co. Parking Structure

- Auckland, New Zealand
- Year Built 1956
- 550 Spaces, 400 sf per Space
- Flat Floors & Express Ramps
- Similar to New Parking Structures Design Concepts at Sport Venues or Las Vegas Casinos



# History of Parking Structure Design – 1960's thru 1980's

## Houston Center Garage No.1

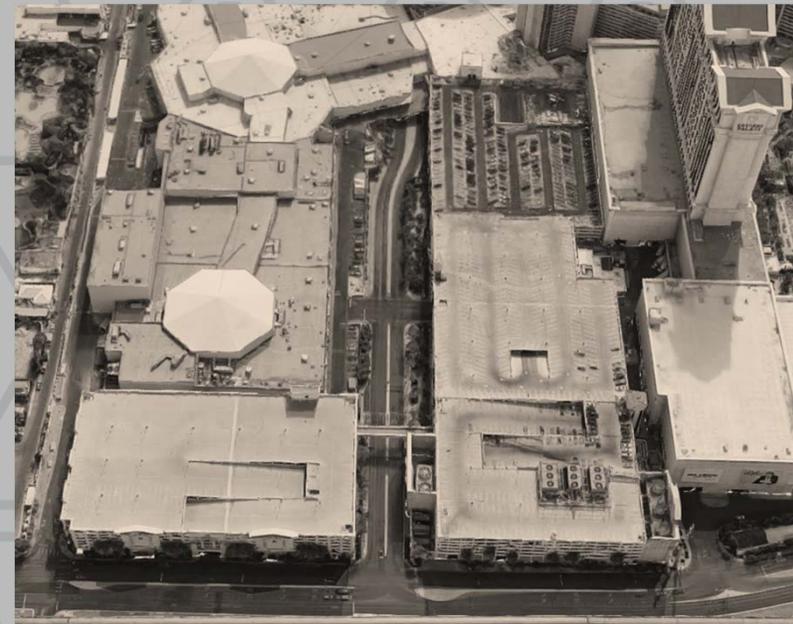
- Focus on Efficiency
- Utilitarian Design
- Office Building Garage



# History of Parking Structure Design – 1990's thru 2000's

## Caesars Palace Parking Structures

- Las Vegas, Nevada
- Year Built 1996
- Attention to the needs and characteristics of the “user”:  
Employee vs. Visitor
- The continuous express-ramp and high level-of-service
- Design efficiency
- Theming of Parking Structures



# Parking Structure Design – 2010's to Present

- Community
- Multi Use
- Integrated
- Sustainable
- Transit / Multi Modal
- Technology Enabled
- Adaptable

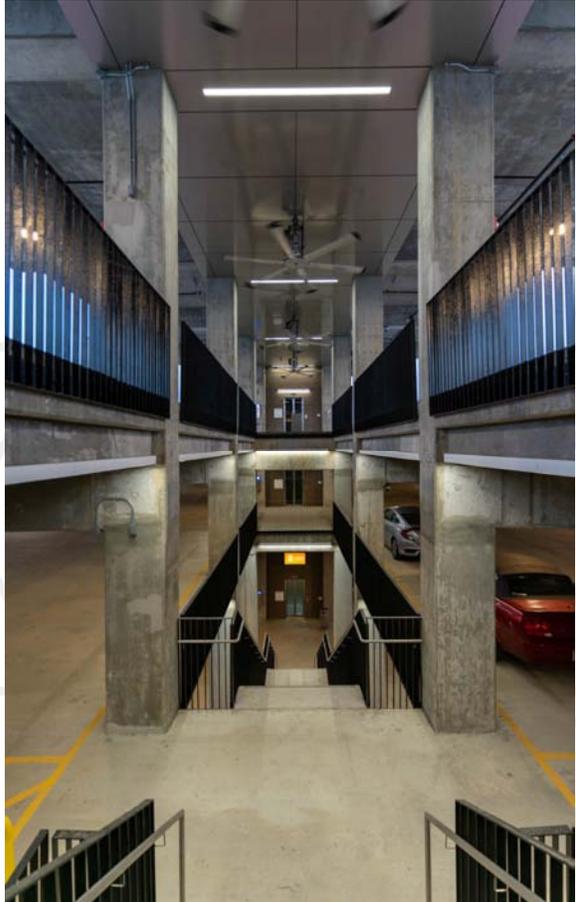


# Midtown Park and Garage

Owner: **Midtown RDA**

Designer: **Walter P Moore**





# Westpark Lower Uptown Transit Center

Developer: **Uptown TIRZ**  
PM/Consultant/Engineer: **Walter P Moore**  
Architect: **RdLR**





## Bank of America Tower & Garage

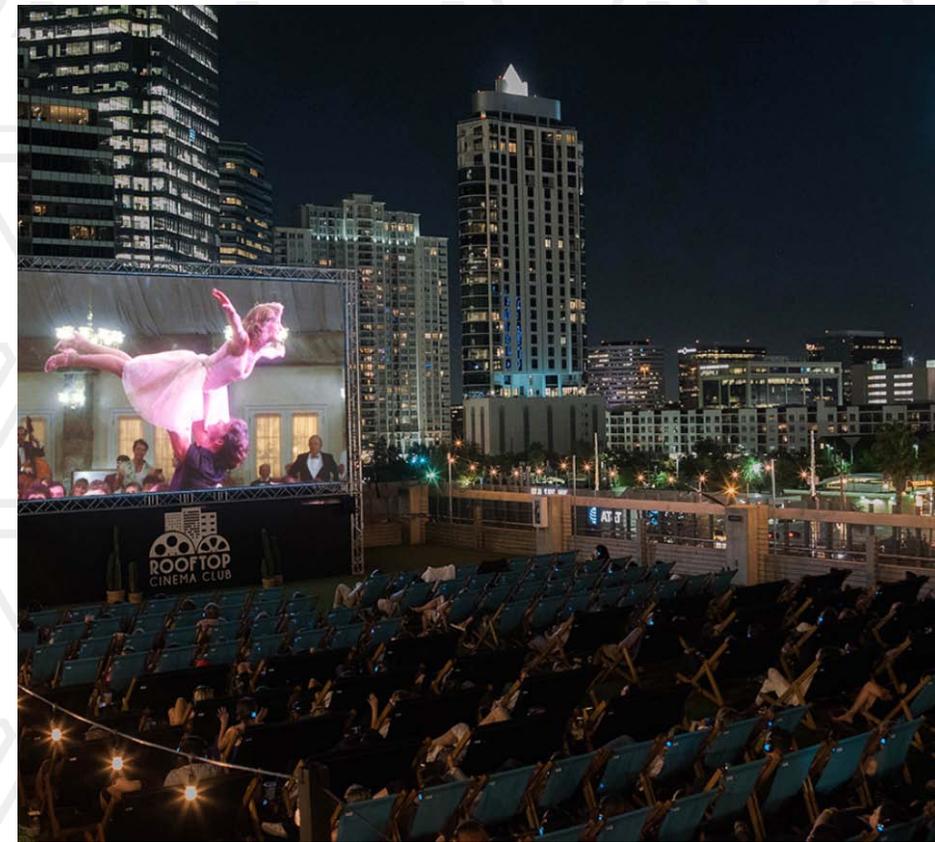
Developer: **Skanska**

Architect: **Gensler**

Consultant/Engineer:

**Walter P Moore**



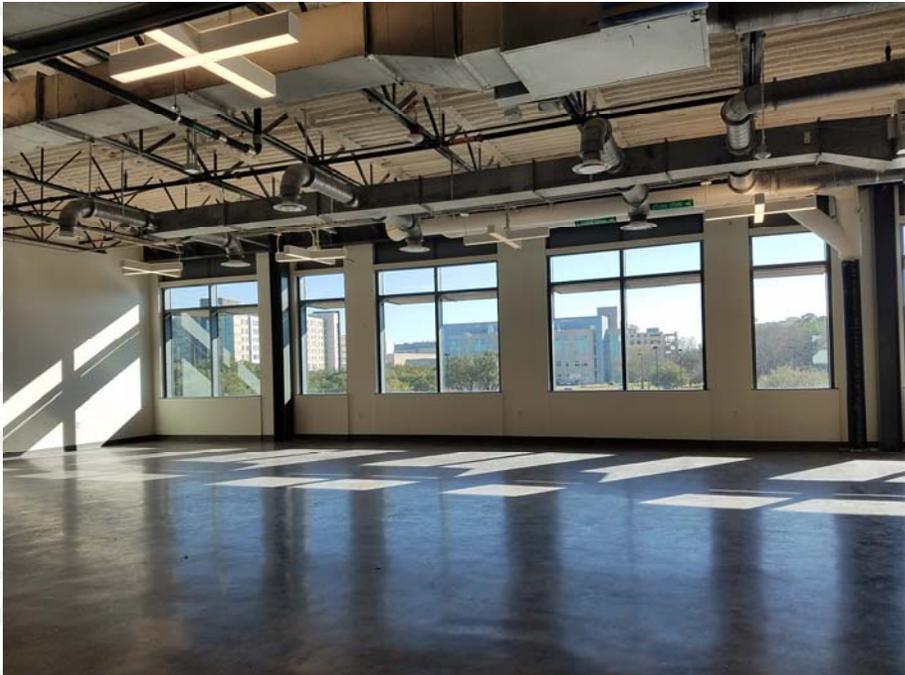
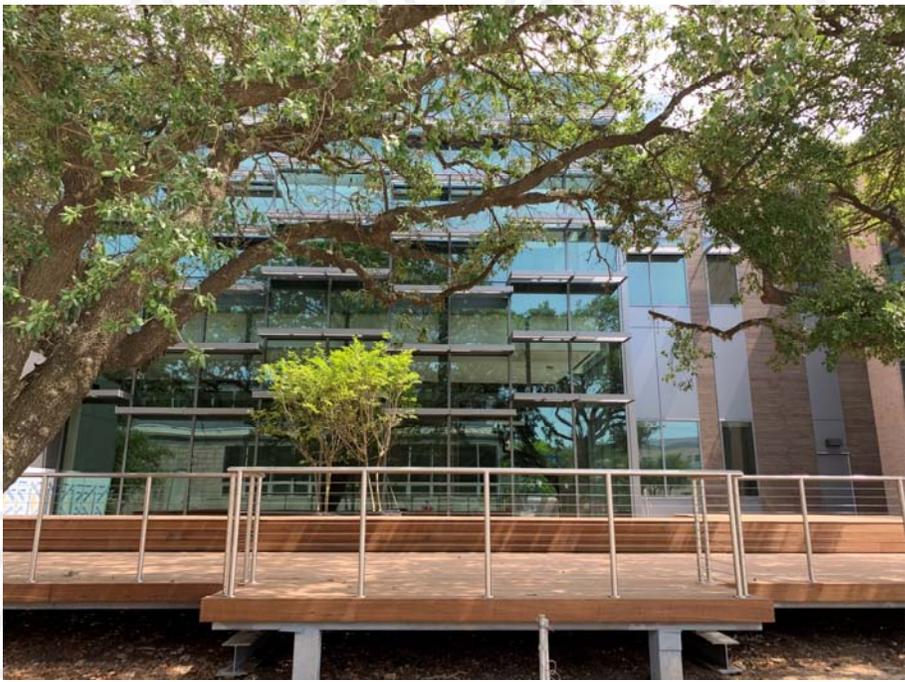


## BLVD Place

Architect: **AECOM**

Consultant/Engineer: **Walter P Moore**





**University of Houston G5**  
Architect: **Page**  
Consultant/Engineer: **Walter P Moore**



# Sustainable Trends



Parking Count & Guidance  
Increases Utilization  
Reduces Idling



Electric Vehicle  
Charging



Contactless  
Parking in DC



Bicycle Accommodations





# We are at a Crossroads

- Do we design for re-use?
- Do we design for autonomous vehicles?
- When will we need to decide?
- How do pandemics affect design?



# Adaptive Reuse



Housing



Mass  
Transit  
Station



Storage



Scooter  
Dock

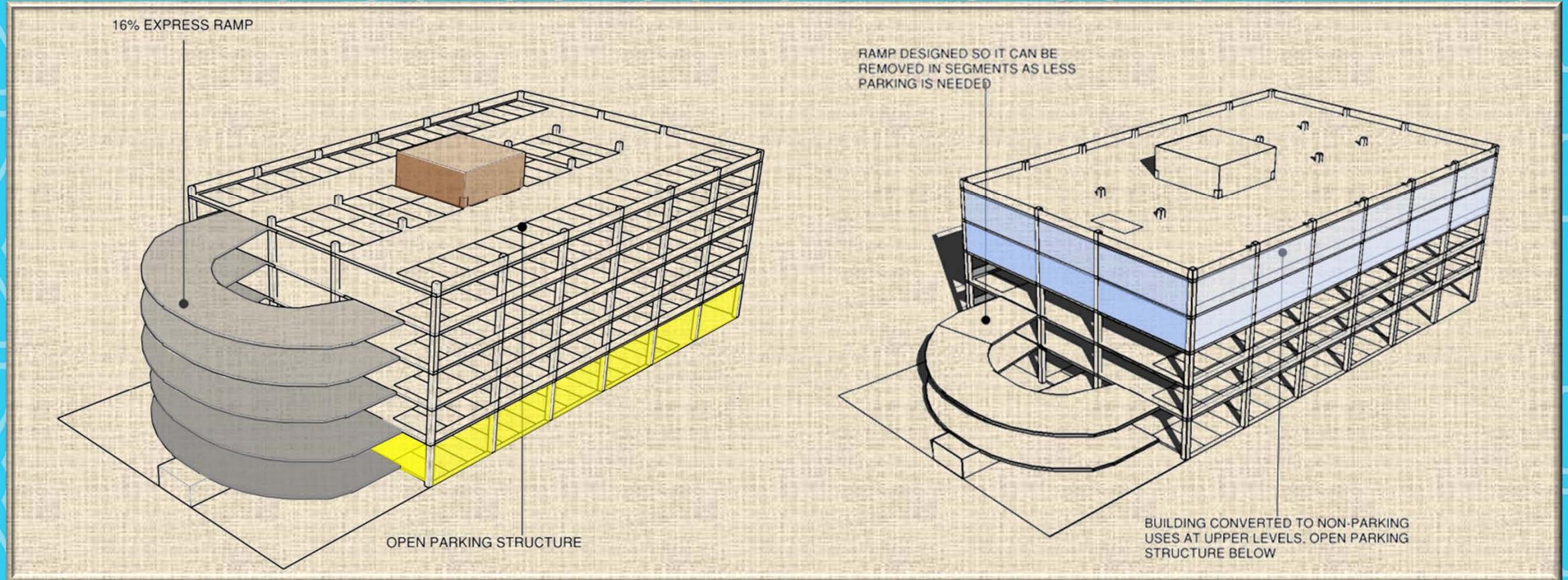


Bicycle  
Parking



Delivery  
Lockers

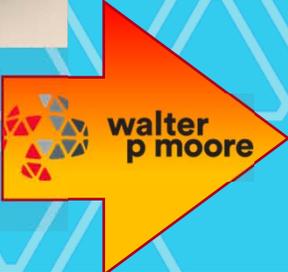
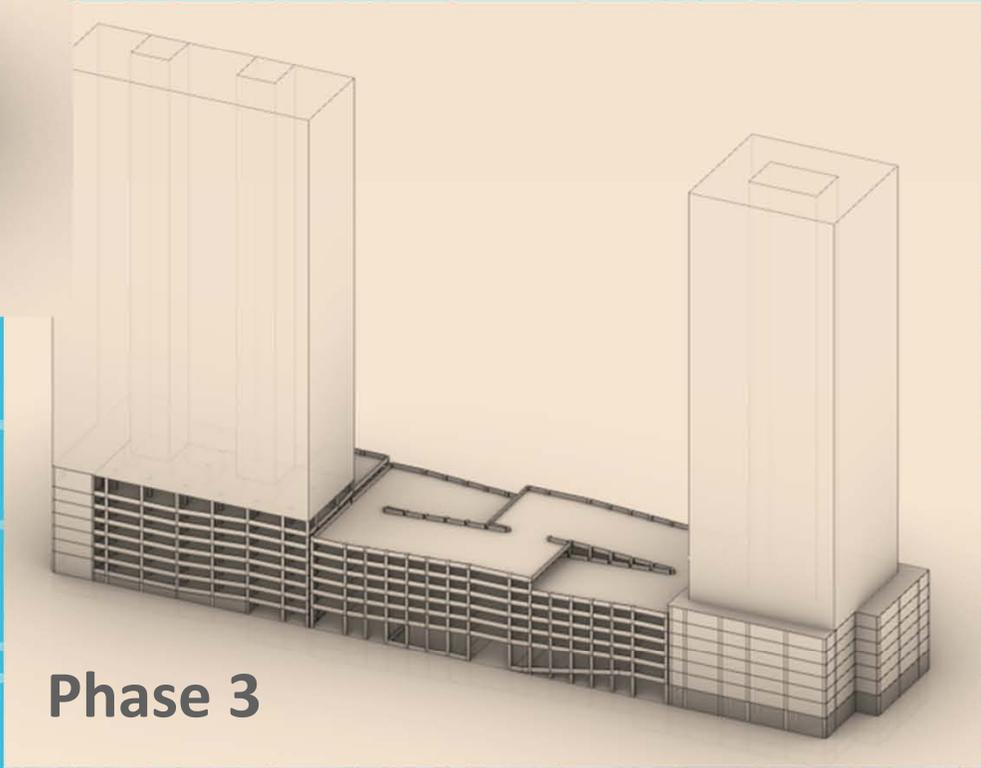
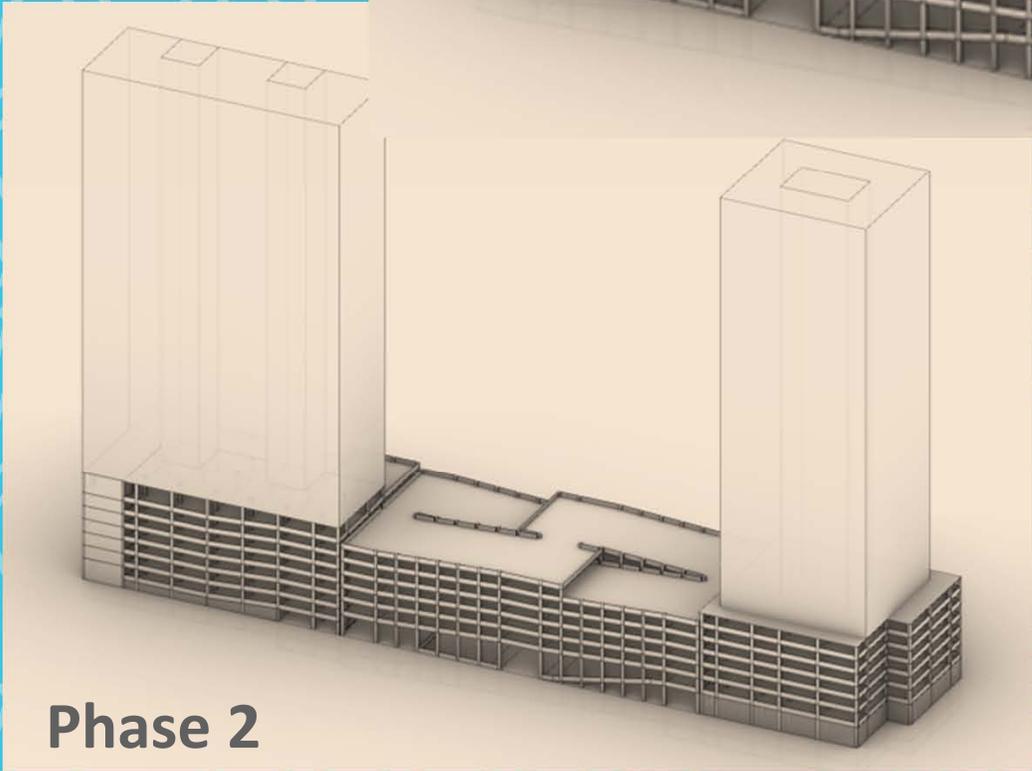
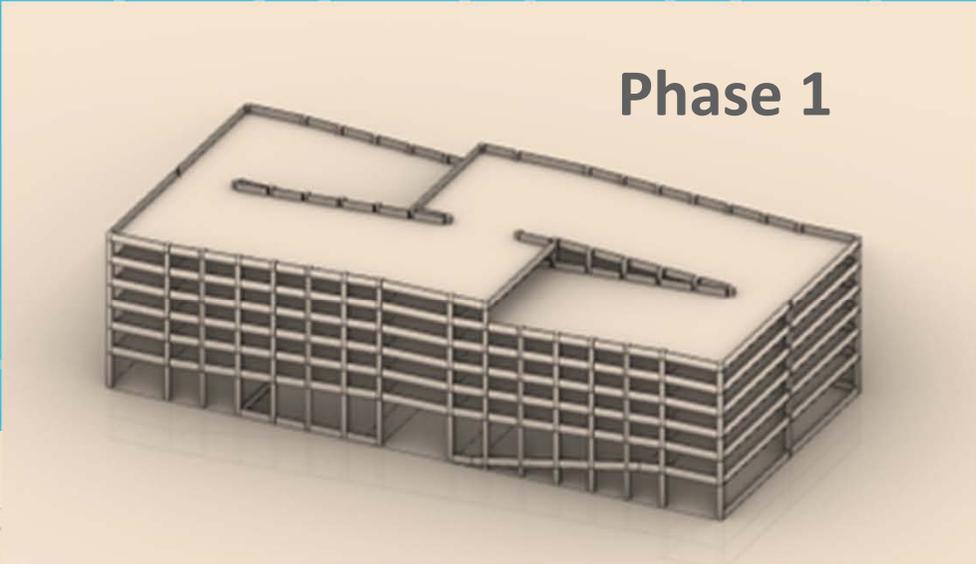
# Adaptive Reuse – Sunset Gower Project (2017)



- **17' Ground Level Clearance to Accommodate Trucks and Future Retail**
  - Centrally Located Core Desirable for Future Uses
- **Detached Ramping System that can be Disassembled from Top-Down**
  - Short Span Construction with Flat Floors



# Adaptive Reuse- White Plains Galleria- 2019



# Parking Structure Adaptive Reuse

## Usage Conversion Challenges:

- Floor height clearances
- Occupant loading
- Vibration, especially in long span construction
- Core placement
- Size of footprint / daylighting
- Sloping floors
- Ramping system
- Waterproofing
- Future electrical capacity
- Future MEP routing
- Future egress requirements
- Concrete slab contamination

**However....**



# Parking Structure Adaptive Reuse



**FIU Garage**  
Architect: **PGAL**  
Consultant/Engineer:  
**Walter P Moore**



**...It can be done!**

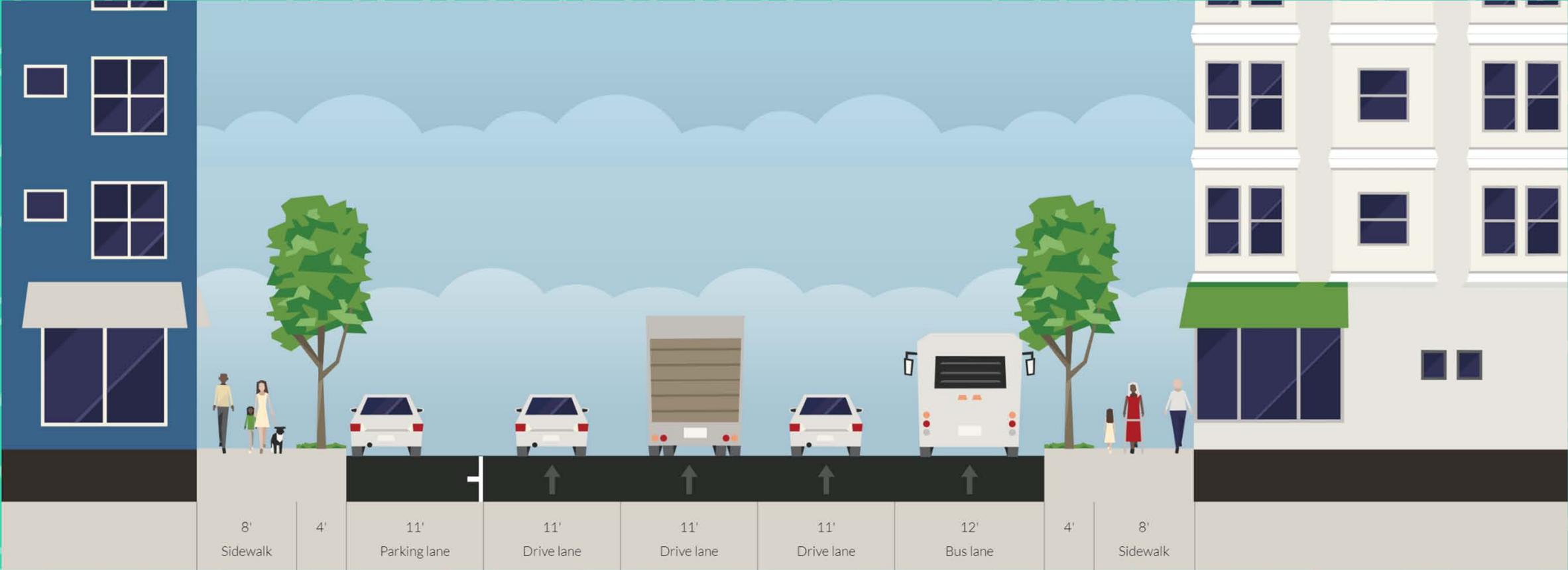


# Potential Design Impacts with Autonomous Vehicles

- Streets
- Buildings
- Parking Garage Design



# Urban Street - Existing



# Urban Street - Future



