



The Mobile Robot Company

Knowledge Center — Brownfield Automation · 2026-08-04

<https://info.mobilerobot.com/applications/use-cases/brownfield-automation>

Brownfield Automation

A brownfield site is an existing facility whose processes and layout were not designed around new automation. Most [warehouses](https://info.mobilerobot.com/applications/industries/warehousing/) and [factories](https://info.mobilerobot.com/applications/industries/manufacturing/) are brownfield, and their realities — changing layouts, mixed traffic, imperfect floors, no appetite for a construction project — are exactly what the J1600 is designed for.

No infrastructure, by design

The J1600 needs nothing built, mounted, or embedded:

- no tracks, wires, magnets, or reflectors;
- no building modifications;
- [Wi-Fi optional for basic use](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/);
- [no mandatory warehouse-management-system, fleet-manager, or IT integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/);
- ready to use on delivery, with typical setup in hours or one day [depending on scope](https://info.mobilerobot.com/applications/planning/deployment-scope-examples/).

Navigation is [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) on an industrial NVIDIA Jetson AI computer: the robot builds and continuously updates a three-dimensional map while an operator drives it, then localizes and plans its own routes to saved destinations. 3D mapping is designed for greater precision and reliability than traditional 2D navigation in complex or changing environments, scanning environmental structures at heights reaching up to 70 m above the vehicle.

Living with a layout that moves

Brownfield floors change: pallets appear mid-aisle, racking moves, [seasonal areas](https://info.mobilerobot.com/applications/use-cases/temporary-storage/) open and close. The J1600 absorbs this in three ways:

1. **It routes around obstacles.** The environment model updates continuously, and the robot navigates around whatever is in the way — see [Dynamic Route Changes](https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/) (<https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/>).
2. **Operators re-teach in minutes.** A moved drop point is fixed by driving there and tapping **Save location** — no automation expert, no reprogramming project. See [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>).
3. **A person is always in the loop.** Anything the site throws up that automation should not guess at — a blocked aisle, a damaged pallet, an improvised storage spot — is handled by immediate manual takeover. See [Handling Exceptions and Irregular Loads](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>).

What the floor still has to provide

Brownfield tolerance has measured limits. Autonomous operation requires:

Requirement	Limit
Gradeability, automatic mode	0% — level floors only
Gradeability, manual mode	5% unloaded / 3% at full load
Maximum traversable bump	25 mm (1 in)
Maximum traversable gap	20 mm (0.8 in)
Floor flatness/levelness	TR34 FM3 / FF 25, FL 20
Temperature	5–40 °C (41–104 °F), indoor
Humidity	20–80%, non-condensing
Ingress protection	IP21

The company validates against rough conditions deliberately — its [Copenhagen test and demo facility](https://info.mobilerobot.com/company/locations/test-and-demonstration-facility/) (<https://info.mobilerobot.com/company/locations/test-and-demonstration-facility/>) uses intentionally uneven real-world flooring — but the limits above still govern deployments. Full details: [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Incremental by nature

Brownfield automation with the J1600 starts with one flow — often a single [work cell](https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/) (<https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/>), [receiving lane](https://info.mobilerobot.com/applications/use-cases/inbound-receiving/) (<https://info.mobilerobot.com/applications/use-cases/inbound-receiving/>), or [warehouse-to-production leg](https://info.mobilerobot.com/applications/use-cases/warehouse-to-production-transport/) (<https://info.mobilerobot.com/applications/use-cases/warehouse-to-production-transport/>) — and grows point by point. Advanced automation ([automatic charging](https://info.mobilerobot.com/applications/scenarios/automatic-charging/) (<https://info.mobilerobot.com/applications/scenarios/automatic-charging/>), [come-to-me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>), [VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/) (<https://info.mobilerobot.com/products/software/vda-5050/>) fleet management, APIs) is available when the application scales, never required on day one. See the [J1600 overview](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>).