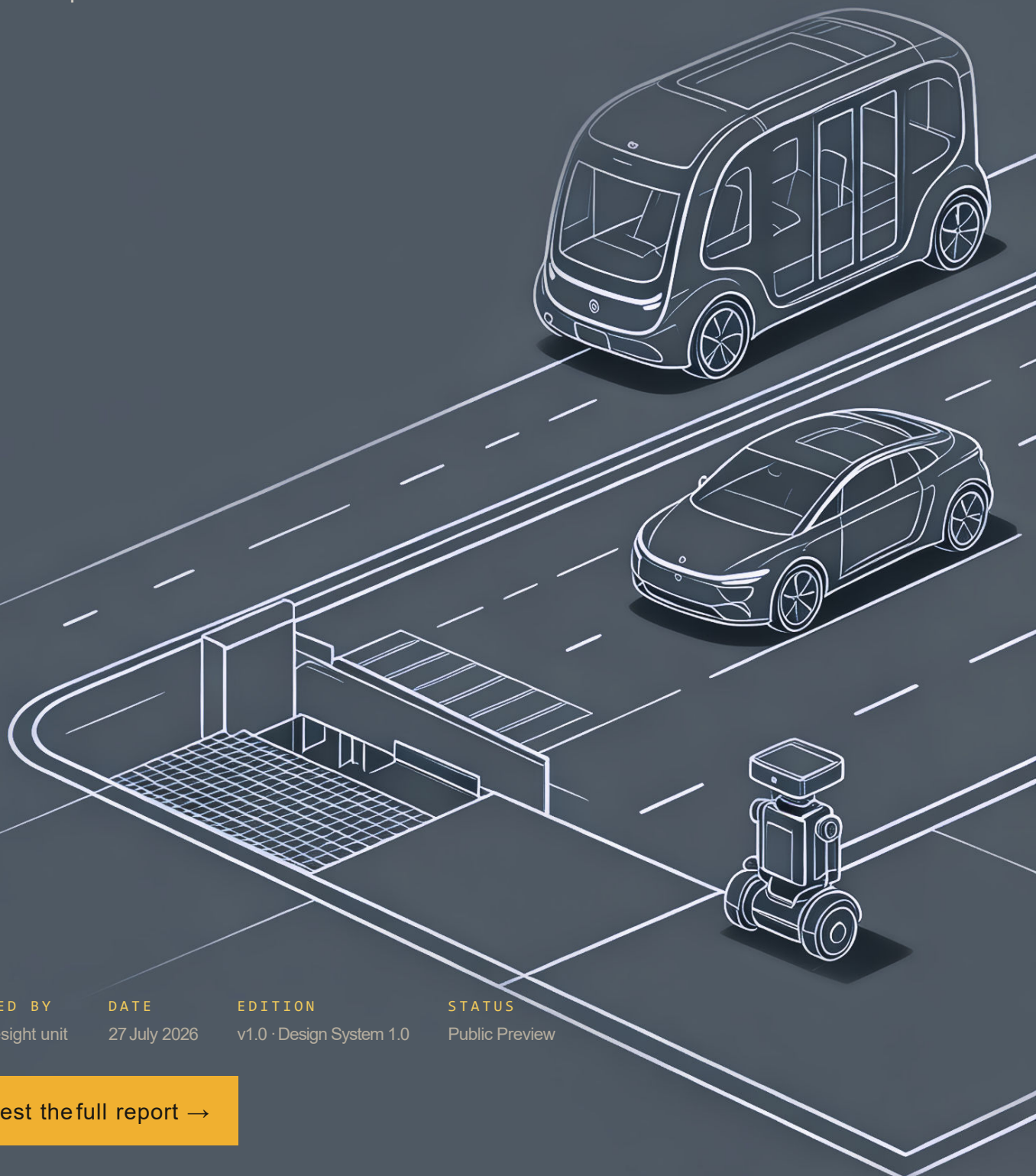


Autonomous Vehicles and the Built Environment

A research preview on how self-driving mobility reshapes architecture, urban design and real-estate value, and where the profession should act first.



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[Request the full report →](#)

The short version

Autonomous vehicles are not just a transport technology—they are a land-use technology. The single largest consequence for the built environment is the release of parking and road land (20–35% of car-centric urban cores) and the emergence of a new building edge: the autonomous logistics interface.

20–35%

of urban core land is parking in car-centric metros (5% in transit-strong cities)

83–97%

parking demand cut under shared-AV (AMoD) fleets

+50–60%

more walkable public area once curbside parking is removed (MIT est.)

>40%

of vehicles autonomous by 2035 (McKinsey)

What the profession should take away

1. Parking is the dividend. Convertible-by-design parking structures are the clearest near-term opportunity.
2. The building edge moves. Curbside pod bays, parcel lobbies, and robot service cores replace the loading dock and front desk.
3. Logistics pods are underserved. Hotels and research centers need purpose-built autonomous receiving—almost no one is designing for it yet.
4. Don't bet one scenario. Private-AV ownership drives sprawl; shared fleets drive re-densification. Model both per market.

ABOUT THIS PREVIEW

This is a public preview of a forthcoming aleatek foresight study. Every figure is a sourced estimate (see Bibliography). Validate against your target cities' local data before any project use. The complete report adds city-specific models, client-ready toolkits, and pod-bay standard drawings.

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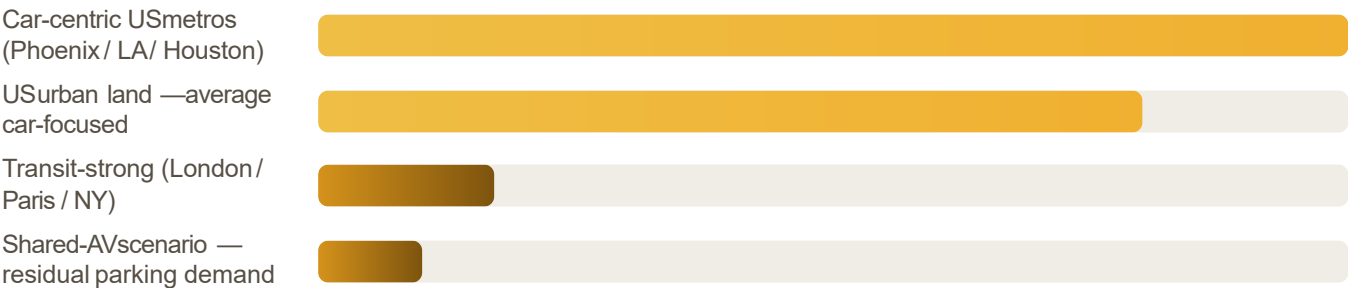
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The parking dividend is the headline

Surface parking and garages consume a staggering share of urban land. AVs—especially shared fleets —collapse that demand, freeing the largest latent redevelopment land bank of the century.



Share of urban-core land devoted to parking. Sources: IPMI via GSPartners; DWS(2025); LUTIsimulations, Sustainability-Directory synthesis.



Projected parking-demand reduction vs today. Shared fleets also cut total vehicle count 85–93% (LUTIsimulations).

America's parking footprint, estimated at 500 million parking spaces, consumes more land than Delaware and Rhode Island combined.

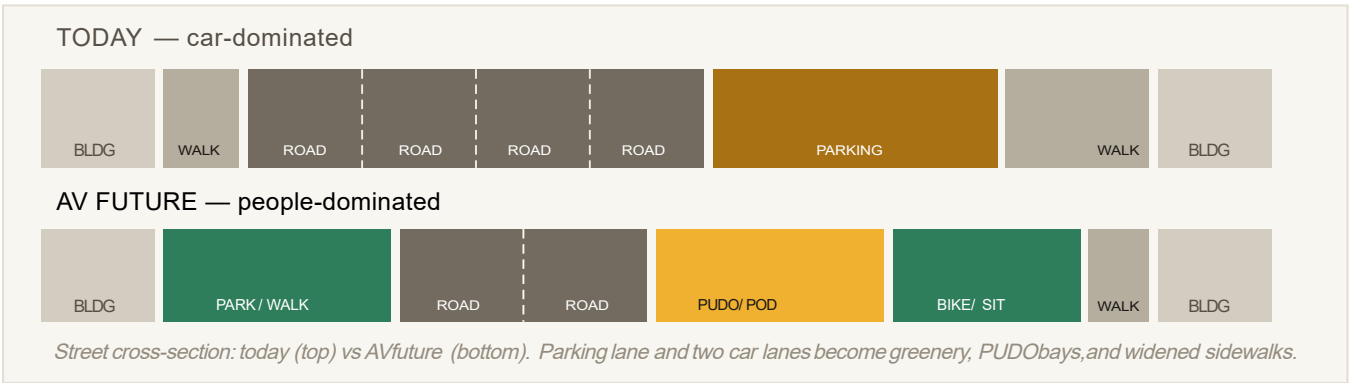
– Gensler, Dialogue 30, "The Game-Changer for Cities"

IMPLICATION

Architects who can convert parking structures (not just demolish them) capture the dividend. Specify above-grade, flat-slab, higher-clearance parking now, so it can become office, housing, or data center later.

Street geometry & the public realm

Remove curbside parking and the need for wide car lanes, and the street cross-section is rewritten. The freed width becomes sidewalk, bike lane, parklet, and PUDO (pick-up/ drop-off) zone.



Freed-up curb and parking space could add 50–60% more walkable public areas in dense neighborhoods.

– MIT, via GSPartners CRE analysis

IMPLICATION

Curbs convert from storage to dynamic PUDO. Building entrances are redesigned around drop-off, not parking access. Complete-streets design becomes the default.

SECTION 3 • FINDINGS

Building typology changes

The program of buildings shifts at the edges: garages become livable space, and parking structures are detailed for later conversion.

Garage → ADU

Suburban home garages convert to studios, granny flats, or short-term rental; driveways green; cul-de-sacs become shared play space.

RESIDENTIAL

Convertible parking

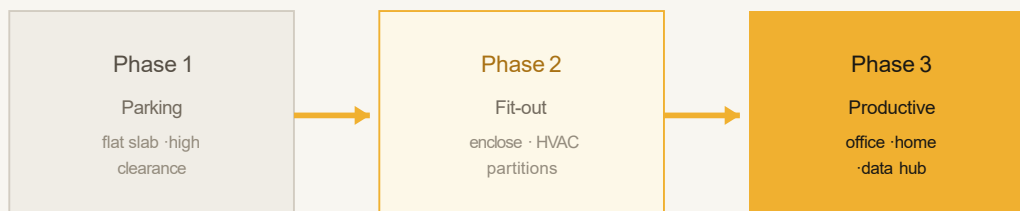
Above-grade, flat slabs, higher ceilings, enclosed for future HVAC. Gensler's 84.51° Centre has 3 parking levels convertible to office.

MIXED-USE

Gas/detail → infill

Gas stations and dealerships become prime redevelopment sites (already happening along LA's Expo Line).

URBAN



ONCE → CONVERT LATER (no demolition)

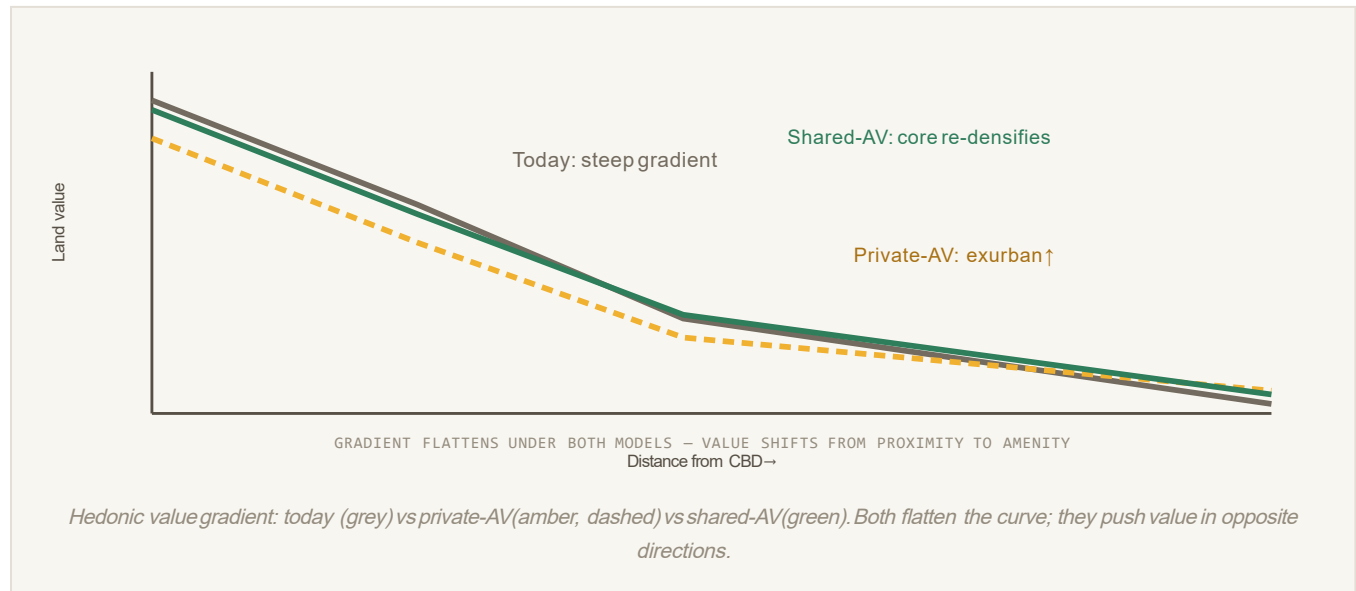
Convertible-by-design parking: a single structure serves three lives without structural rebuild.

IMPLICATION

"Convertible-by-design" should enter the firm's standard parking guidance now —it is a cheap insurance policy against obsolescence.

The value gradient flattens —but bifurcates

The core mechanism is the disutility of travel time. When the car drives itself, distance stops punishing, and the traditional premium on proximity to the CBD erodes. But the direction depends entirely on the adoption model.



Travel-time disutility cut
(private AV)



US survey: would move
farther out if AVs
widespread



Journey-time reduction
(forecast)



Mechanism: lower perceived cost of travel → people trade distance for space. Source: DWS(2025); Sustainability-Directory VOTT synthesis; BCG commute-time estimate.

Autonomous vehicles are not transportation technology; they are a land-use technology that will either create endless sprawl or the most dense, regenerative cities ever conceived.

— Sustainability-Directory, "AVs Impact on Urban Real Estate Values?"

IMPLICATION

Car-centric Sunbelt metros (Phoenix-type) face the biggest gradient shift; transit-strong cities (London-type) see milder change. Underwrite secondary-CBD office and urban-core parking for obsolescence risk; flag exurban land plays.

Commercial & logistics spillover

AVs don't only move people —they move goods. The last-mile cost collapse reshapes retail, healthcare catchments, and suburban logistics demand.

Last-mile delivery cost reduction



US population with limited mobility served by AVs



Sources: Deloitte (last-mile); US mobility estimates (customer/employee base expansion).

Retail shrinks

Showroom-style formats grow; physical stores thin out as delivery cost falls.

RETAIL

Catchment widens

Elderly/ limited-mobility populations gain a customer & employee base previously unreachable.

HEALTH / SVC

Suburban logistics

Demand for out-of-town fulfillment and AV parking/charging land rises at the fringe.

INDUSTRIAL

Drop-offs and passenger loading zones will become the new entrances into buildings. Everyone will be dropped off at the front door —curbside service.

— Gensler, Dialogue 30

IMPLICATION

Mixed-use with embedded micro-fulfillment and mobility hubs; secondary CBD office faces longer-term risk. But the deeper opportunity is the building logistics interface —covered next.

Delivery pods & building logistics pods

Autonomous delivery arrives as sidewalk / road pods (cargobots, Nuro-type vehicles, drone modules)—not a truck at a loading dock. This rewrites the building edge. It is architectural (cores, docks, lobbies, corridors), not just operational, and almost no one is designing for it yet.

6a · The autonomous last-mile interface

Curbside pod bays

Fixed, signed bays where pods stage, charge, and hand off —replacing ad-hoc double-parking. Needs power, weather cover, secure interface.

CURB

Parcel lobbies

Conditioned, access-controlled room (not reception) where pods drop and humans collect —the smart-office / hotel model.

INTERIOR

Robot service cores

Separate, fire-rated service lifts sized for bots; decouples human and machine circulation.

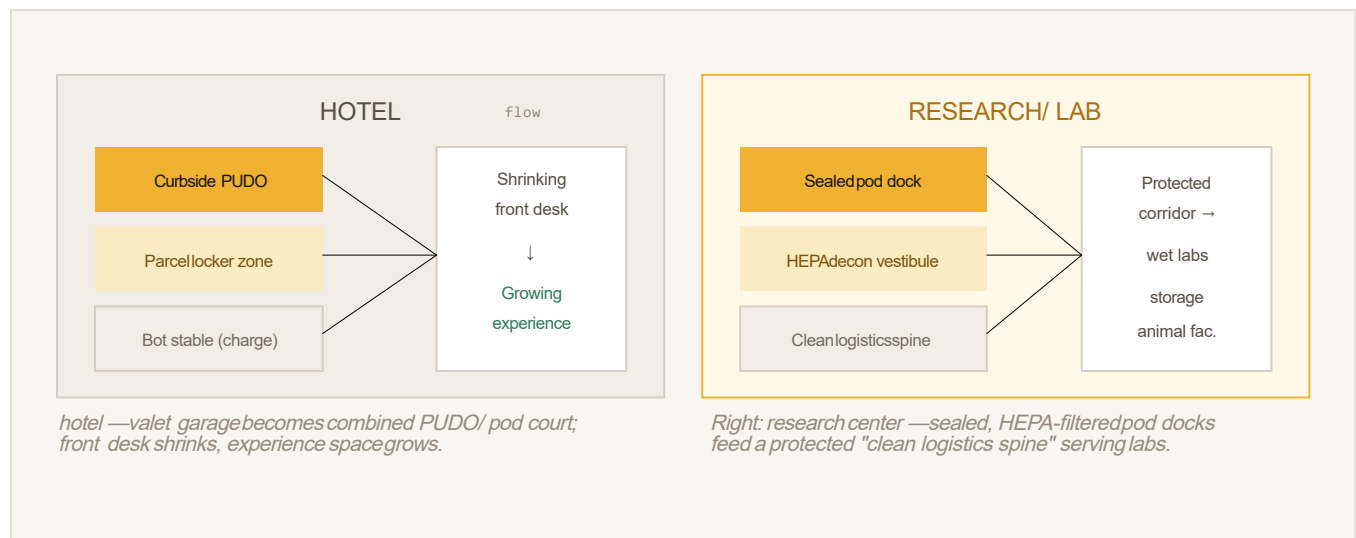
CORE

Roof / undercroft hubs

Idle pods charge and stage on roofs or in former parking voids, cutting street clutter.

VOID

6b · Building-specific logistics pods



Hotels

Auto check-in + luggage pods; room-service bots need wider corridors and robot elevator banks; valet garage → combined PUDO/podcourt.

HOSPITALITY

Research centers / labs

Secure clean/dirty specimen pods; internal transit corridors; sealed, HEPA-filtered decontamination docks keep humans and autonomous cargo apart.

SCIENCE

Hospitals

Autonomous pharma, linen, meals, specimen return —same dock-redesign logic as labs. Adjacent service-line extension.

HEALTH

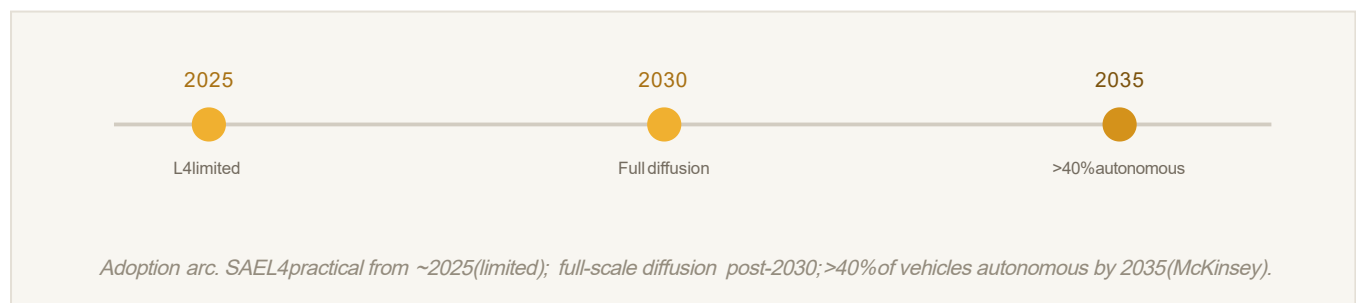
THE PROFESSION'S EDGE

Logistics pods are the highest-value, least-explored building-program opportunity here. Lead with per-type pod kits: curbside bays, parcel lobbies, robot service cores, and hotel / research-center/ lab pod docks.

SECTION 7 · FINDINGS

Timeline & uncertainty

State this prominently: the binding constraint is regulation and public readiness, not the technology.



The question is not whether AVs will affect commercial real estate —but how quickly, and who will capitalize on the shift first.

— GS Partners, "How Self-Driving Cars Will Transform Commercial Real Estate"

KEY RISK

The early hybrid era (AVs+human drivers) may increase congestion before it improves. Zoning and regulation are the bottleneck. Plan for a 10–15 year transition, not an overnight flip.

SECTION 8 • THIS IS A PREVIEW

Inside the full report

This preview samples the findings. The complete aleatek foresight study is a 12-week, multi-branch research program built to give architects and developers defensible, billable IP before the market moves. What the full report adds:

Seven workstreams, one auditable evidence base

#	WORKSTREAM	LEAD	DELIVERABLE
W1	Literature & data review	Research	Annotated evidence base
W2	Market scenario modeling (PAV vs SAV)	Analyst + GIS	3 scenario maps per target city
W3	Typology studies (parking, drop-off, charging)	Design	Precedent + prototype drawings
W3b	Logistics & delivery-pod typology	Design + Logistics	Pod-bay standards + building inserts
W4	Real-estate impact (value gradients)	Finance	Investment theses per asset class
W5	Policy & zoning gap analysis	Planner	Regulatory risk map
W6	Practice playbook	Partners	Internal strategy + client deck

What the published study delivers beyond this preview

City models

Per-market PAV/SAV scenarios for Shenzhen, Hong Kong, and two European benchmark cities —not generic ranges.

W2 / W4

Pod-bay standards

Drawn, dimensioned pod-bay + parcel-looby + robot-core standards ready to drop into RFPs and SDs.

W3B

ROI & risk tools

Convertible-parking payback models and asset-class obsolescence scoring for client workshops.

W4 / W5

Client-ready deck

A white-label presentation the firm can take directly to developers and landlords.

W6

WHY A PREVIEW

We are publishing selected findings now to start the industry conversation—and to hear from peers and clients where the full study should go deepest. If a workstream above matters to you, tell us when you request the report.

What this means for architects & developers

1. Convertible-parking standard. Specify above-grade, flat-slab, high-clearance parking for all new multi-level structures.
2. Parking-to-productive-use retrofit service. Huge existing-building market; convert, don't demolish.
3. Mobility-hub / PUDO public-realm kits. Curbside and forecourt design standards.
4. Asset-class exposure advice. Underwrite secondary-CBD office and urban-core parking for obsolescence risk; flag exurban land plays.
5. AV-ready specification. Pitch as a differentiator in RFP responses now.
6. Logistics-pod kits per building type. Curbside pod bays, parcel lobbies, robot service cores, and hotel / research-center / lab pod docks. This is the underserved, high-margin niche — lead with it.

BOTTOM LINE

The parking dividend is real but contested. The building logistics interface — pods, docks, and the clean logistics spine — is where an architecture practice can actually create defensible, billable IP before competitors notice.

Get the full report

The complete aleatek foresight study — city models, pod-bay standards, ROI tools, and a client-ready deck — is published to industry partners in Q4 2026. Request access and tell us which workstream matters most to your practice.

Request the full report →

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AVAILABILITY

Q4 2026 • free to industry partners

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- **ScienceDirect built-environment study (2022)** —"Disruptive Impacts of Automated Driving Systems on the Built Environment." Parking transformation, drop-off redesign, suburban garage conversion, sprawl risk.
- **GSPartners** —"How Self-Driving Cars Will Transform Commercial Real Estate." 20–30% urban land to parking; last-mile; CBD risk.
- **MIT (via GSPartners)** —Estimate: +50–60% walkable public area once curb/parking freed.
- **Sustainability-Directory** —"AVs Impact on Urban Real Estate Values?" LUT synthesis: 85–93% vehicle reduction, 83–97% parking reduction; PAV vs SAV value bifurcation.
- **Deloitte** —Last-mile delivery cost reduction >50% under autonomous delivery.
- **McKinsey** —>40% of vehicles fully autonomous by 2035.
- **BCG** —Average US commute times –25% under AVs.
- **MLIT, Japan** —SAEL4 practical ~2025 (limited); full diffusion post-2030.
- **IPMI** —International Parking & Mobility Institute parking-land share statistics.
- **aleatek Design System Manual v1.0 (2026)** —Brand identity (mark, two-tone wordmark, color #F0B030, Outfit/Source Sans3 / JetBrains Mono typography) applied throughout this preview.

CAVEAT

Figures are sourced estimates spanning 2022–2026 literature and industry reports. Treat ranges (e.g. –50 to –97% parking) as scenario bands, not point predictions. Validate against local data before project use. Full citations and methods appendix ship with the published report.