ENVIRONMENT CONSIDERATIONS RETAIL

Seasonal Decor

Seasonal displays for the holidays are often in areas that obstruct the robot's normal route path. This presents challenges with the robot's original mapped route which could lead to the robot having trouble localizing or navigating around potentially undetectable objects such as fake snow, signs or temporary carpet.

If the area is small and confined to a controlled and unchanging area, cones may be used to prevent the robot from interfering with undetectable objects. Otherwise, we advise that new routes be created to accommodate the seasonal displays.

Retail Kiosks

Similar to the challenge with seasonal décor are when retail kiosks are added or removed from the environment. The robot may not be able to navigate around a new kiosk placed in its path, and it will not automatically adjust its routes to scrub areas previously occupied by kiosks that have been removed.

When autonomous routes are created, areas subject to frequently added or removed kiosks should be excluded from autonomous routes and instead be cleaned manually.

Uneven Flooring

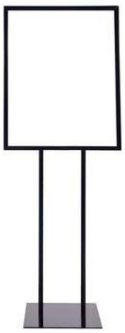
Uneven flooring or areas with raised flooring less than 4 inches are undetectable by the robot's vision system. The scrubber may be able to drive over the uneven flooring manually but running autonomously can present issues with the robot's ability to see the depression or raised portion of the floor. If this happens while the robot is running autonomously, it may recognize the depressed area as a cliff and the raised area as a wall. Avoid uneven flooring while training routes keeping in mind that the robot sees the environment differently. You can place objects like cones or wet floor signs over the area you'd like the robot to avoid.

ENVIRONMENT CONSIDERATIONS RETAIL

Flat Objects

The robot cannot detect objects less than 4 inches from the floor and will run them over in autonomous mode. If they appear in the robot's route, move them out of the way or retrain routes to avoid such objects.

- Signs or umbrellas with flat bases
- All-weather entrance mats
- Raised flooring



Food Court Seating Areas

Dynamic environments such as the food court below may not be best suited for autonomous cleaning. The tables and chairs move around and often there is not enough space for the machine to clean in between. It is possible where there is enough space, but it would require thorough preparation each night to ensure all the areas are clear and chairs pushed in.

New Displays in Aisle Entrances

Added displays can reduce the width of an aisle entrance to less than 5 feet, making it impossible for the robot to turn into when operating autonomously.

Move such displays out of the way, or make new routes excluding those maneuvers that cause the robot to stop and call for an assist.

You can try the other end of the aisle if one end is less than 5 feet due to end caps.

ENVIRONMENT CONSIDERATIONS RETAIL

Leafy Plants

Plants can become problematic obstacles because they grow over time and their dimensions increase.

When creating routes leave a 2-foot buffer between the robot's autonomous path and leafy plants.

New Movable Objects with Wheels

Be careful when creating autonomous routes in areas with wheeled shelving and displays. If the environment is already very tight, slight movements to wheeled displays can create spaces that are too small for the scrubber to navigate. If you move the wheeled shelving, you must make sure that it is back to it's original spot from when you mapped it.

Circular Support Columns

These cannot be cleaned around in the same manner as commonly done by manual scrubbing. Often the driver will make several circles around the beam. When this maneuver is replayed in autonomous mode, the robot may detect it's rear wheel is close to the column and calls for an assist.

You may want to avoid the columns or beams all together, however, if the column is large enough to make wide turns around the structure, the robot may navigate the area without issue. Test first.

Construction Facades

If added or removed from the environment, the robot may no longer recognize its environment and will come to a stop.

If new or removed construction cause frequent problems, a new route should be created.

ENVIRONMENT CONSIDERATIONS RETAIL

Ramps and Sloped Flooring

The robot cannot navigate up and down slopes. When making autonomous routes do not attempt to go up or down ramps and other sloped areas.

Sloped areas can serve as a natural barrier when segmenting a space between several different autonomous routes.

Floor to Ceiling, Reflective Windows

When scrubbing along an edge or glass partition, a reflection make cause the robot to perceive a false obstacle due to sensor interference and come to a stop. When teaching an autonomous route, stay 1-2 feet/30-60 cm away to prevent such assists from occurring. You may want to consider training a short route to test by these areas to ensure proper route scrubbing.

Vinyl Floor Stickers

These are flat objects and they cannot be seen by the scrubber. If they are fragile and may be damaged during floor scrubbing, exclude these from autonomous routes. If they are added to the environment it may be necessary to teach new routes for the scrubber.

Window Aisles (Hardware Stores)

Aisles filled with reflective surfaces like windows should be scrubbed manually. The robot's sensors will detect reflections near these objects that it senses as obstacles.

This will cause the robot to come to a stop and call for an assist.

ENVIRONMENT CONSIDERATIONS RETAIL

Overhanging Objects

If these objects appear in the robot's autonomous route, the robot may see these objects too late to navigate away from them and will call for an assist. Such objects should be avoided when creating autonomous routes.

Common Examples:

- Clip Strips,
- Protruding Merchandise
- Signs
- Leafy Plants
- Clothing Racks
- Bicycle Aisles