Automated Parking Solutions

Taking the Space Out of Parking & Futureproofing the Podium

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Why Automated Parking?

- Demand for Parking Spaces in Urban Areas Changing – Developers and Cities want to:
  - Reduce Cost
  - Increase Density
  - Use Land More Efficiently
Types of Automated Parking

- **Stackers** – just up & down, often tandem
- **Puzzle Lifts** – most commonly used by SDG in its mixed-use projects
  - https://vimeo.com/246154246
- **Parking Tower** – Installed at SDG’s HIVE Development
  - https://vimeo.com/256845701
# Features of Automated Parking Solutions

## Key Features By Type

<table>
<thead>
<tr>
<th></th>
<th>STacker</th>
<th>Puzzle</th>
<th>Tower</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New Construction</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Retrofit</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td><strong>Independent Access for Driver</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td><strong>EV Charging</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Remote Monitoring</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Maximum # Levels</strong></td>
<td>2</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td><strong>Retrieval Speed (Seconds)</strong></td>
<td>45 – 180</td>
<td>30 – 45</td>
<td>90 – 120</td>
</tr>
<tr>
<td><strong>Benefits</strong></td>
<td>Min 12’ clear height, Small to large scale project, Easy to install</td>
<td>Min 12’ clear height, Price and operating cost</td>
<td>Efficient design, Narrow space, Standalone or part of new structure</td>
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</tbody>
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Reducing Cost

Puzzle lift –

Two, three or four levels:

- $17,000 to $20,000 per space vs. $50,000 to $60,000 in a conventional parking podium
- Add roughly $3,000 to $5,000 for pits

Tower Lifts–

- $25,000 to $30,000 per space
- Hive tower 39 spaces on area for 7 spaces

- Warranty: $12 or $25 per space/mo.
- Energy: $11/yr. approx./space
- Power Needs: 208v, 3 Phase, 40 amp
- Puzzle Motors draw only 4kw
Market Acceptance & Benefits

- Perceived Safe and Secure Storage of Car
- Reduced Greenhouse Emissions
- Higher Volume Ceilings in Garages Feel Better to Residents
- Podium Height Allows for Mezzanine Uses
More Efficient Use of Land

• Perfect for tight infill multi-family sites

• Typically uses 1/4 to 1/3 of land area than conventional

• Allows for Alternate Ground Floor Uses and More Units in Areas with Height Limits

• Podium Height Provides Better Human Scale for Retail Storefronts and Street Scene
Futureproofing the Podium
Automated Parking – Futureproofing the Podium

A. Expect Long-term Changes in Parking Demand:
   • Proliferation of Ride Sharing, Bicycles, Scooters
   • More Transit
   • Driverless Cars
   • Cost of Rent – Tenants forgoing Car Ownership

B. Podium Dimensions Allow for Alternative Future Uses
   • Typical 18.5’ to 22’ Podium Heights for 3 Level Puzzle
   • 13.6 to 15’ Heights for 2 Level Puzzle

*Note: Future Uses and Zoning Considerations