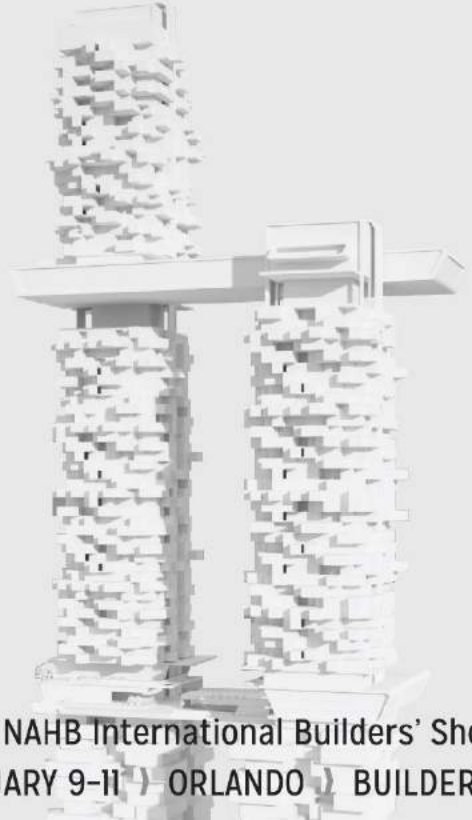
BUILDING KNOWLEDGE SESSION



W E L C O M E T O

PIER 2

BUILDING OF THE FUTURE

HUMPHREYS & PARTNERS
ARCHITECTS, L.P.

2018 NAHB International Builders' Show®
JANUARY 9–11 〉 ORLANDO 〉 BUILDERSSHOW.COM

NAHB CELEBRATING 75 YEARS | IBS

MANHATTAN IN 2024

LAND & CONSTRUCTION COST

AFFORDABILITY

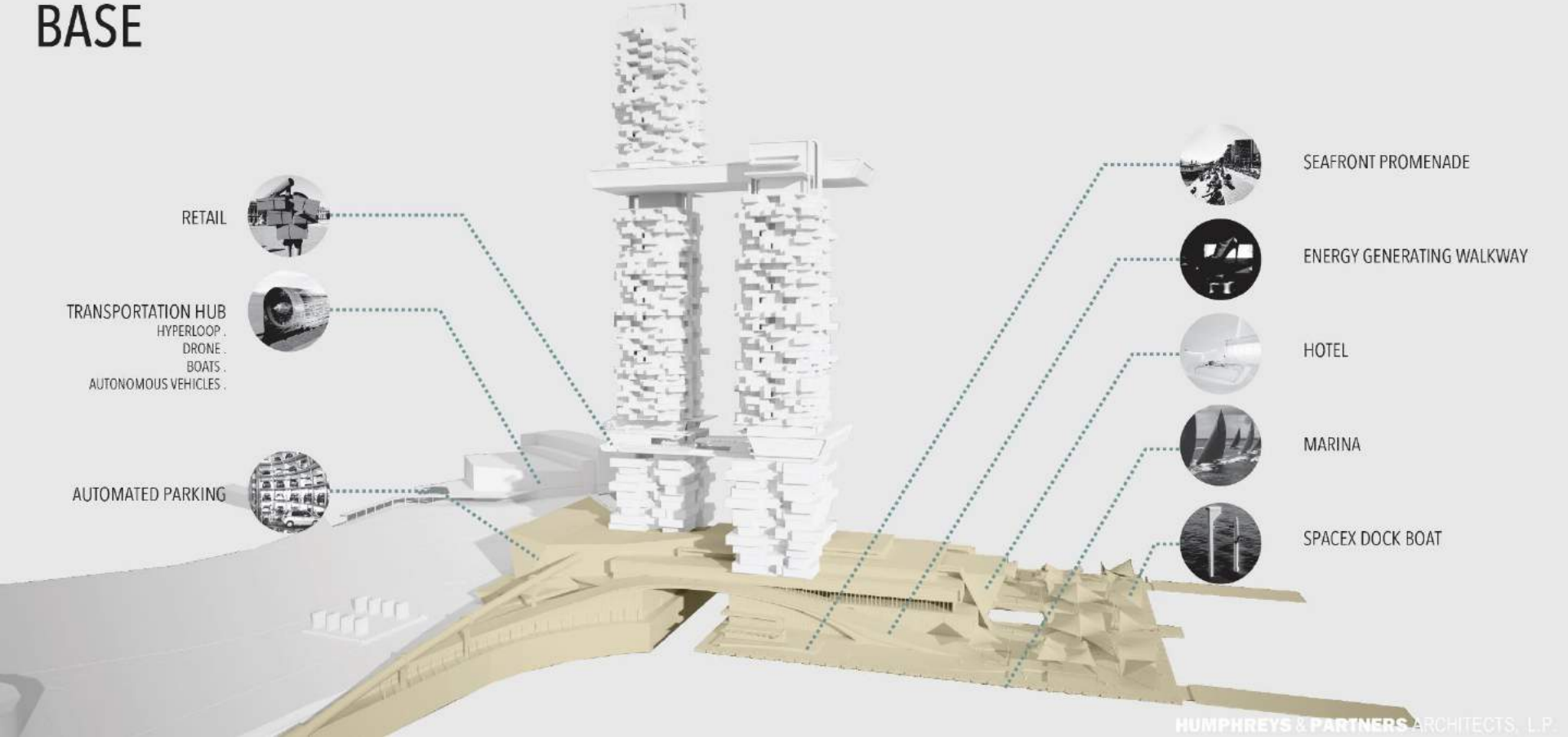
SUSTENTABILITY

POLUTION

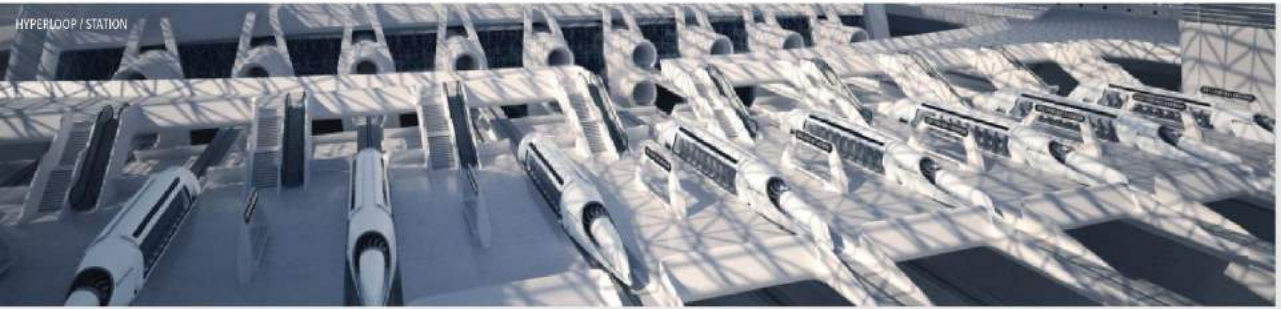
OVERPOPULATION

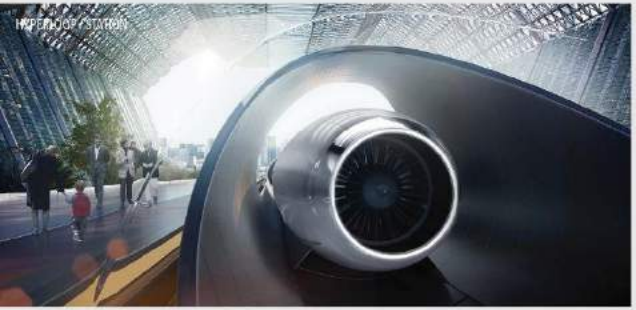
TRANSPORTATION

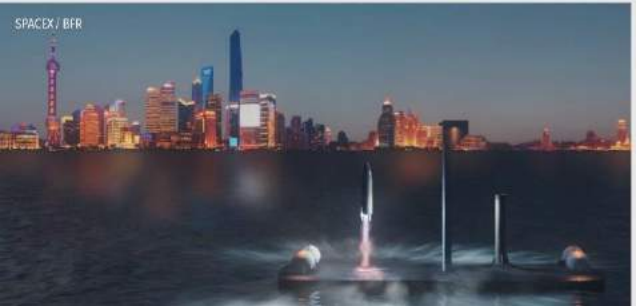
BASE


RETAIL
TRANSPORTATION HUB
HYPERLOOP .
DRONE .
BOATS .
AUTONOMOUS VEHICLES .
AUTOMATED PARKING
SEAFRONT PROMENADE
ENERGY GENERATING WALKWAY
HOTEL
MARINA
SPACEX DOCK BOAT

HUMPHREYS & **PARTNERS** ARCHITECTS L.P.







BASE / MEANS OF TRANSPORTATION

TRANSPORTATION

- HYPERLOOP
  - System of tubes through which a pod travels free of air resistance and friction
  - Average speed of 600 mph
  - Goal of being in service by 2021
- SPACE X
  - NYC to Shanghai in 39 minutes
  - Elon Musk, imagines carrying people from any part of the world in less than 30 minutes.

BASE / MEANS OF TRANSPORTATION

AUTONOMOUS VEHICLES

- CAR
  - Tesla charger: 30 min charging your vehicle
  - Prevents 90% of car accidents
  - Increases road capacity by 273%
- BUS
  - 100% autonomous
  - 15 passengers
  - 25 km/h operating speed
  - 9 hours autonomy

BASE / MEANS OF TRANSPORTATION

BIKE SERVICES

- AUTOMATED BIKE PARKING
  - 24.9 bikes/m2
  - 13 sec average retrieval time
- SOLAR BIKE PATH
  - Generates 10 hours of light
  - No additional power supply
- BIKE PATH GENERATES ENERGY
  - Solar powered
  - 3.000 kw/h in 250 feet, enough to power a home for a year
- BIKE WASHING MACHINE
  - Cleans bikes quickly
  - Eco-friendly detergent

BASE / PROMENADE

WALKWAY

The correct use of technologies and social changes will make the cities performance more efficient. In that direction the promenade will include a Pavegen and EnGo energy generating walkway, which will produce energy from people's movements.

- Tiles 100% recycled
- 5 Watts per footstep
- 1 footstep = 30 sec LED street lamp

THE TILE CONSISTS OF THREE COMPONENTS

AN ELECTRO-MAGNETIC GENERATOR

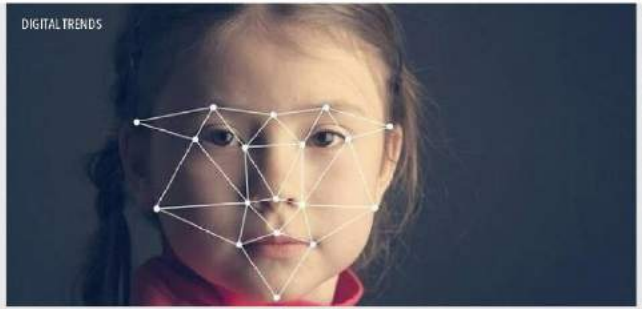
A SINGLE TRIANGULAR COMPOSITE TILE

AND YOU

BASE / PROMENADE

ENTERTAINMENT

Facial recognition in all public spaces, 5G network, real time connection, LED lightining, food, music and people watching.


DIGITAL TRENDS

PH: ULYSSE LEMERISE / MONTREAL

ROOFTOP MOVIE NIGHTS AMSTERDAM

CINEPOLIS / BARCO ESCAPE

MUSIC VENUES IN AUSTIN

EL KIOSKO / MAHOU SAN MIGUEL

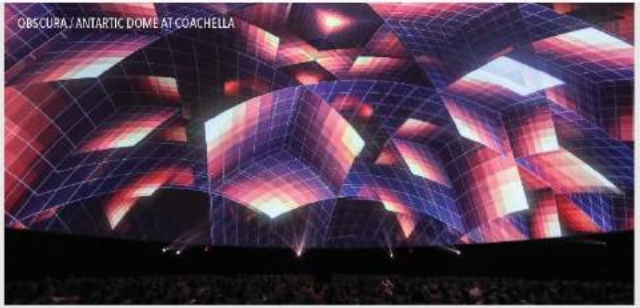
BASE / PROMENADE

ENTERTAINMENT

- OBSCURA
  - Immersive experience
  - Inspire audiences

"[this] art takes us out of ourselves, brings us together, reenacts and reinvigorates our public lives, and, what is not unimportant, lets us have fun together."

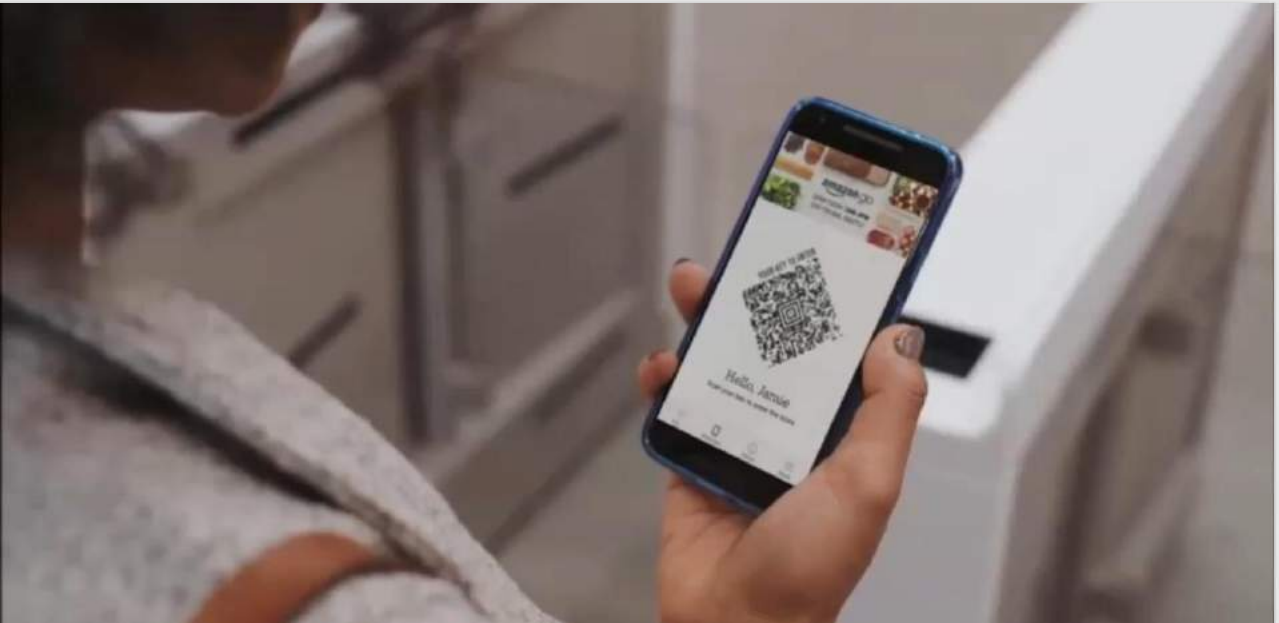
Betsky



BASE / RETAIL

SMART SHOPPING

- Shoppers make 51% of their purchases online
- 44% of orders placed on smartphones
- E-commerce is growing 23% year over year
- In 2022 e-commerce sales are going to be $640.000 million US
- Apple pay



BASE / RETAIL

AMAZON GO

Amazon Go is a new kind of store featuring the world's most advanced shopping technology.
No lines, no checkout just grab and go!

- First store in Seattle
- Planned to open 22.000 stores in 10 years
- Walmart & Kroger opening stores

PLATFORMS

LOWER LEVEL PLATFORM

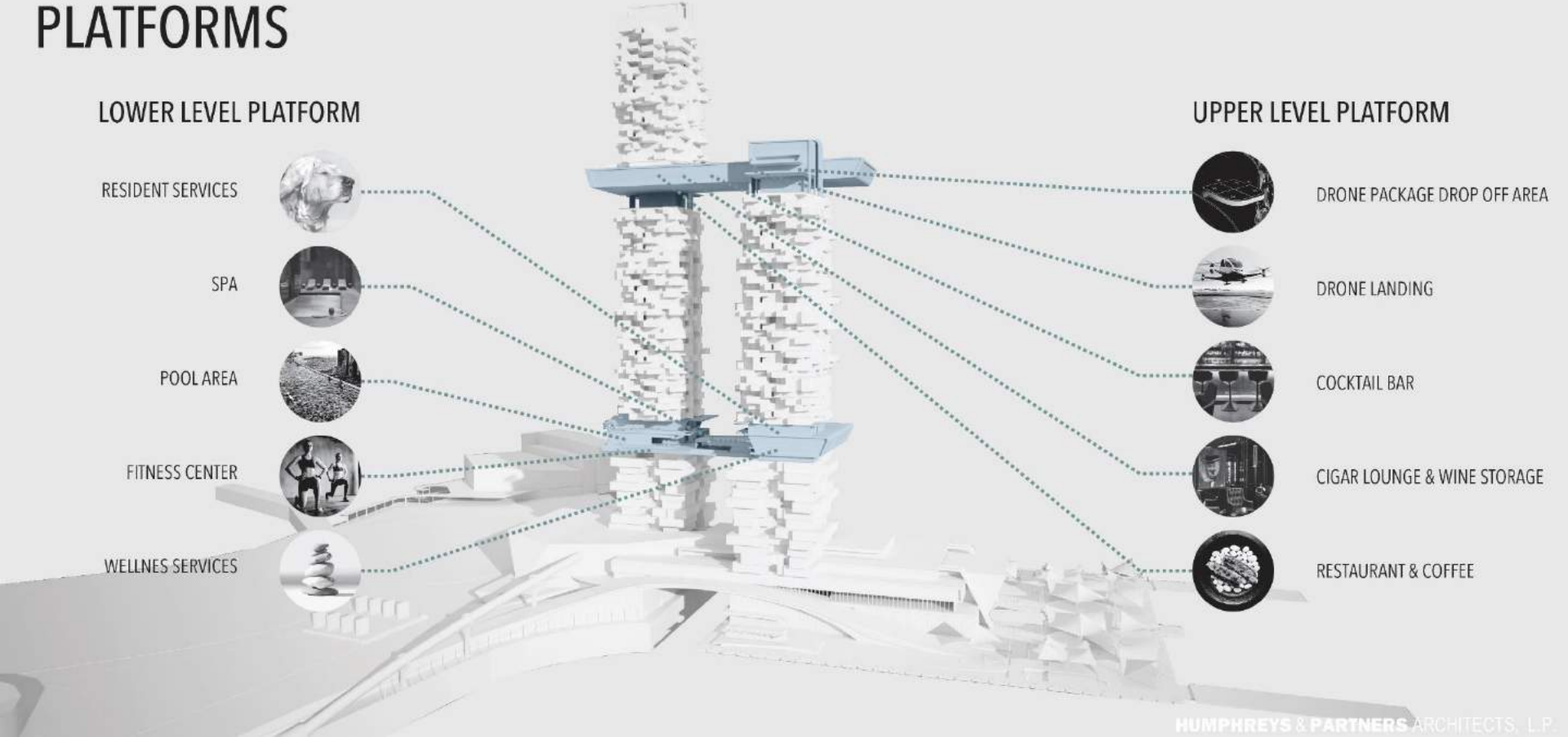
RESIDENT SERVICES

SPA

POOL AREA

FITNESS CENTER

WELLNES SERVICES



UPPER LEVEL PLATFORM

DRONE PACKAGE DROP OFF AREA

DRONE LANDING

COCKTAIL BAR

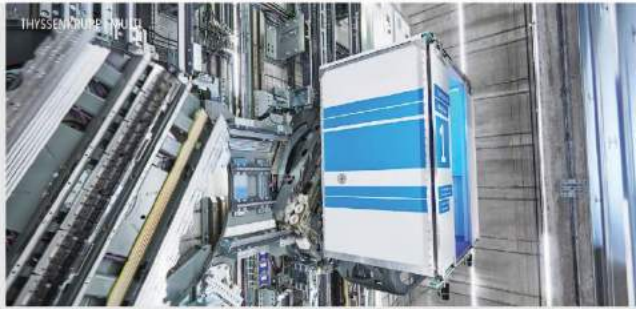
CIGAR LOUNGE & WINE STORAGE

RESTAURANT & COFFEE

HUMPHREYS & PARTNERS ARCHITECTS L.P.

PLATFORM'S CONNECTION

HORIZONTAL ELEVATORS



- DIRECTION
  - Vertical and horizontal
- FOOT PRINT
  - 50% less
- CAPACITY
  - 50% more
- WEIGHT
  - 50% less compared to standard technologies
- Allows for new building configurations

LOWER LEVEL PLATFORM

LEASING

- VIRTUAL REALITY
  - Selling projects yet to built
  - Eliminates need for model units
  - Easy finish out showcase
  - 24/7 robot assistance

LOWER LEVEL PLATFORM

AMENITIES

- Cocktail bar
- Private dining room
- Cigar lounge
- Poker room
- Kids playroom
- Lounge fire pit
- Wellness center
- Fitness
- Package holding.

LOWER LEVEL PLATFORM

INDOOR FITNESS CENTER

- Rock climbing
- Electro-magnetic resistance bikes
- Immersive fitness
- Hydro training
- Spa
- Cryotherapy

LOWER LEVEL PLATFORM

RESIDENT SERVICES

- Drone delivery
- Hot & cold storage
- Package mail box
- Dry cleaning robots including folding clothes and laudry drop off boxes

LOWER LEVEL PLATFORM

PET SERVICES

- 40% of tenants have a pet
- 35% dog owners hire a sitter
- 40% request 3 minutes walks
- 25% spend money on behavior modification training
- 40% invest in obedience training
- Grooming services
- Dog parks
- Pet wash

UPPER LEVEL
PLATFORM
HUMPHREYS & PARTNERS ARCHITECTS, L.P.

UPPER LEVEL PLATFORM

RESTAURANT & COFFEE

A Tokyo company is working on a restaurant without human contact, where the customer can see the menu, order, eat and pay with no human interaction.

UPPER LEVEL PLATFORM

DELIVERY

- UAV DELIVERY (UNMANNED AERIAL VEHICLE)
  - 60% reduction in delivery costs vs. land and sea
  - Reduces time up to 20 min
  - 50 miles per hour
  - 5 pounds packages
    - Improves road safety
- GROUND-BASED DELIVERY ROBOT
  - Reduces gas-powered vehicle traffic
  - 20 pounds of cargo
  - Trips should take 5-30 min
  - Carry items within 2 mile radius

HOVER TAXI

FAST COMPANY

Uber's Flying Taxis Will First Take To The Skies In Dallas-Fort Worth And Dubai

The ride-hailing giant exclusively shared details of its ambitious program to start testing sky cabs by 2020 and putting them into service as soon as 2023.

Dubai will be one of the cities for Uber's pilot tests. (Image courtesy of Uber)

CNBC

NASA is working with Uber on its flying taxi project

- Uber partnered with NASA on its flying taxi project called Uber Elevate
- Uber will be working with NASA to figure out traffic management for flying cars
- Uber also says that in terms of its trial, the flying taxi in Los Angeles, it will be Dallas and Dallas Fort Worth in 2020

THE GUARDIAN

Uber signs contract with Nasa to develop flying taxi software

Ambitious plans for electric drone-like flying cabs take step forward as Uber announces plans to test flights in LA in 2020

THE VERGE

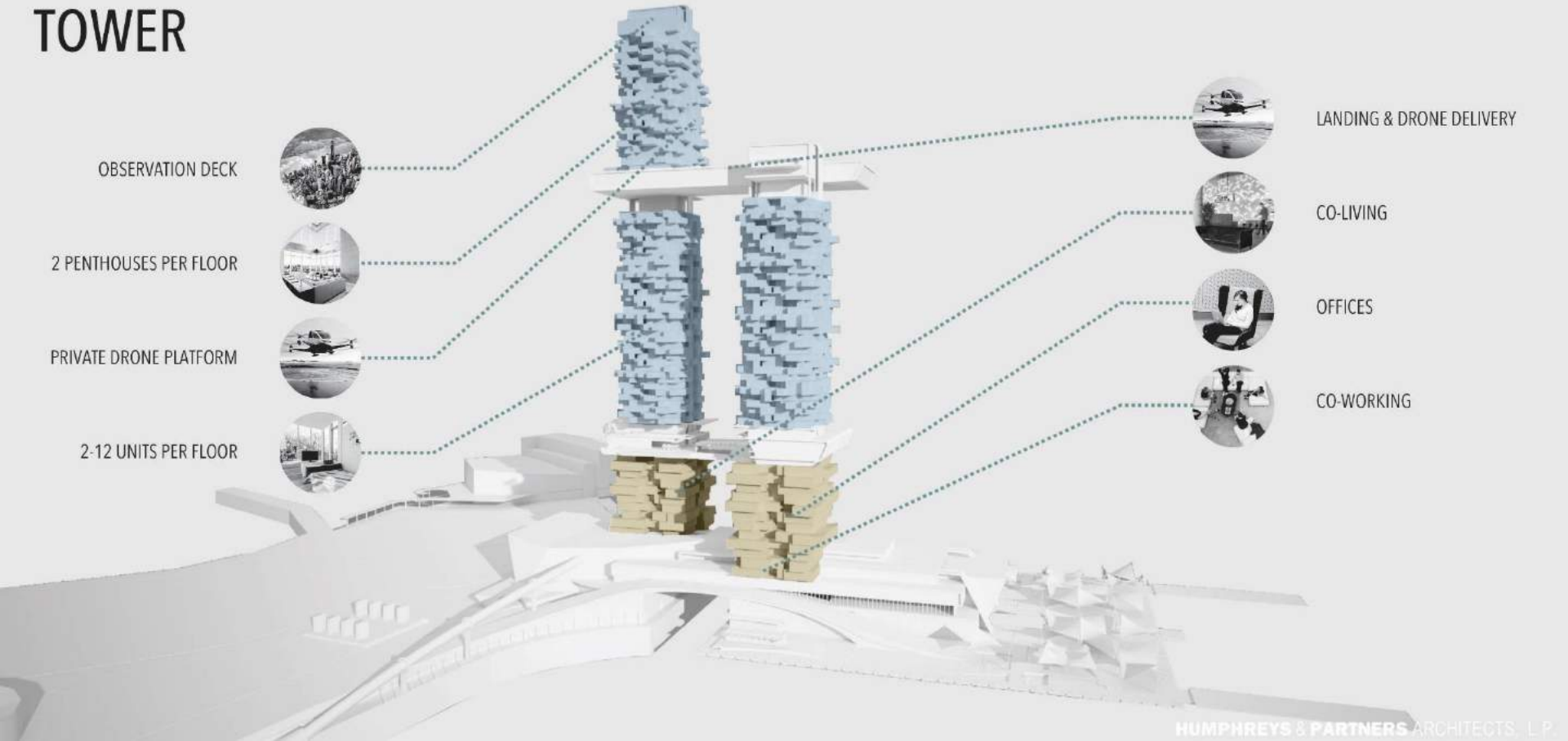
Uber's 'flying cars' could arrive in LA by 2020 — and here's what it'll be like to ride one

TOP PLATFORM

DRONES

- FLIGHT SPEED
  - 100 km/h
- CRUISING DURATION
  - 25 min
- CRUISING ALTITUDE
  - 500 m
- RATED PAYLOAD
  - 100 kg
- CHARGING TIME
  - 1 hour

TOWER


OBSERVATION DECK
2 PENTHOUSES PER FLOOR
PRIVATE DRONE PLATFORM
2-12 UNITS PER FLOOR
LANDING & DRONE DELIVERY
CO-LIVING
OFFICES
CO-WORKING

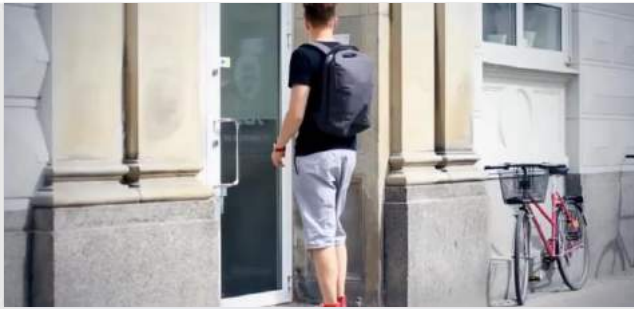
TOWER / OFFICE

CO-WORKING

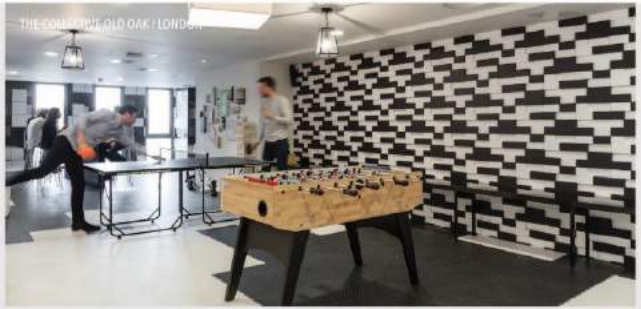
- 84% of users are more motivated
- 67% improved their professional success
- 69% of users feel more successful
- 64% of users said co-working network is a very important source of work
- 82% have expanded their professional networks
- 69% learned new skills
- 89% are happier

TOWER / OFFICE

DIGITAL TECHNOLOGY



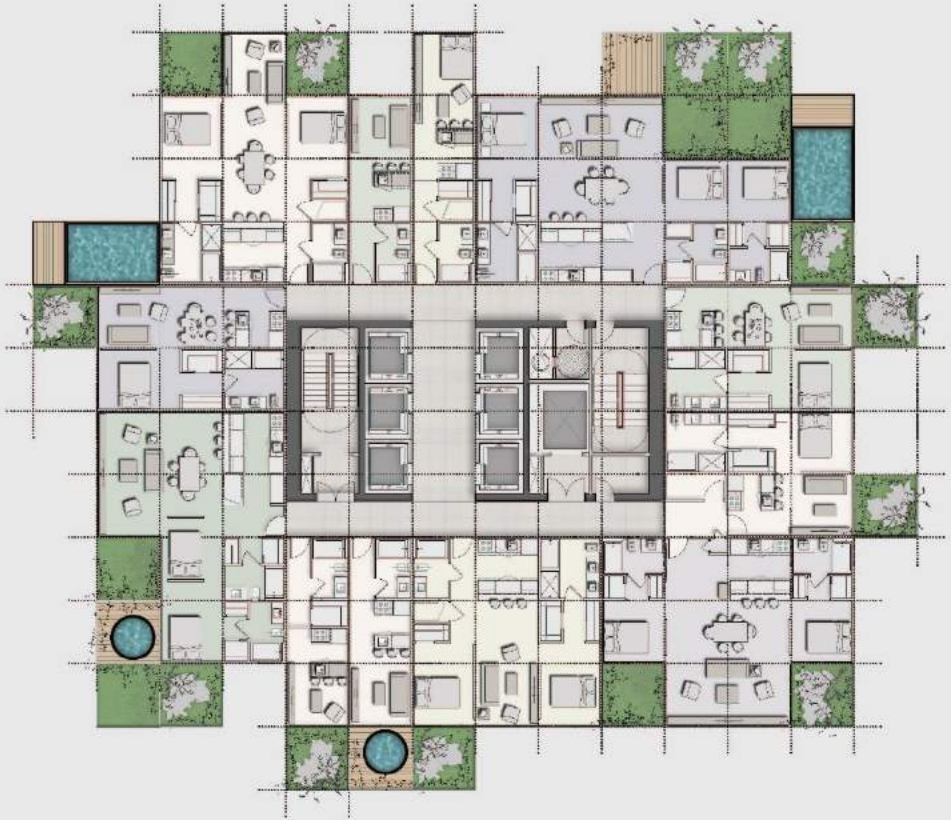
HUMPHREYS & PARTNERS ARCHITECTS, L.P.



TOWER

CO-LIVING

- Unique community feel
- Rapidly growing segment
- Small units, loaded with services
- One bill
- Urban lifestyle
- Openness over competition
- Sharing over consumption
- Experimentation over status quo
- Responsibility over resignation



TOWER / UNITS

TYPICAL FLOOR PLAN

- From 2-12 units per floor
- Efficiency 88%
- Highly modular
- Flexible units
- Private patio

1080 SQ.FT
STANDARD UNIT

300 SQ.FT
MICRO UNIT

TOWER / UNITS

MODULAR

- EXCEPTIONAL QUALITY
  - Quality controls taken off-site, reach superior results than traditonal techniques
- SPEED
  - Built in about 1/3 the time needed to construct a site-built building
- COST SAVINGS
  - Modular construction can save the consumer 10-20%
- FLEXIBILITY OF DESIGN
- ENERGY EFFICENCY
  - 50% more energy efficient

TOWER I UNITS

'KASITA' CONCEPT

- Small package
- Delivered ready
- Every cubic foot is thought out

TOWER / UNITS

ALL IN ONE FURNITURE

- Ori
  - At the touch of a button, the full sized configuration transforms to offer a full scale bedroom, office and living room

- Versatility and mobility
- Cost savings
- Space savings

TOWER I UNITS

PRIVATE PATIO

- Empty nesters demanding more room

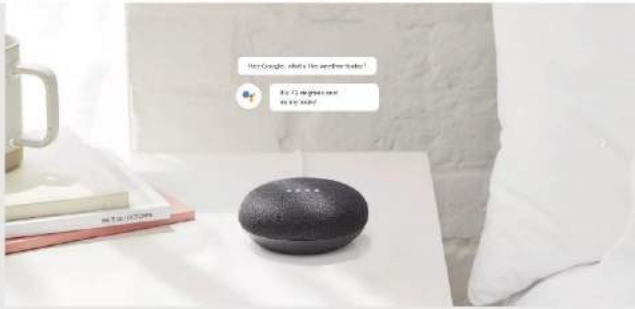
TOWER / HOME TECHNOLOGY

HOME ASSISTANTS

- Google Home
- Alexa
- Apple Home Kit

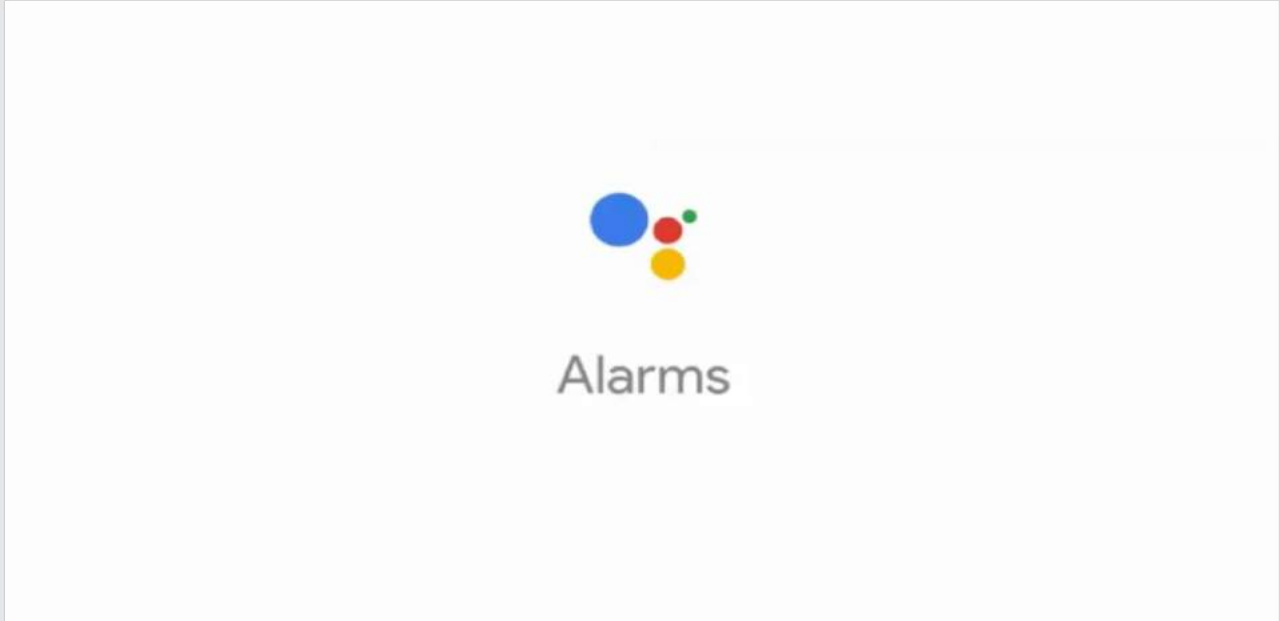
TOWER / HOME TECHNOLOGY

GOOGLE HOME



- Hands-free help from Google Assistant
- Play music
- Control your smart home
- Manage your every day tasks
- Set your everyday alarm
- Ask about your daily schedule
- Make calls
- Read the news

- COST
  - Google Home: $ 129
  - Google Home Mini: $29
  - Google Home Max: $ 399



TOWER / HOME TECHNOLOGY

GOOGLE HOME ASSISTANT

Meet your Google Assistant

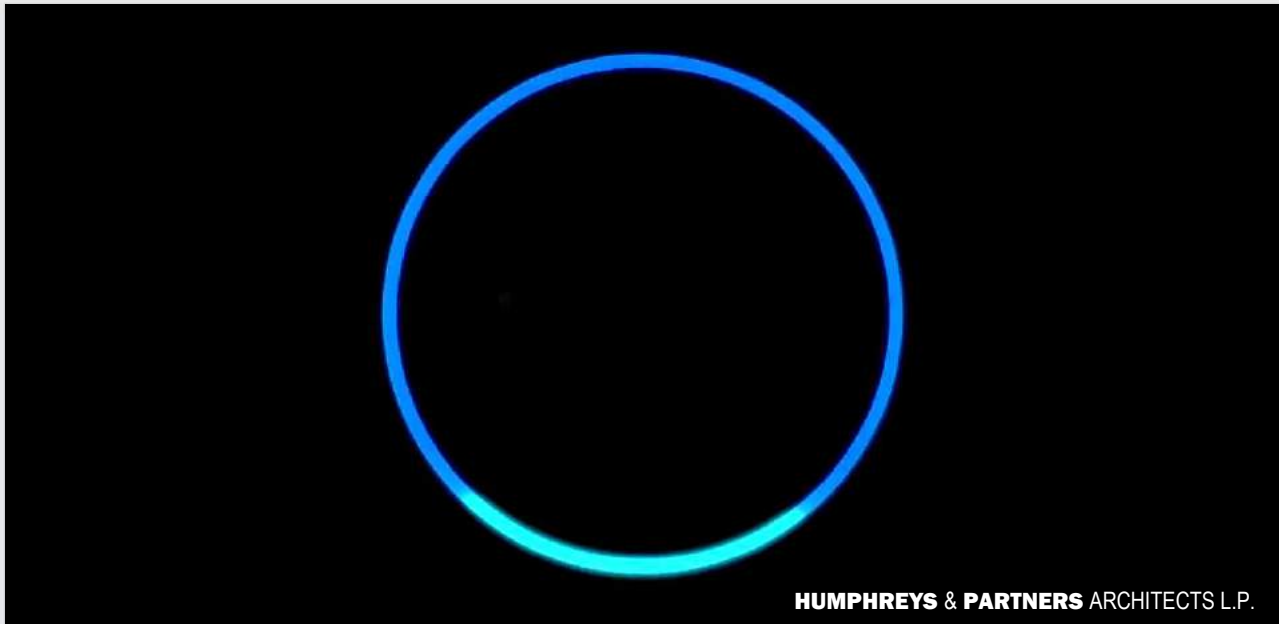
- Ask questions
- Tell it to do things
- It's your own personal Google
- Always ready to help

Hi, how can I help?

TOWER / HOME TECHNOLOGY

AMAZON ECHO & ALEXA

- Control your smart home
- Ask any question
- Turn up music
- Check the weather
- Place an order
- Hear the news
- Order food
- Control TV
- COST
  - Echo Dot: $ 49.99
  - Echo: $ 99.99
  - Echo Plus $ 149.99



TOWER / HOME TECHNOLOGY

APPLE HOME APP

- CONTROL YOUR HOME KIT
  - Lights, switches & outlets
  - Thermostats
  - Windows
  - Fans & Air Conditioners
  - Humidifiers & Air Purifiers
  - Speakers
  - Sensors
  - Security & Locks
  - Cameras & Doorbells
  - Garage Doors

APPLE

APPLE

IDEVICES

VELUX

EVE

D-LINK

TOWER / HOME TECHNOLOGY

A.I. PERSONAL ASSISTANT

- TEMI
  - Personal assistant
- HONDA
  - A18. Charming companion
  - B18. Chair-type mobility
  - C18. Multi-functional cargo
  - D18. Autonomous off-road vehicle
- CUTTI
  - Elder autonomy help

TOWER / HOME TECHNOLOGY

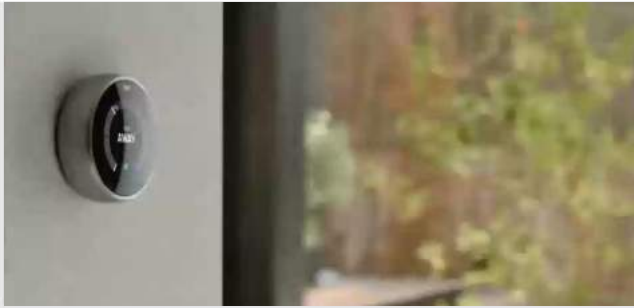
A.I VACUUM AND GLASS CLEANERS

TOWER / HOME TECHNOLOGY

NEST

Control Nest devices from anywhere

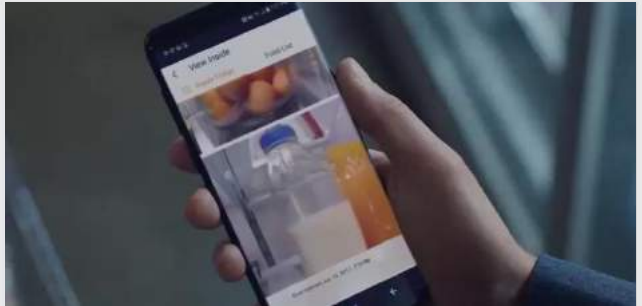
- THERMOSTAT
  - Energy savings 10% to 15%
- PROTECT
  - Pinpoint where smoke is coming
- HELLO
  - Lets you know who's there 24/7
  - Go back 3 hour snapshot history
- CAM
  - See your home 24/7
  - Alert when something happens



TOWER / HOME TECHNOLOGY

SAFETY TECHNOLOGY

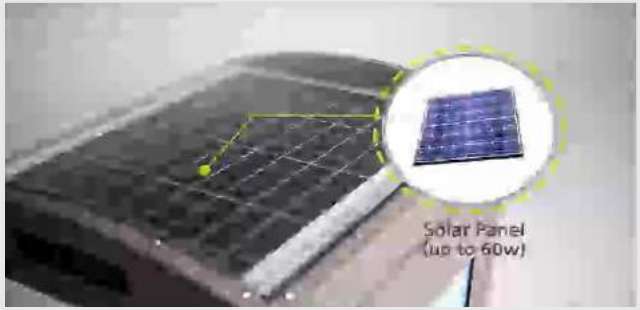
- Doorbell camera
- Multi-credential property access control



TOWER / HOME TECHNOLOGY

SMART KITCHEN

- INTERACTIVE COOKTOP
  - Embedded induction surface
  - Multi-touch counter
  - Access to recipes
- MOLEY CHEF ROBOT
  - Reproduces the human hands
  - Operated from a touch screen or via smartphone
  - When not in use, the robotic arms retract from view
- SMART REFRIGERTOR
  - Create shopping list
  - Peek inside your refrigerator from anywhere
  - Coordinate family schedules



TOWER / HOME TECHNOLOGY

TRASH

- FOOD RECYCLER
  - Zera converts 95% of waste into ready-to-use fertilizer
  - Food waste accounts for around 20% of America's landfills
  - Average family produces over 400 lbs. of food waste
- SOLAR TRASH COMPACTOR
  - Powered by solar energy
  - Safety sensors
  - CleanCube can hold up to 8 times more waste
  - Reduces collection frequency by up to 80%

TOWER / HOME TECHNOLOGY

INTERACTIVE GLASS

- Smart surface technology
- Transforms a variety of surfaces into functional touchscreens
- Watch TV shows in the kitchen while you cook
- Manage home appliances
- Bluetooth audio and online video

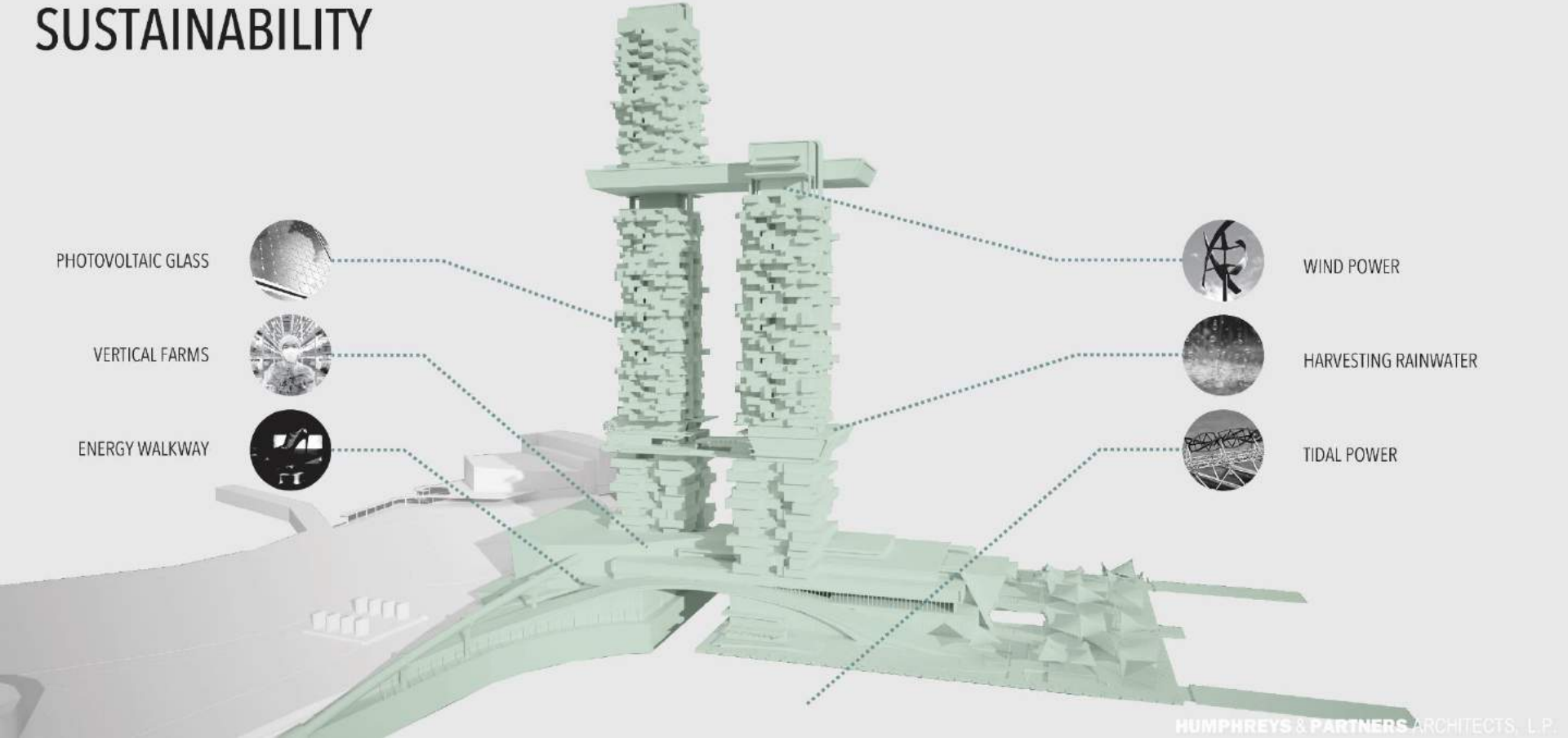
TOWER

PRIVATE DRONE PLATFORM

The private drone platform can be used by penthouse owners.

- Movable
- Called in via app

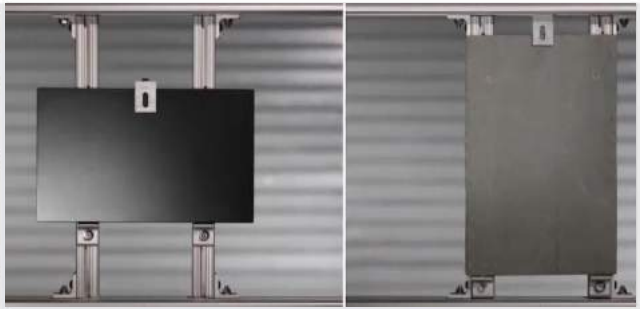
SUSTAINABILITY

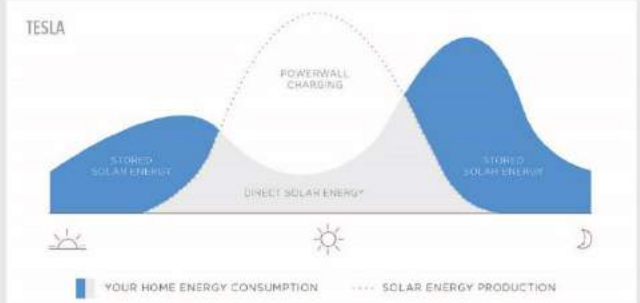


SUSTAINABILITY

SOLAR POWER

- Double digit growth year after year
- COST
  - 3.7 cents per kWh
- ENERGY PER YEAR
  - 1 watt-peak of solar PV capacity generates 1 to 2 kWh
- GROWTH
  - 90% of capacity installed after 2011





SUSTAINABILTY

TESLA ENERGY

- SOLAR ROOF
  - $21.85 per square feet
  - Invisible solar cells
  - Infinite tile warranty
  - $5000 cost
  - $2000 installation
- POWERWALL
  - Stores the excess solar energy
- TESLA APP
  - Monitor and manage your storage energy.

SUSTAINABILITY

DYNAMIC GLASS

- COOLING
  - Saves 34% in cooling loads
- LIGHTING
  - Saves 29% in electrical use
- VISIBLE LIGHT
  - Controls between 60%-1%
- SOLAR HEAT
  - Controls between 0.40-0.05

SUSTAINABILITY

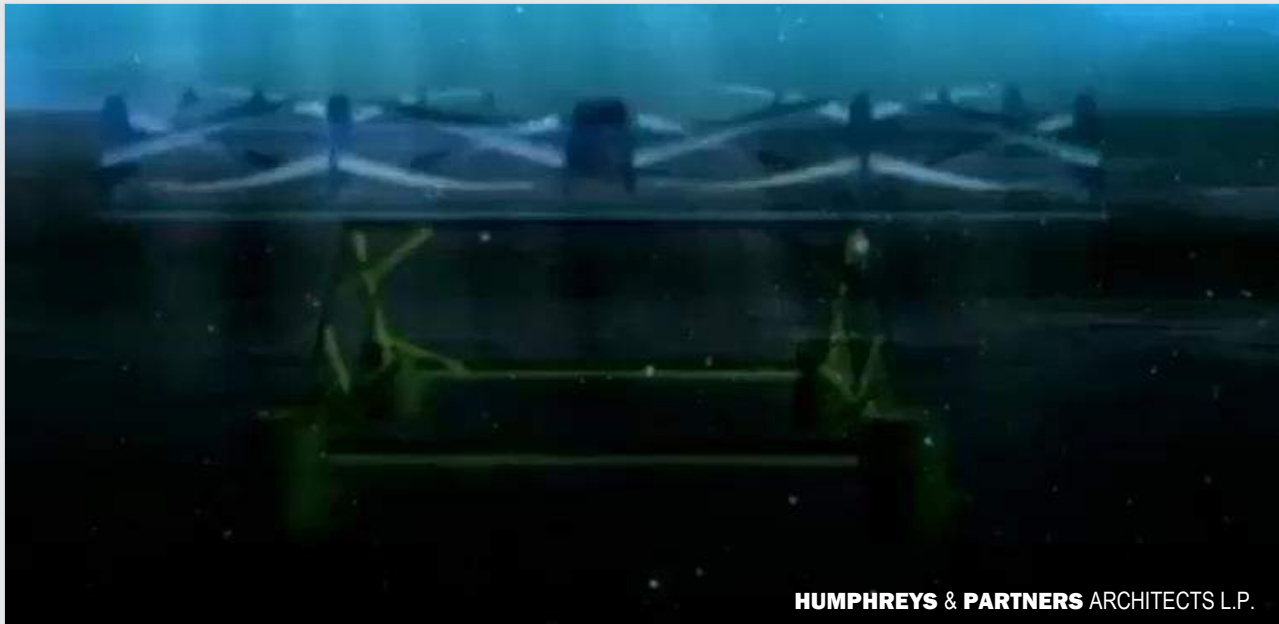
WIND POWER

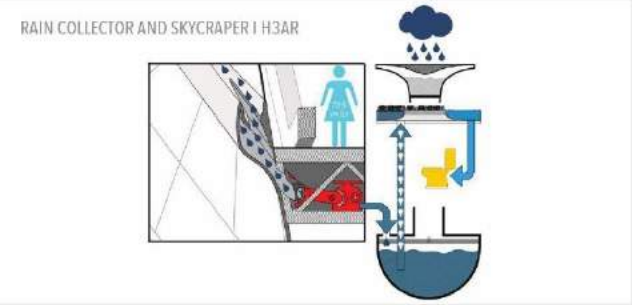
- COST
  - Less than 1 cent per kWh
- ENERGY PER YEAR
  - Small wind turbines could provide up to 1.5 TW.h
- CARBON FOOTPRINT
  Yearly emissions eliminated by generating energy from a 1 MW wind turbine instead of 1 MW of conventional sources
  - 1,500 tons of carbon dioxide
  - 6.5 tons of sulfur dioxide
  - 3.2 tons of nitrogen oxides
  - 60 pounds of mercury

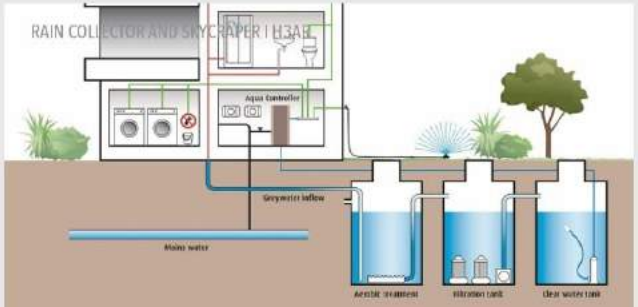
SUSTAINABILITY

TIDAL POWER

- SOURCE
  - Energy source is a result of the gravitational fields from both the sun and the moon
- HIGH POTENTIAL
  - Tidal and wave energy hold uo to 1.400 TWh of potential energy each year.
  - The US requires about 4.000 TWh of energy each year







SUSTAINABILTY

WATER

- HARVESTING RAINWATER
  - The average family uses around 350 gallons of water per day
  - Less than 5% of water is used for drinking and cooking
  - During summer, gardens can account for 50-70% of the home's water usage
- GREYWATER RECYCLING
  - Greywater makes up 65% of wastewater
  - Reduces water bills 30%
  - Greywater can save 70 lts of potable water per person per day in domestic households

SUSTAINABILITY

VERTICAL FARMS

- 2050 WORLD'S POPULATION
  - 9 billion
- 2050 FOOD PRODUCTION
  - 70% more
- LAND
  - 1 acre = 100 farmed acres
- WATER
  - 90% less waste
- ENERGY
  - 40% less electric power
- HARVEST YIELDS
  - 25-300 crops per m2, in the outdoor there is 18 crops per m2
- NO PESTICIDES

SUSTAINABILITY

GREEN LIVING WALLS

- Reduces urban heat island effect
- Cleans air of pollutants
- Acts as a sound proofing barrier
- Soil and Plants are a natural filter
- Reduces 50°F wall surface temperature
- Creates habitats for birds and insects, increasing biodiversity
- Increases real estate values
- Reduces absenteeism in the workplace
- Qualifies for LEED certification

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