“From street to building, the Zone of Exchange is where people interact with the built environment and each other. With impending shifts to mobility, this public realm is ripe for disruption and we will be discussing what is possible when three specialists consider an outcome that works for everyone.
Brent Mather
Design Principal

Ben Holland
Senior Associate

Paul de Konkoly Thege
Operations Manager

Gensler
Experimentation at the Interface of Urban Design and New Mobility

Environmental, Health, and Equity Implications for Cities

Urbanism Next
May 9th, 2019
Mobility of the Future

MOBILITY AS A SERVICE...

THAT’S ELECTRIC AND AUTONOMOUS...

IN CITIES DESIGNED TO SHAPE AND ENABLE IT.

RMI transforms global energy use to create a clean, prosperous, and secure low-carbon future.
Mobility-Oriented Development:
Moving toward cities designed to shape and enable new mobility

Source: Lyft, Nelson Nygaard
Pilots

Experimentation at the interface of mobility and urban design
Curb Access Pilot
Repurposing curbside parking for mobility service loading
Curb Access Pilot

*Tracking use via sensors*
Community Mobility Hub

Orienting auto-dominated space around people and mobility
Community Mobility Hub

Implementation: mobility
Community Mobility Hub

Implementation: placemaking
Community Mobility Hub

Survey methods, findings, lessons learned
Community Mobility Hub

*Walk trips: camera observation data example*
Community Mobility Hub

Visits and dwell-time: camera observation data example
Transforming global energy use to create a clean, prosperous, and secure low-carbon future

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Brent Mather
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260 million

CARS, MOTORCYCLES AND BUSES IN THE U.S.

The automobile as we know it – gasoline- and diesel-engine powered – will be largely obsolete by 2030.

Transportation & Logistics
Statista, 2015

Why Cars as We Know Them May Disappear by 2050
Fiscal Times, 2015
The average car in the U.S. is not utilized

95% of the time

5% utilization

“Today’s Cars Are Parked 95% of the Time”
Fortune, 2016
$2.15 TRILLION
Car Ownership

- $63 BILLION Public Transportation
- $36 BILLION Rental Cars
- $13 BILLION Taxis / Limousines / Black Cars

RIDESOURCING

2030 – 2035

Car Ownership
Public Transportation
Rental Cars
Taxis / Limousines / Black Cars

The driverless car will lend unprecedented mobility—including the youth, elderly, and blind—providing on-demand travel with a fraction of the cars currently on the road.

“The Road Ahead: Driverless Vehicles, Cities and Architecture”
Architectural Record
Driverless cars close driving distances, increasing road capacity.

The gains will be huge.

“The Road Ahead: Driverless Vehicles, Cities and Architecture”
Architectural Record
Roadways will become more pedestrian oriented as curbside parking spaces become obsolete and streets narrow.

“To the Future: What Do Driverless Cars Mean for Road Design?”
SEH
There’s an incredible opportunity to take our streets back.
The finest places in the world are cities with entire networks of car-free streets, known as pedestrian cities.

<table>
<thead>
<tr>
<th>10 MOST WALKABLE CITIES</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1. Copenhagen</td>
<td>6. Vancouver</td>
</tr>
</tbody>
</table>

“The 10 Most Walkable Cities in the World”
The Culture Trip, 2017
Copenhagen
CASE STUDY
1225 17th St, Denver
CASE STUDY: 1225 17TH STREET, DENVER

Today’s Typical City Block
Transition Away From Curbside Parking
CASE STUDY: 1225 17TH STREET, DENVER

Increased Pedestrian Connectivity
Curbside Parking to Drop-off
TODAY'S RIGHT OF WAY

13' SIDEWALK
8' PARKING
11' DRIVE LANE
11' DRIVE LANE
11' DRIVE LANE
8' PARKING
5' BIKE LANE
13' SIDEWALK

80' RIGHT OF WAY
THE ZONE OF EXCHANGE FUTURE

26' BLENDED CURBSIDE

5' BIKE LANE

9' DRIVE LANE

9' DRIVE LANE

5' BIKE LANE

26' BLENDED CURBSIDE

80' RIGHT OF WAY
THE ZONE OF EXCHANGE FUTURE

26' BLENDED CURBSIDE
10' TRANSIT
9' DRIVE LANE
9' DRIVE LANE
26' BLENDED CURBSIDE

80" RIGHT OF WAY
EVOLUTION TO THE ZONE OF EXCHANGE

Today
- Car-centric
- Engineered for through-put
- Trees and walkable streets are a low priority

The Future
- Activation-centric
- Engineered for the human experience
- Trees and walkable streets are equal priority
Future Zone of Exchange
What are the Impacts of the Autonomous Vehicles on Real Estate?
1. Floor leveling due to the existing slope toward built-in drains
2. Slab reinforcement for most future interventions

**Now**
**Above-grade**
**At-grade**
**Below-grade**

- Minimum 8'-2"
- 10' (Typical)
- 30' (Typical)

- Minimum 40 psf

**Occupy Classification**

- Fire Protection

**Energy Use Intensity (EUI)**

- Office: 148 kBtu/ft²

**Time Line**

**Location**

**Existing**

**Floor Height**

**Existing**

**Clear Span**

**Structural Load**

- Parking: 40 psf
- Office: 50-75 psf
- Library Stack: 125 psf

**Occupancy**

- Classify

**Building for the Future: The Impact of SCAVs on Real Estate and the Built Environment**

**BASIC PARAMETERS**

**Parking / Program Module**
**ADAPTIVE REUSE OF PARKING TYPOLOGIES**

**REVAMP EXISTING AMENITIES.**

- Fitness Center

**SUSTAINABLE MAKEOVER OF BUILDING SYSTEMS**

- Ice Thermal Storage

**RESHUFFLE & RE-PRIORITIZE REAL ESTATE WITHIN.**

- Relocation of MEP Equipment

**BRING IN NEW BUSINESSES.**

- Co-location Data Center

**BRING IN NEW BUSINESSES.**

- App-based Self-storage

**EXTEND ABOVE-GRADE PROGRAM TO BELOW-GRADE SPACES.**

- Below-Grade Atrium
CASE STUDY: 1225 17TH STREET, DENVER

Today’s Parking Paradigm = Through-Put & Barriers
Zone of Exchange = Urban Porosity
CASE STUDY: 1225 17TH STREET, DENVER

The New Arrival/Departure Paradigm
Future Zone of Exchange
“IF I HAD ASKED PEOPLE WHAT THEY WANTED, THEY WOULD HAVE SAID: FASTER HORSES...”

Henry Ford