MYR LABS

# From Blind Spots to Insight: Bringing Sight to Critical Spaces

May 2026

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# Agenda

1. The Core Problem
2. Challenging Access Areas
3. The Reality Today
4. Limitations of Existing Methods
5. The Gap
6. Robots in the Built Environment
7. The NIMBLER platform
8. A Shift in Inspection
9. Why It Matters
10. The Future of Robotic Inspection

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# The Core Problem

Inspection is limited by access, not intelligence

Critical assets exist in hidden, confined spaces

Many areas remain uninspected or under-inspected

# Challenging Access Areas

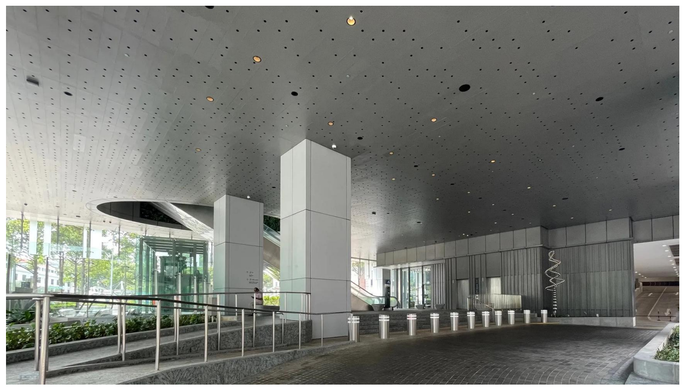
### Cable Trays, MEP Infrastructure

### Plant Rooms

### Culverts

### Inside box girders

### Large suspended ceiling areas



### Underneath Roofs

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# The Reality Today

Building owners are cost-conscious

Access is costly and disruptive

Inspections are partial

Safety risks may limit frequency

Decisions are based on incomplete data

# Limitations of Existing Methods

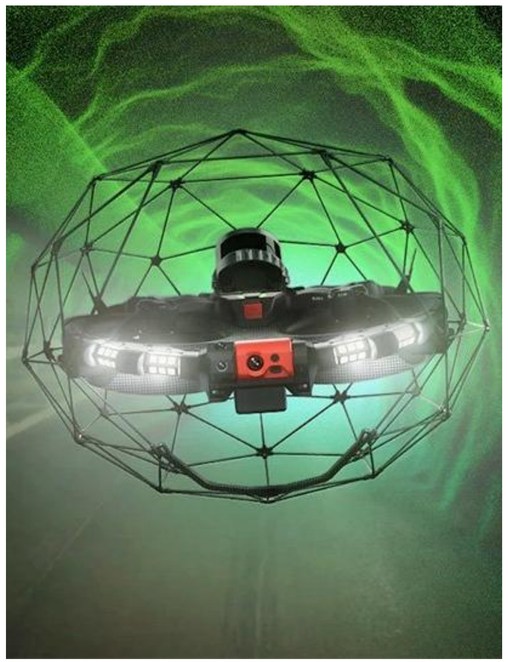
**Manual Inspection**
- High cost and setup
- Safety concerns

**Drones**
- Require open space
- Limited in confined environments

When access is the limiting factor,
then the question is which type of robot

# Robots in the Built Environment

## Aerial Drones



Require open space

Limited in confined environments

## Quadrupeds


Mobility over uneven terrain

Stair climbing

Size constraints in tight spaces

## Tracked Robots

High stability on flat surfaces

Poor traction over debris

Slow movement

## Wheeled Robots

Energy efficient

Ability to traverse over rough terrain

Limited flexibility in tight geometries

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# Matching Robots to Use Cases

## Large, Open Spaces

- Quadrupeds
- Drones

## Confined, Hard-to-access Spaces

- Tracked Robots
- Wheeled Robots

## Constrained, Unpredictable Spaces

- Small Robots

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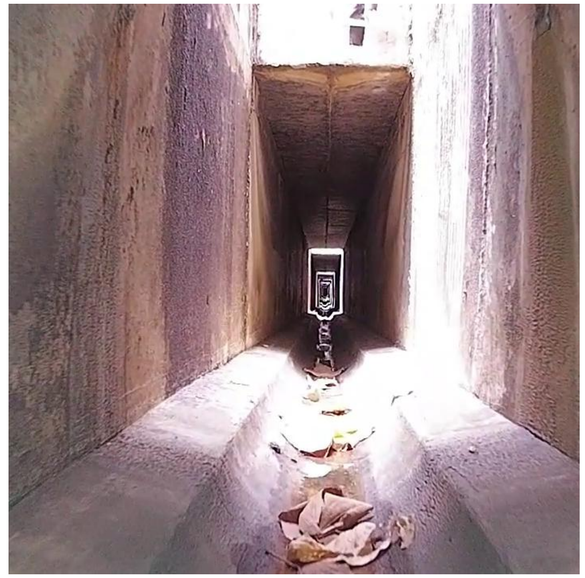
# The Gap

Robots for very constrained, messy areas

Blind spots persist because there are many obstacles

Up-close shots from multiple angles is challenging to collect



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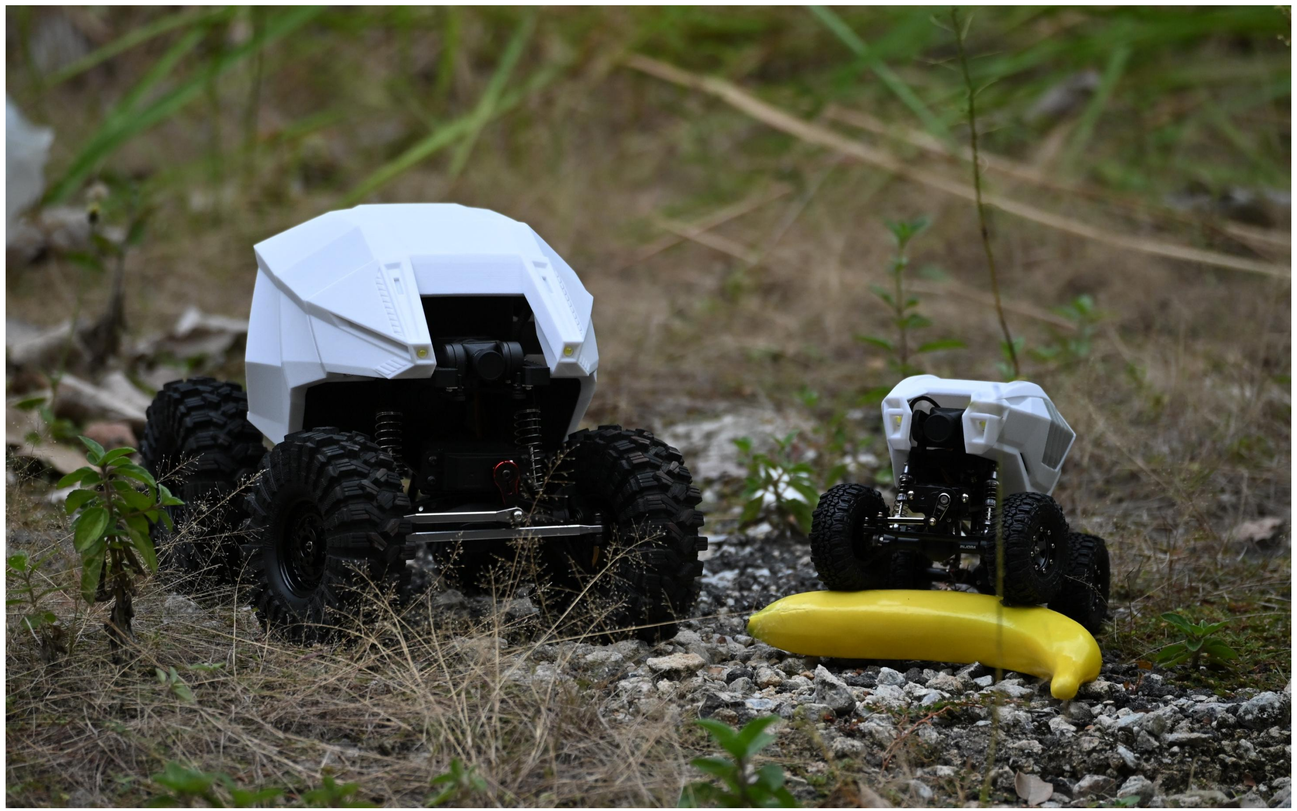
# The NIMBLER Platform

Robotic inspection platform

Designed for tight, inaccessible environments

Enables access where humans and drones cannot



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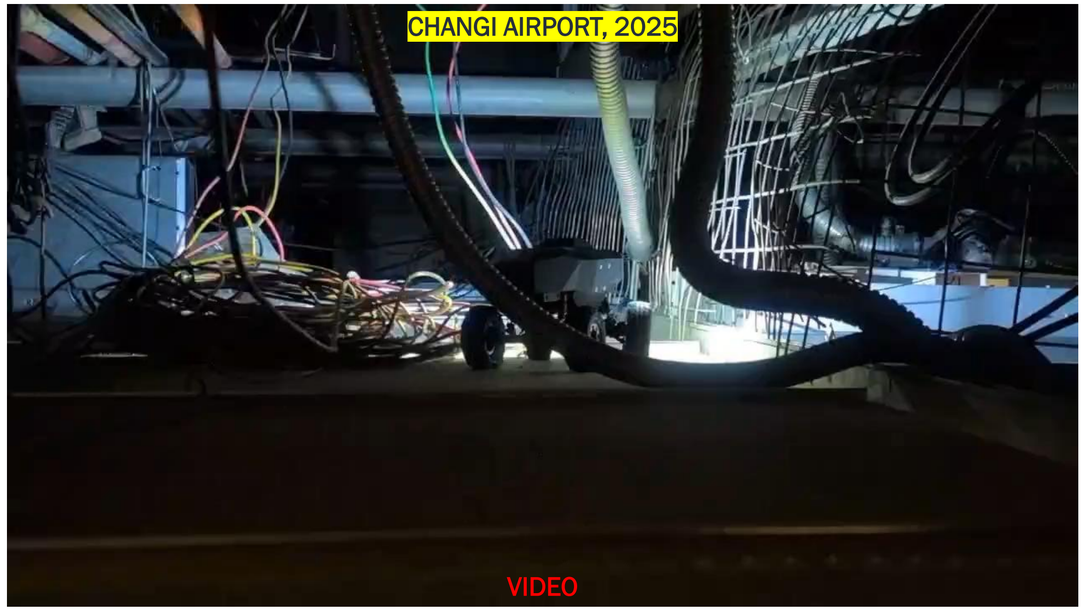
# Core Capabilities

Small and light

Navigates tight clearances and sharp turns

Handles uneven and debris-filled terrain





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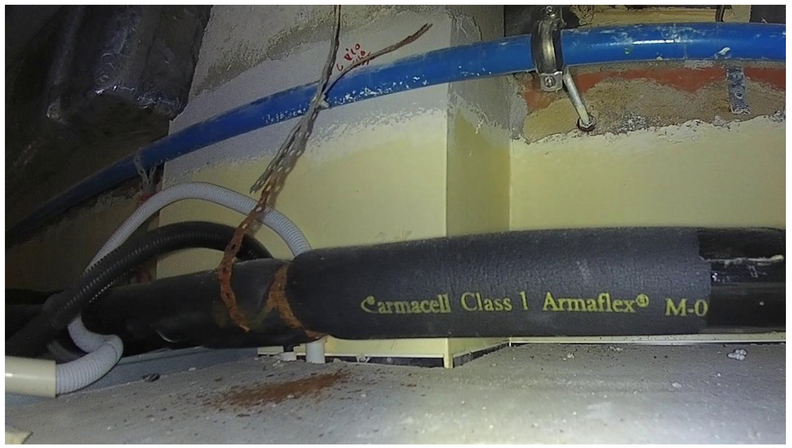
# Inspection Capabilities

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# Inspection Capabilities

1080p close-range imaging

Issues detected

- Cracks
- Corrosion
- Water ingress
- Efflorescence
- Vegetation
- Material & concrete degradation
- Excess material & debris
- Animal carcass


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# A Shift in Inspection

One-time Inspection

Limited Access

Snapshot In Time

Repeatable Deployment

Complete Coverage

Data Over Time


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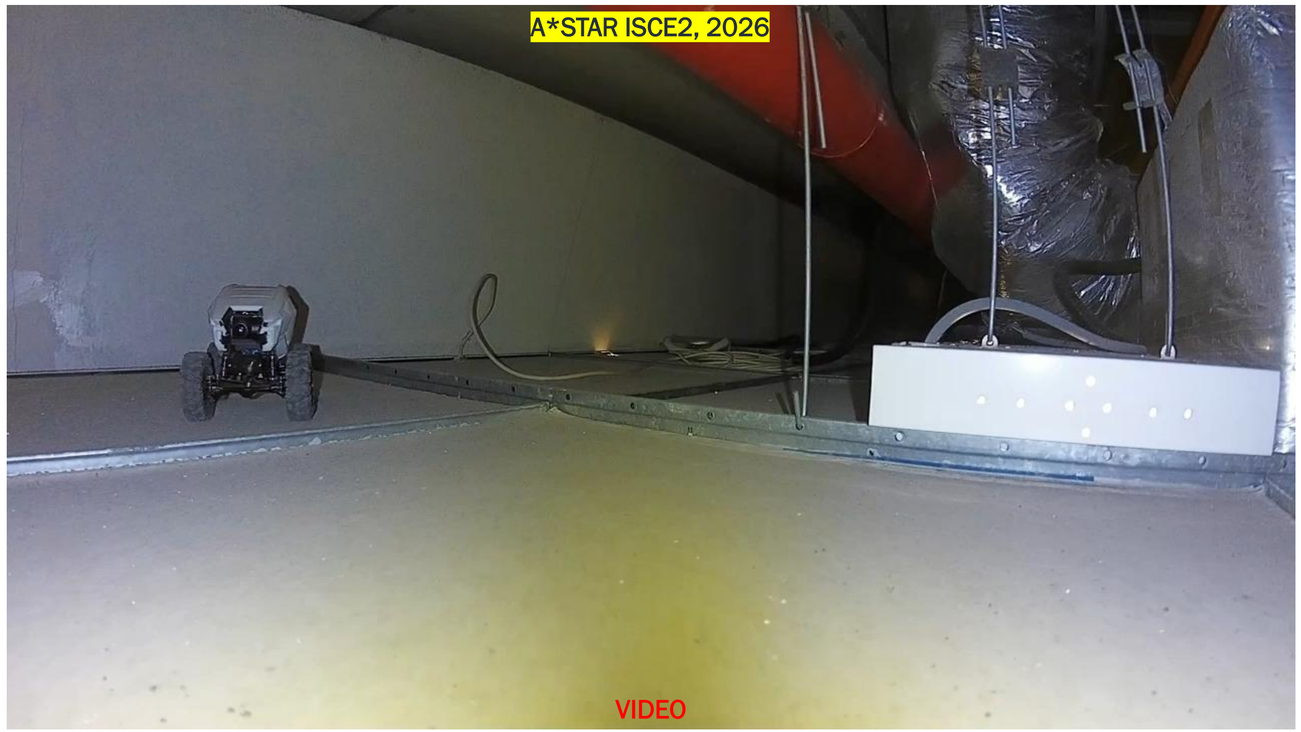
# Inspection as a Dataset

Consistent inspection paths

Comparable results over time

Trend and lifecycle analysis

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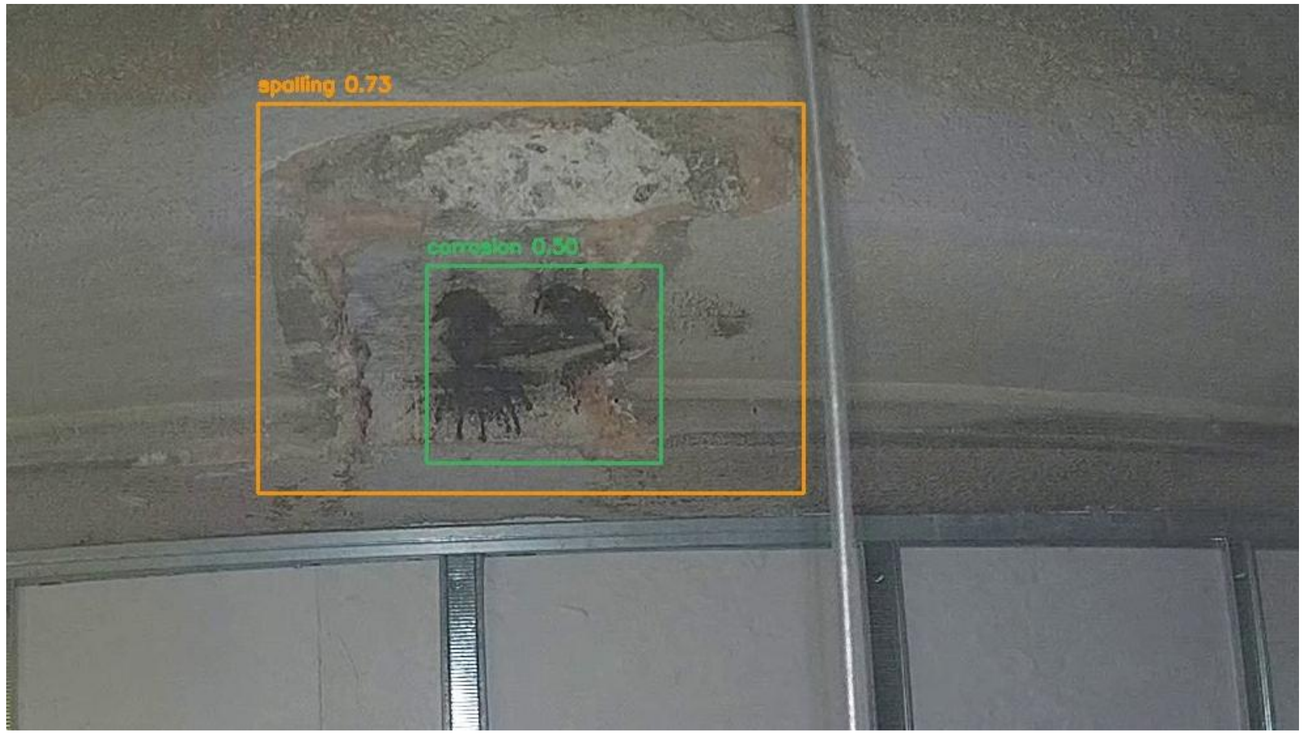
# AI-assisted Inspection

Highlights anomalies in real time

Improves consistency

Reduces oversight risk

Reduces fatigue

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# Why It Matters

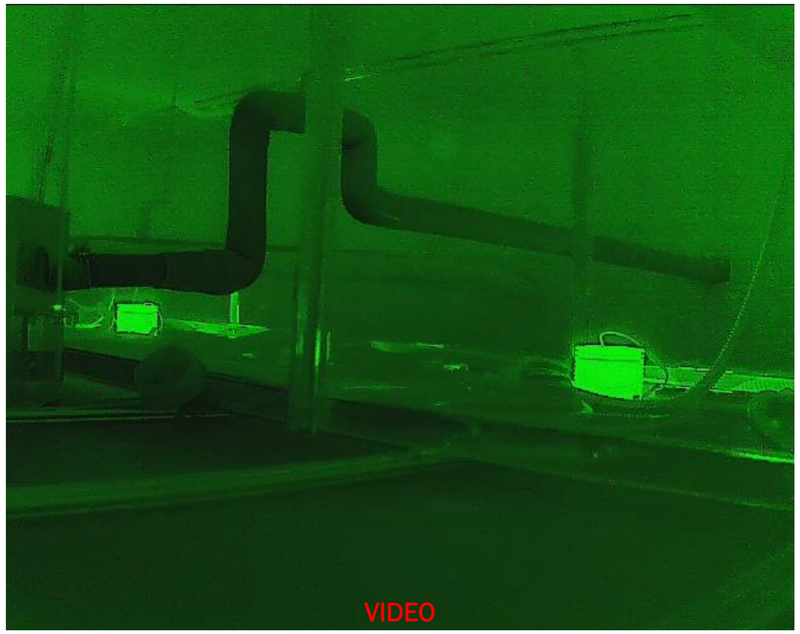
Dense infrastructure networks

Tight service environments

Incomplete or outdated records

Enables verification against BIM

Reduces need for disruptive access





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# Deploying Robots for Site Data Collection

Define inspection objective (safety, compliance, condition)

Select robot based on environment constraints

Plan inspection path and access points

Capture consistent visual and spatial data

Integrate outputs into inspection workflows

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# Data Collected

High-resolution imagery

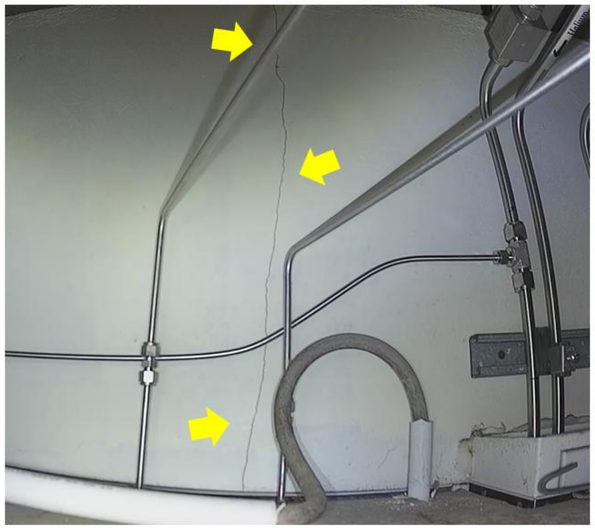
Video inspection logs

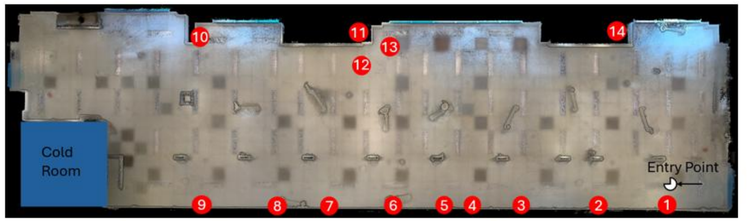
Defect tagging and annotations

Time-series comparison datasets

INCOMPLETE WITHOUT ORAL ELABORATION

## Level 2 Room 02-14
## Defect 4 | S0138.mp4, 0:01:00






Crack formed alongside the wall



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# The Future of Robotic Inspection

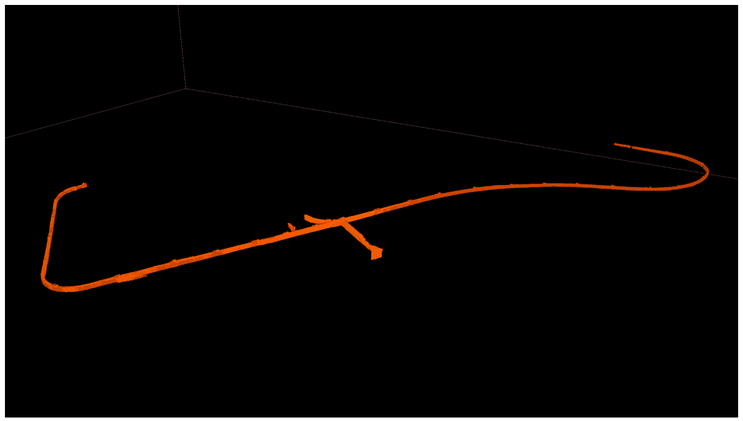
Sophisticated tech going into more constrained areas

Increased autonomy in navigation

Integration with digital twins and BIM

Predictive maintenance using historical datasets

Continuous, rather than periodic, inspection models

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# From reactive inspection to proactive asset management

1. Inspection gaps are access problems
2. Constrained spaces are the last blind spot
3. Access enables complete and defensible inspection

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# Deploying Robots

Start with pilot on high-risk, low-access assets

Define KPIs: coverage, safety hours saved, defect yield

Integrate with existing inspection standards (BCA, JTC, LTA, PUB)

Scale to routine, repeatable programs

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# THANK YOU

QUESTIONS?

THOUGHTS?

I'M AVAILABLE!

SEND AN EMAIL TO **GABRIEL** AT
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