H3 Dynamics

Shaun Koo

Chief Technology Officer

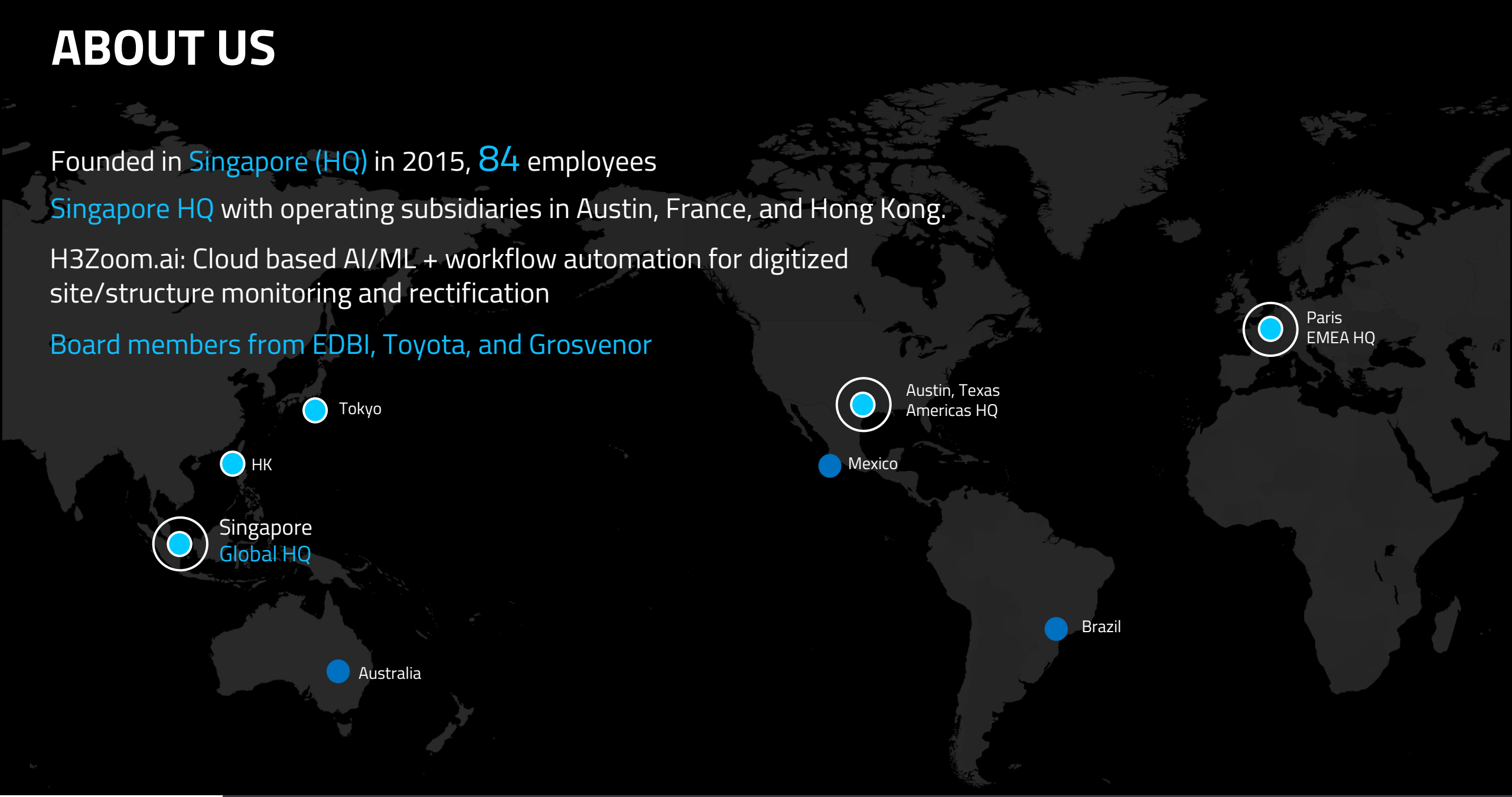
ABOUT US

Founded in Singapore (HQ) in 2015, 84 employees

Singapore HQ with operating subsidiaries in Austin, France, and Hong Kong.

H3Zoom.ai: Cloud based AI/ML + workflow automation for digitized site/structure monitoring and rectification

Board members from EDBI, Toyota, and Grosvenor



ABOUT US

Overview – H3Zoom.ai by H3Dynamics

Singapore (HQ)
France
United States

+ 900 assets inspected globally

+ 8 million SQM inspected area

Indoor & Outdoor inspection

SPARX · edbi · Audacy Ventures · ASCENT HYDROGEN FUND · GROSVENOR · ATEQ We test. You fly. · COPPER

Key Clientele

jtc Breaking New Ground · HOUSING & DEVELOPMENT BOARD · SMRT · SPgroup




areas shaded white belong to JTC

Safer, Faster, Better, Cheaper

	Traditional Inspection	H³Zoom by H³Dynamics
Time	4 – 8 weeks	> 70%-time savings
Safety	17 accidents (2018)	0% safety risks
Productivity	Low	> 80% productivity gains
Cost	$ 12-25 k / building	> 50% cost savings

Awards

TOP 100 ECCONNECT

#1 Prize at Echelon 2019

Top 100 APAC

Schneider Electric

Bold Idea Challenge 2018 APAC

TECHBLAZER AWARDS

SG:D TechBlazer Awards 2018 Final round Most Impactful Category

ICT AWARDS

Asean ICT Award 2018 Finalist Most Positive Impact

SLINGSHOT2019 POWERED BY STARTUP SG

Slingshot 2019 Qualifying Round

ACCOMPLISHMENTS

A pioneer and industry leader for digital Periodic Façade Inspections

> 900 buildings inspected globally

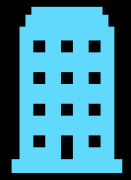
> 1,500 inspections completed world-wide

118 PFI inspections in progress

11 HDB town councils present and inspecting

35,000 Hours amount of data processed

5 countries of operations



254m highest building inspected

50 active customers and partnerships

ACCOMPLISHMENTS

Co-development and commercialization


THE STRAITS TIMES SINGAPORE | HOUSING

Inspector Drone can check out building facades

Tech system developed by JTC and H3 Zoom.AI could be making the rounds at industrial parks next year


THE STRAITS TIMES

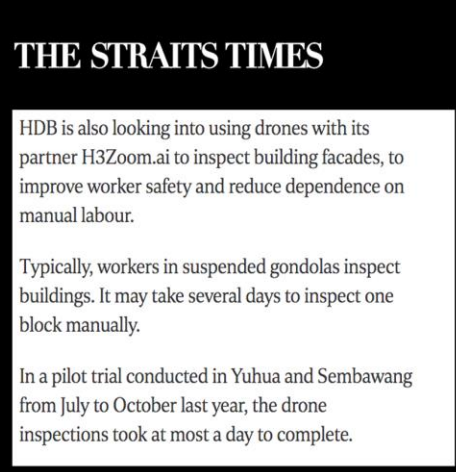
These concerns have led the Building and Construction Authority (BCA) to announce regulations for mandatory facade inspections of buildings, which might kick in next year.

Currently, most inspections are carried out by people, and could be costly, risky and tedious. The process of marking out defects, taking photographs and churning out a report could take up to four to six weeks, depending on the building's dimensions.

Most inspections are carried out by people, and could be costly, risky and tedious. The process of marking out defects, taking photographs and churning out a report could take up to four to six weeks, depending on the building's dimensions.

The H3 Zoom.AI Facade Inspector, which is operated by a two-man team, aims to slash the time taken to a few days using artificial intelligence to mark facade defects.

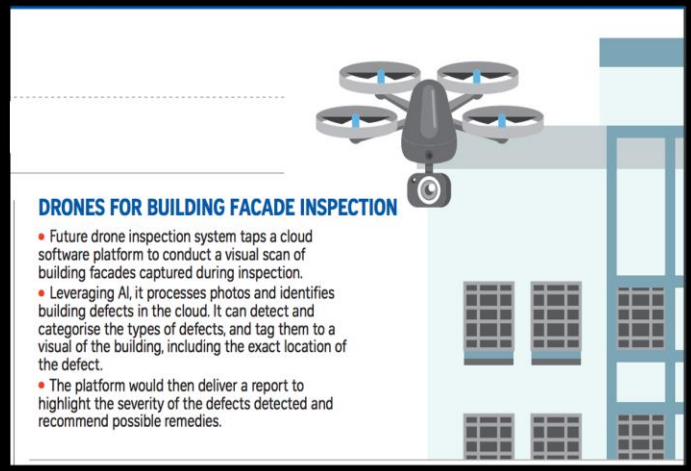
Preferred vendor for town council deployment


THE STRAITS TIMES

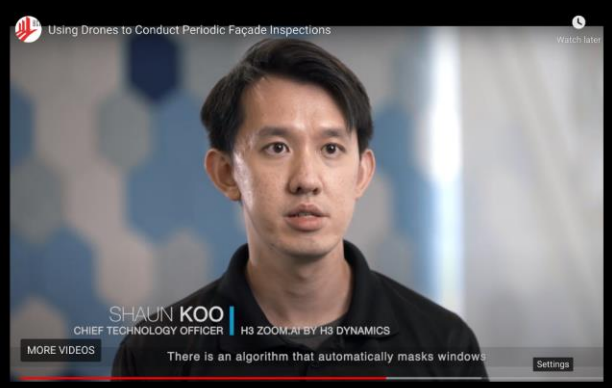
HDB is also looking into using drones with its partner H3Zoom.ai to inspect building facades, to improve worker safety and reduce dependence on manual labour.

Typically, workers in suspended gondolas inspect buildings. It may take several days to inspect one block manually.

In a pilot trial conducted in Yuhua and Sembawang from July to October last year, the drone inspections took at most a day to complete.



Periodic Façade Inspection launch partner

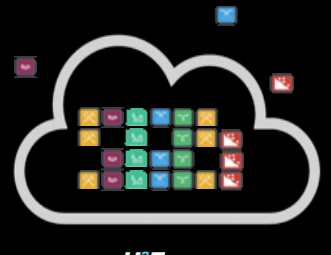


First international deployment in high-end residence

PROBLEM STATEMENT

Buildings represent 39% of global greenhouse gas emissions

Data acquisition >> one platform, multiple data acquisition methods; diversifying sensor acquisition methods



CLIENT / END-USER

- Facilities managers
- Asset owners
- Certification bodies
- Gov agencies
- Civil engineering firms
- Private equity
- Insurance companies

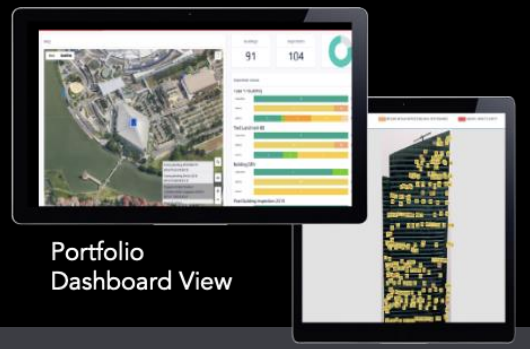
1 DATA ACQUISITION

Simple upload

2 AUTONOMOUS DATA PROCESSING

3 INTELLIGENT INSIGHTS

4 RECTIFICATION ACTION



PROCESS OF APPLYING THERMAL ANALYSIS

1

RGB IMAGE OF BUILDING FACADE TAKEN BY DRONE AT NIGHT

2

THERMAL IMAGE OF BUILDING FACADE IS ALSO TAKEN AT THE SAME TIME WITH THE RGB IMAGE

NO INTEREPRETATION

ONLY VISUAL CUES

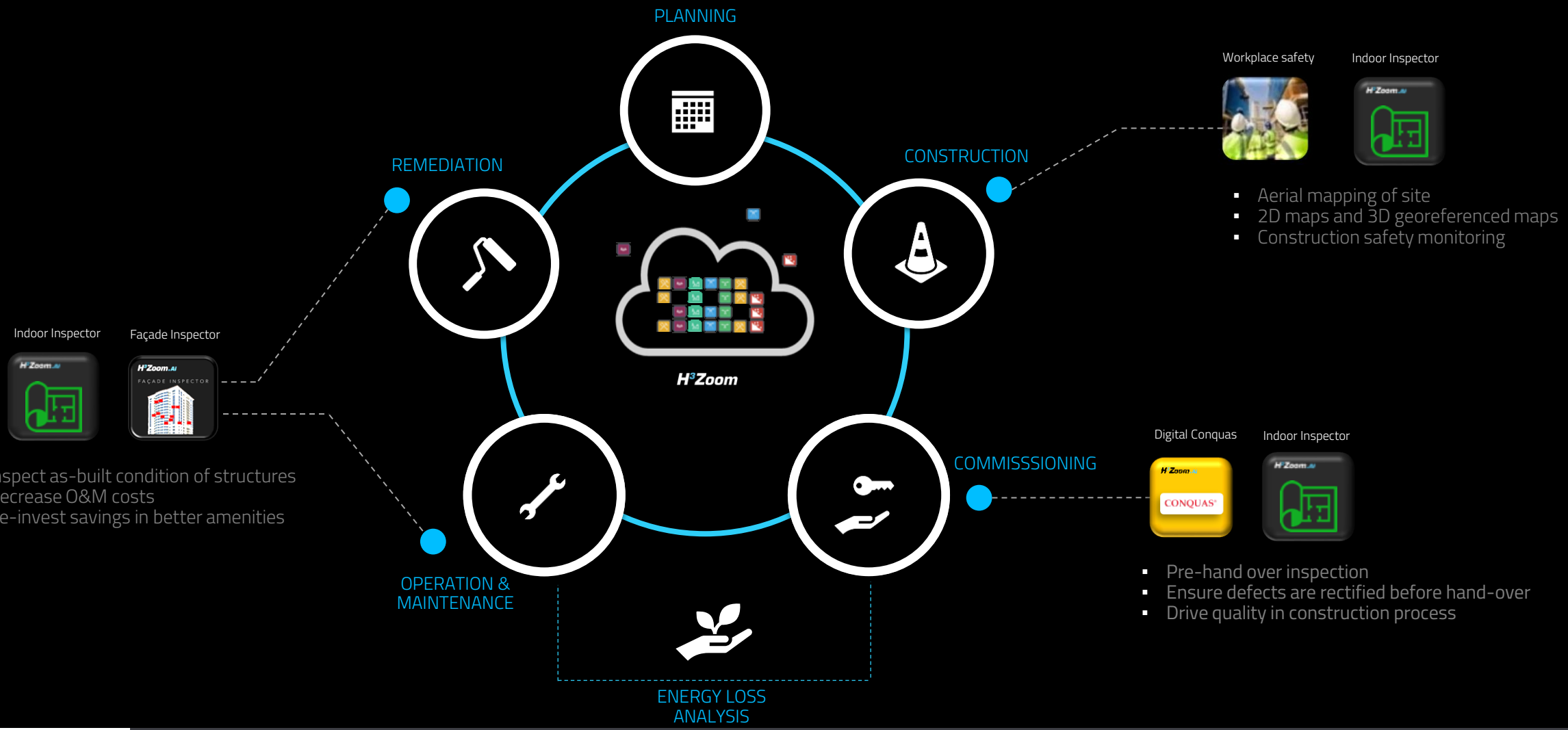
3

THERMAL ANALYSIS APPLIED TO INTERPRETING THERMAL IMAGE WITH LOCATION OF AREA WITH POTENTIAL HIGH ENERGY LOSS

WHAT ARE THE BENEFITS?

SAFER WORKPLACE	Our solution improves safety by reducing work-at-height incidents through automated drone inspections that can reach elevated and hard to access areas.
FASTER INSPECTIONS	Accelerate the building inspection process by over 70%. Automated drone scans and machine-learning for quicker inspection turn-around times.
LOWER COSTS	Reduction of labor and equipment costs by over 50%. Achieve cost-savings throughout the building lifecycle.
HIGH ACCURACY	Reduce human errors during building condition assessments through image analytics, digital workflows, documentation, and inspection visibility.
HIGHLY SCALABLE	Scale your facility management and operational processes through actionable insights. Access the platform through web and mobile everywhere and anytime.
SUSTAINABLE	Enabler of energy efficiency and demand flexibility in buildings. These “smart” buildings benefit from advanced sensing and controls, systems integration, data analytics and energy optimization to actively reduce energy use and demand while also improving occupant comfort, health, productivity and facility resilience.

2022 - Building & construction: a single platform offering to maximise the life cycle value of assets



Façade Inspector – how it works

completed by client, third party operations and equipment, or our own team in some cases

H³Zoom

1

DIGITIZED DATA ACQUISITION

- LIDAR
- IMAGES
- VIDEO
- OTHER

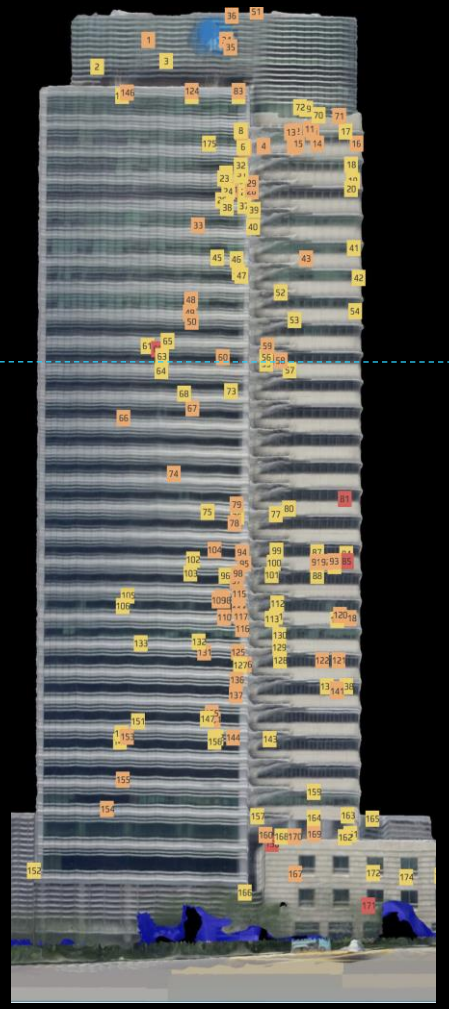
Simple upload

2

AUTONOMOUS DATA PROCESSING AND THERMAL ANALYSIS

3

INTELLIGENT INSIGHTS



POTENTIAL INTEGRATION WITH ENVISION

4

DECARBONIZATION

(LOCATION DATA)

(THERMAL ANALYTICS)

Envision digital

Connect with H3 Dynamics