EurACE 20 YEARS

THE EUROPEAN ALLIANCE OF COMPANIES FOR ENERGY EFFICIENCY IN BUILDINGS

BUSINESS DAY SEMINAR

Buildings 2050
Efficient, Decarbonised, Digital

16th May 2018, Brussels

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LET'S MEET LUNCH

EuroACE
THE EUROPEAN ALLIANCE OF COMPANIES FOR ENERGY EFFICIENCY IN BUILDINGS

Welcome, Tour de Table, Structure of Seminar

Adrian JOYCE, Secretary General, EuroACE

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Introduction to EuroACE and current EU policy developments

What will the EPBD & Smart Finance for Smart Buildings bring to business?

Céline CARRE, EuroACE President | Saint-Gobain

EuroACE Members (May 2018)

What is EuroACE?

- Europe's **leading companies** involved with the manufacture, distribution and installation of a variety of energy saving goods and services in buildings

- **Objective**
  To promote **energy efficiency in buildings** on the EU political and regulatory agenda, raise awareness, provide research data and communicate on available solutions and policies

- We believe that improving the energy efficiency of buildings is the most **cost-effective** method of
  - ✓Creating employment and securing economic recovery
  - ✓Achieving energy security
  - ✓Meeting carbon reduction targets
  - ✓Providing Europeans with comfortable & healthy homes

Cross-Sector Representation

1. Air Cooled Chiller
2. Heat Pump
3. Automated Roller Blind
4. Glazing
5. Regenerative Drive Elevator
6. Floor Insulation
7. Heating Controls: Room Thermostat
8. Automated Exterior Venetian Blind
9. Insulation
10. Insulated Wall System
11. Heating Controls: Radiator Thermostat
12. Heat Recovery Ventilation
13. Humidity Sensitive Air Inlets
14. Heat Pump
15. Automated Roller Blind
16. Humidity Controlled Extract Unit
17. Lighting
18. Sunspace
19. Automated Awning
20. Insulation
21. Sealants
22. Roof Window
23. Solar-control/ Low E-window Film
24. Air Tightness Membrane

Energy Performance of Buildings Directive (EPBD)

Process and Timeline

✓Trilogue Agreement (19th Dec 2017)

✓Plenary Vote (17th April 2018)

✓Council Approval (14th May 2018)

Next procedural steps

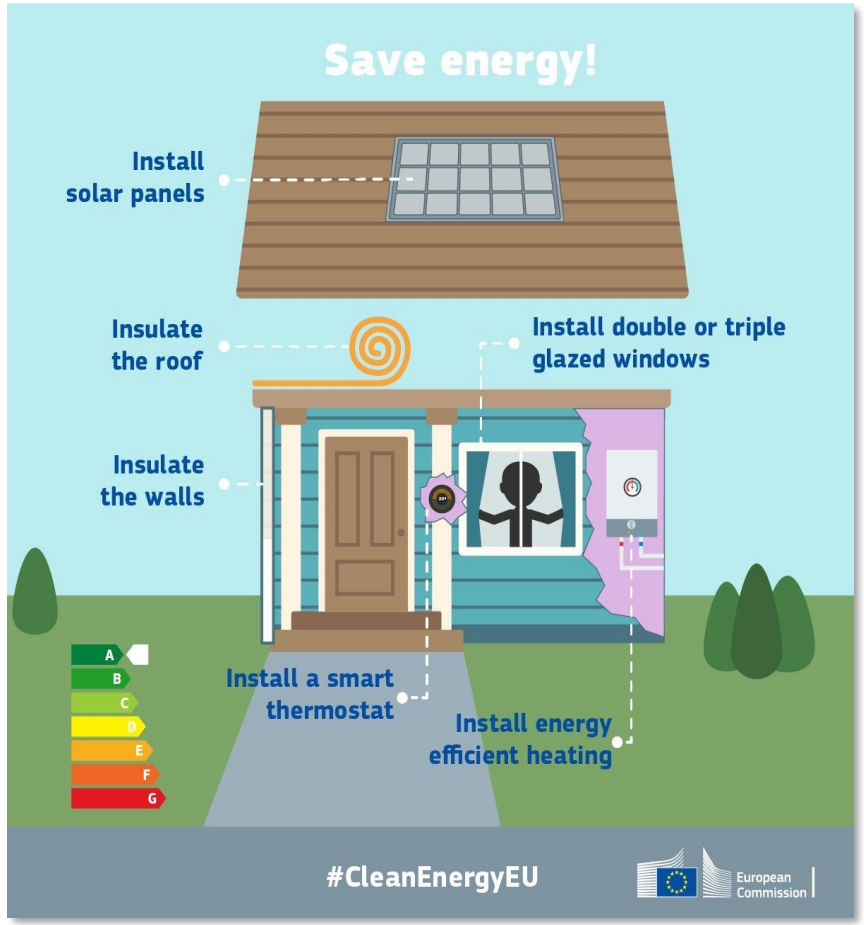
- Official Publication (May-June 2018?)
- Deadline for transposition (20 months, i.e. early 2020)
- Review (by 1st January 2026 latest)

What's next for us in EuroACE ?

- EuroACE Guidance Notes
- Crucial importance of transposition & implementation

EPBD (in short)

- ✓ 2050 ambition for buildings
- ✓ Impactful renovation strategies
  - Milestones 2030/2040, Indicators
  - Trigger Points
  - Building Renovation Passports
- ✓ Improved requirements for TBS/BACs
- ✓ Smart Readiness Indicator
- ✓ Annex 1: Efficiency First & RES



Smart Finance for Smart Buildings (in short)

Unlocking private financing for energy efficiency

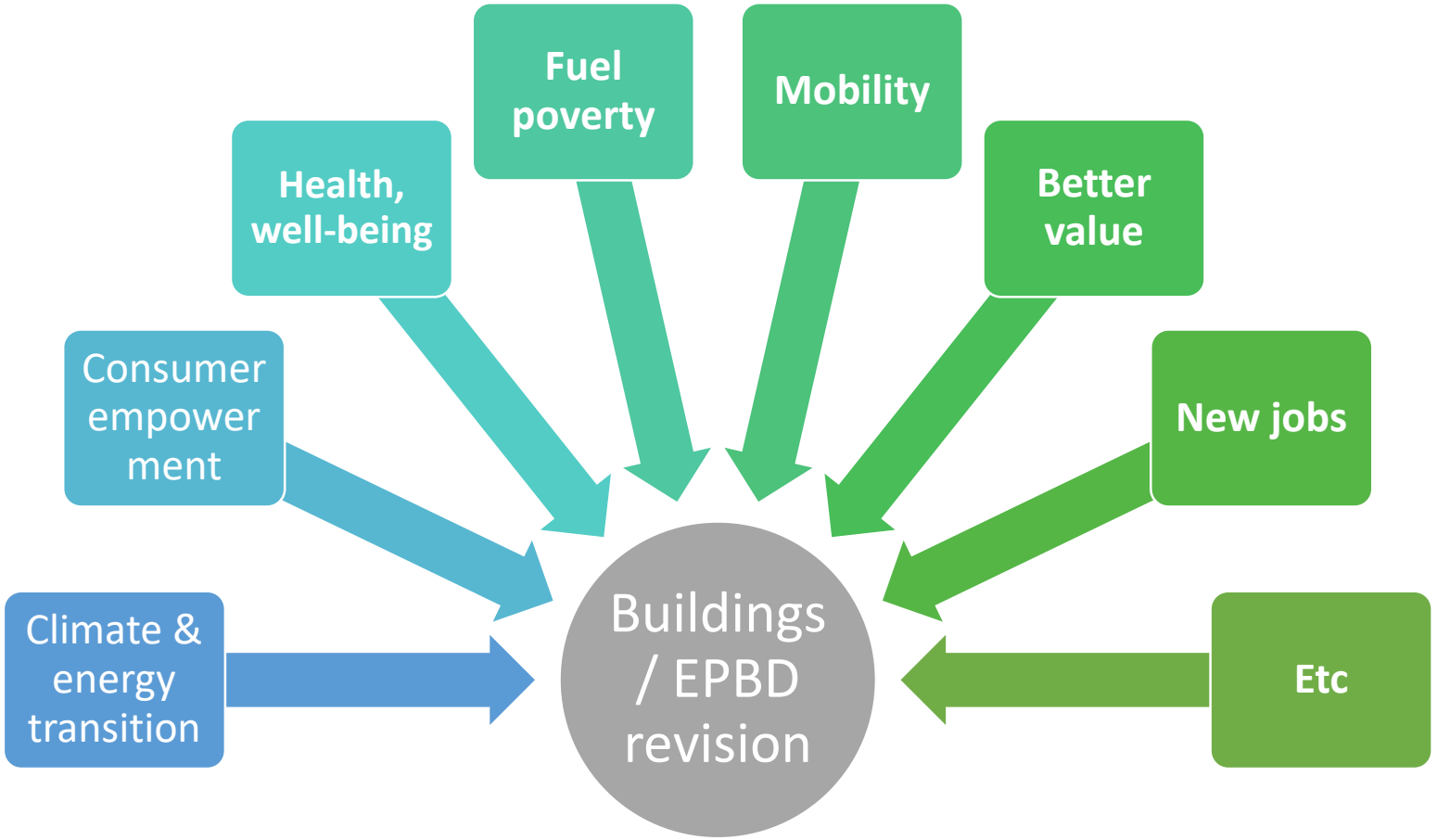
More effective use of public funds	Assistance and aggregation	De-risking
Deploying Financial Instruments and innovative business models to attract private finance	*Supporting the project pipeline at EU and local level*	*Understanding the risks and benefits for financiers and investors*

What's in it for us ?
Nice figures (1/3)

Table 8: Comparison of policy options

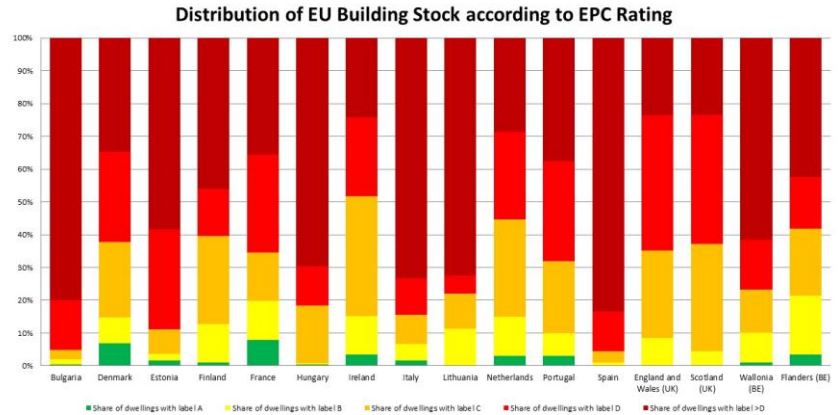
	Reference: No-change option	Option I: Enhanced implementation and further guidance	Option II: Enhanced implementation, including targeted amendments for strengthening of current provisions	Option III: Enhanced implementation towards further harmonization and higher ambition
Additional final energy savings in 2030	-	2 Mtoe	28 Mtoe	72 Mtoe
Additional associated construction activity in 2030	-	€2.15bn	€47.6bn (€1 – €4 bn mandated by the Option)	€101bn (€52 – €59 bn mandated by the Option)
Economic growth, incl. SMEs in 2030	-	€2.4bn - €10.1bn	€103.8bn - €143.8bn	€197bn - €280bn
Jobs retained/ created	-	9k	220k	500k
Energy poverty alleviation	-	20k – 120k households	515k - 3.2M households	1.5M to 8.3M households

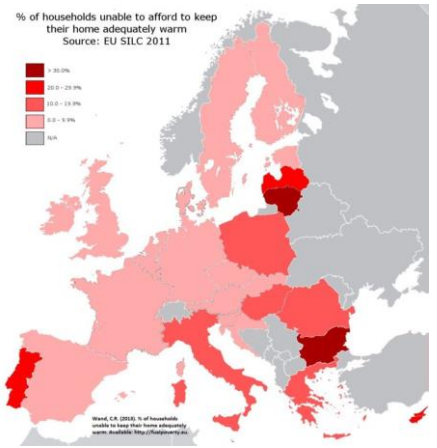
What's in it for us ? A good story (2/3)

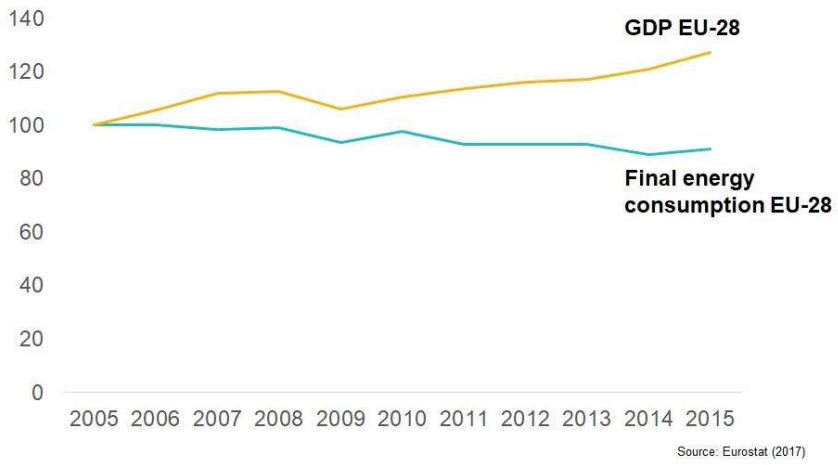


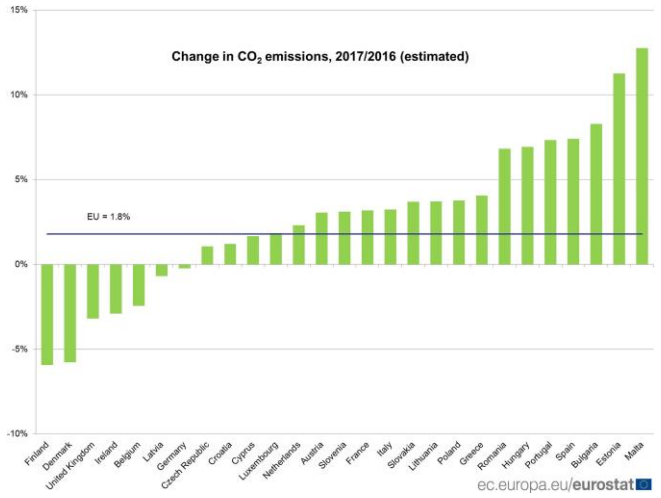
Buildings sector increasingly seen as key driver of the energy & climate transition, and the boost offerred by digitalisation can drive it faster

What's in it for us ? Huge opportunity (3/3)









EPBD gives us the renewed opportunity to bring the facts and the story at national level. The challenge is huge.

How to ensure desired impact ?

- **#1 Challenge ourselves, learn**
  - Nurture, adapt & revamp our story (relevance)
  - Understand impact and other drivers
  - Does EPBD meet consumers expectations ?

- **#2 Strengthen our community(ies)**
  - At corporate level
  - At EU level
  - At national level

- **#3 Anticipate**
  - EPBD not in isolation
  - Digitalisation as a key trend among others:
    - Urbanisation
    - Multilayered decision-making / complexity
    - Silver economy
    - Etc…

Openness
Relevance
Sharing

Out of
our
bubble

Look forward
&
prepare

Conclusion

The Buildings Directive will bring to business what business can give to it !

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Keynote 'TED Talk' Speech – Looking Beyond

How does digitalisation impact our sector, our economy and society? How does it impact energy performance of buildings, indoor environment, and users?

Nicos PEONIDES, Associate Director, Arup

© Arup

Digital transformation of the built environment

EuroACE – Seminar

16th May 2018 – Brussels

ARUP

These companies disrupted their respective markets

… it is naive to believe that the digital transformation will not affect the buildings industry

Key Technologies

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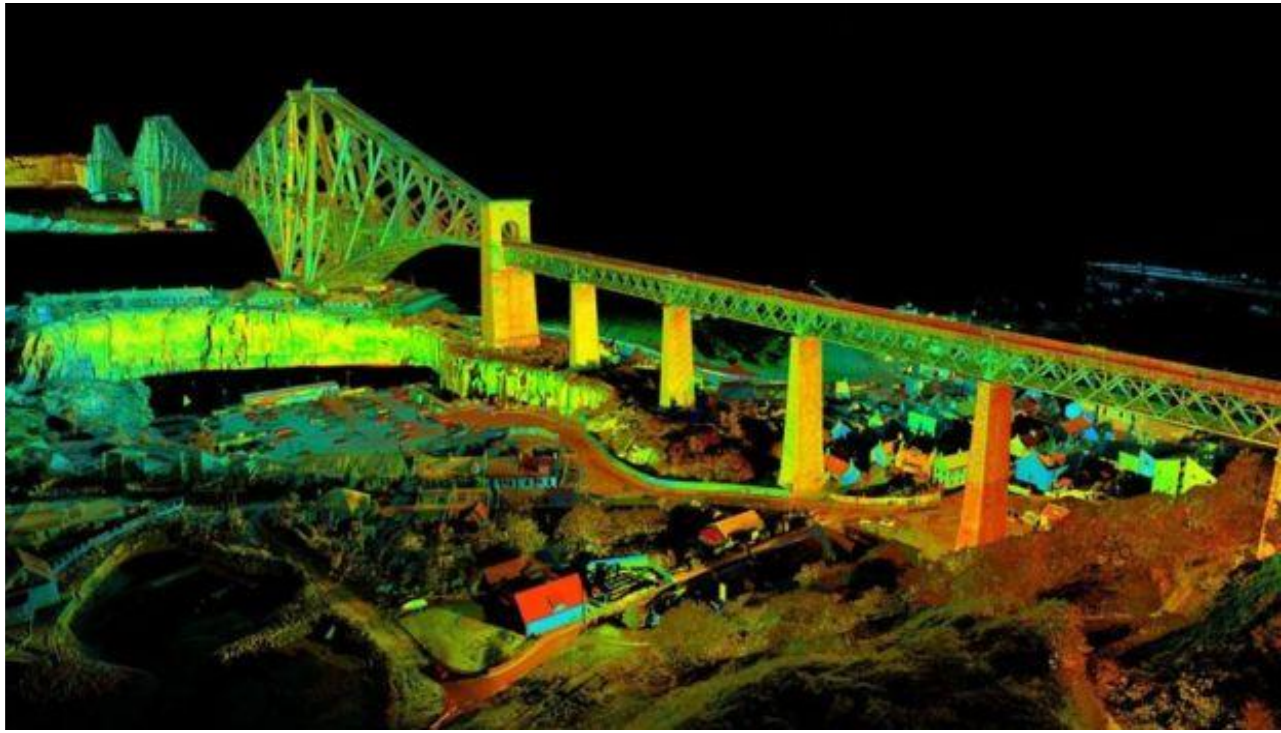
3D scans of existing structures



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Drones for inspection of buildings/ infrastructure

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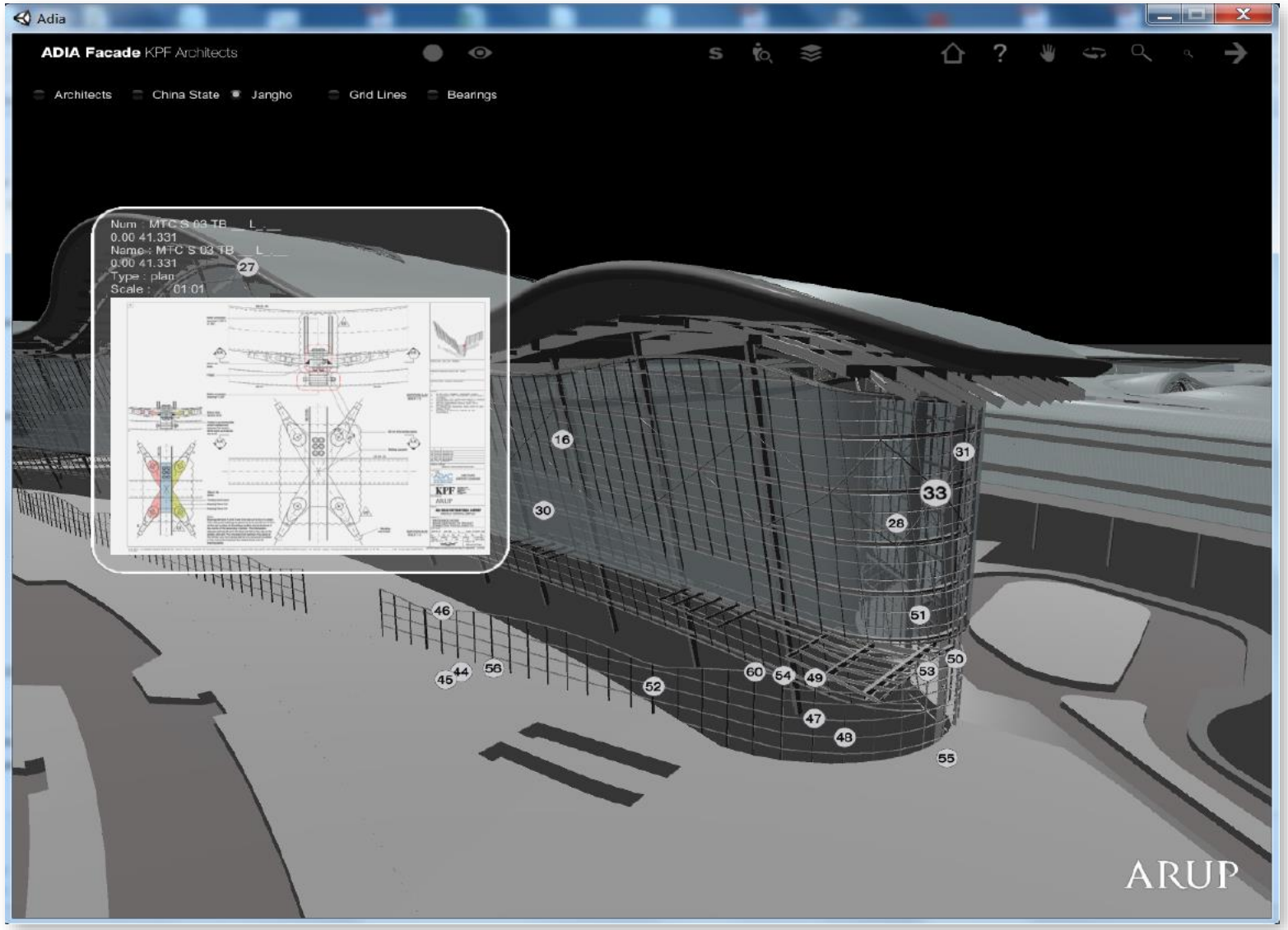
Visualisation / data representation

Arup Street

Locates details, sketches, specifications, etc. in a building.

Provides a viewer for clients.



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Visualisation / data representation

Impact of flooding

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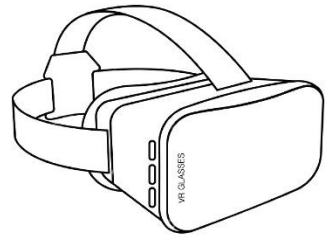
Visualisation
Virtual/Augmented Reality
(VR/AR)



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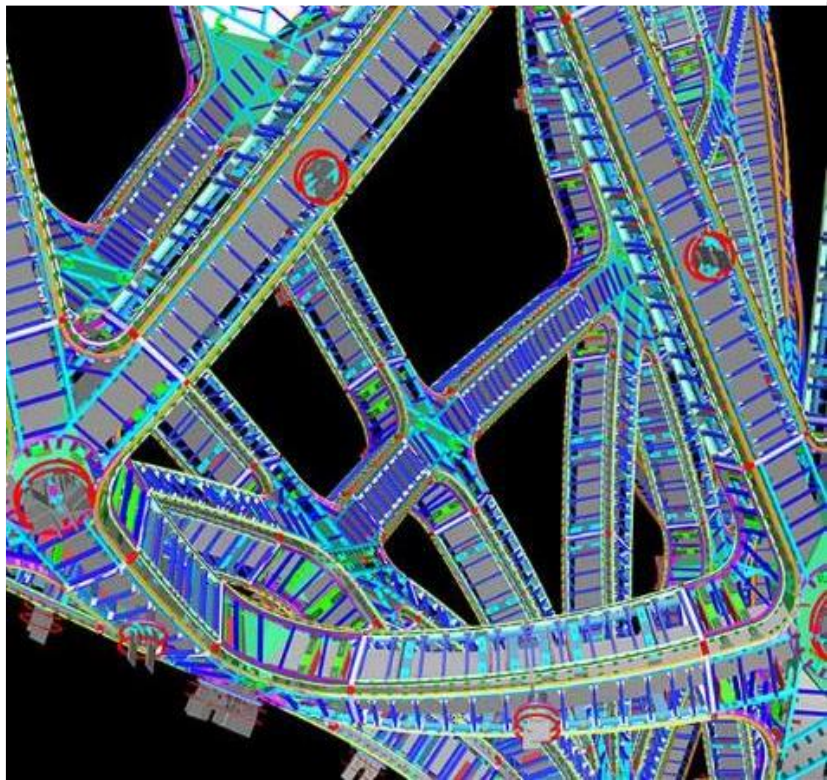
Visualisation + Auralisation

(SoundLab)

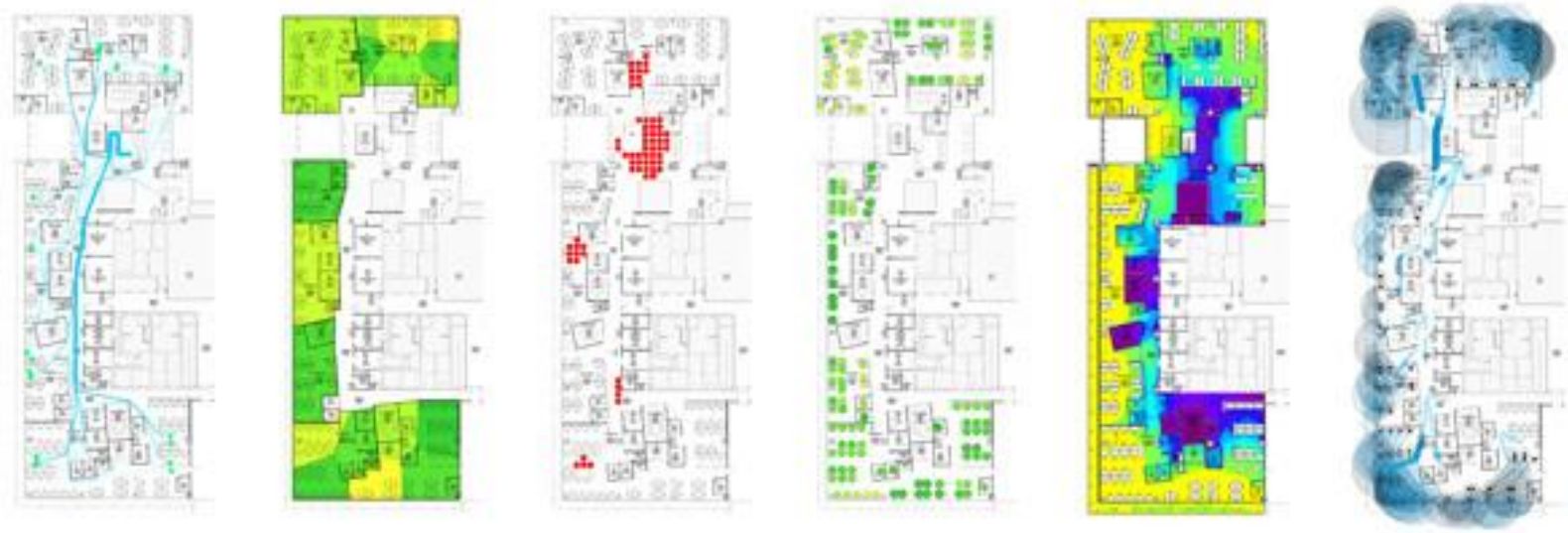
“Listening” to spaces before they are built

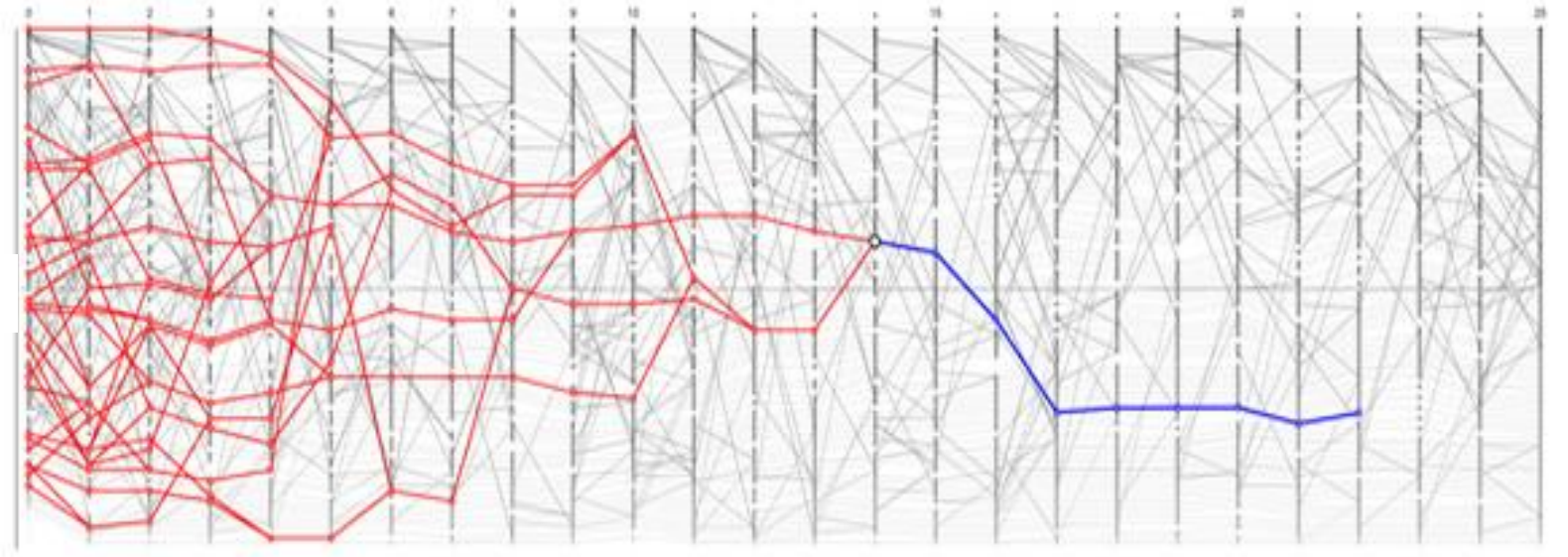
Fully parametric façade model



Generative/ iterative design of own offices

AUTODESK.





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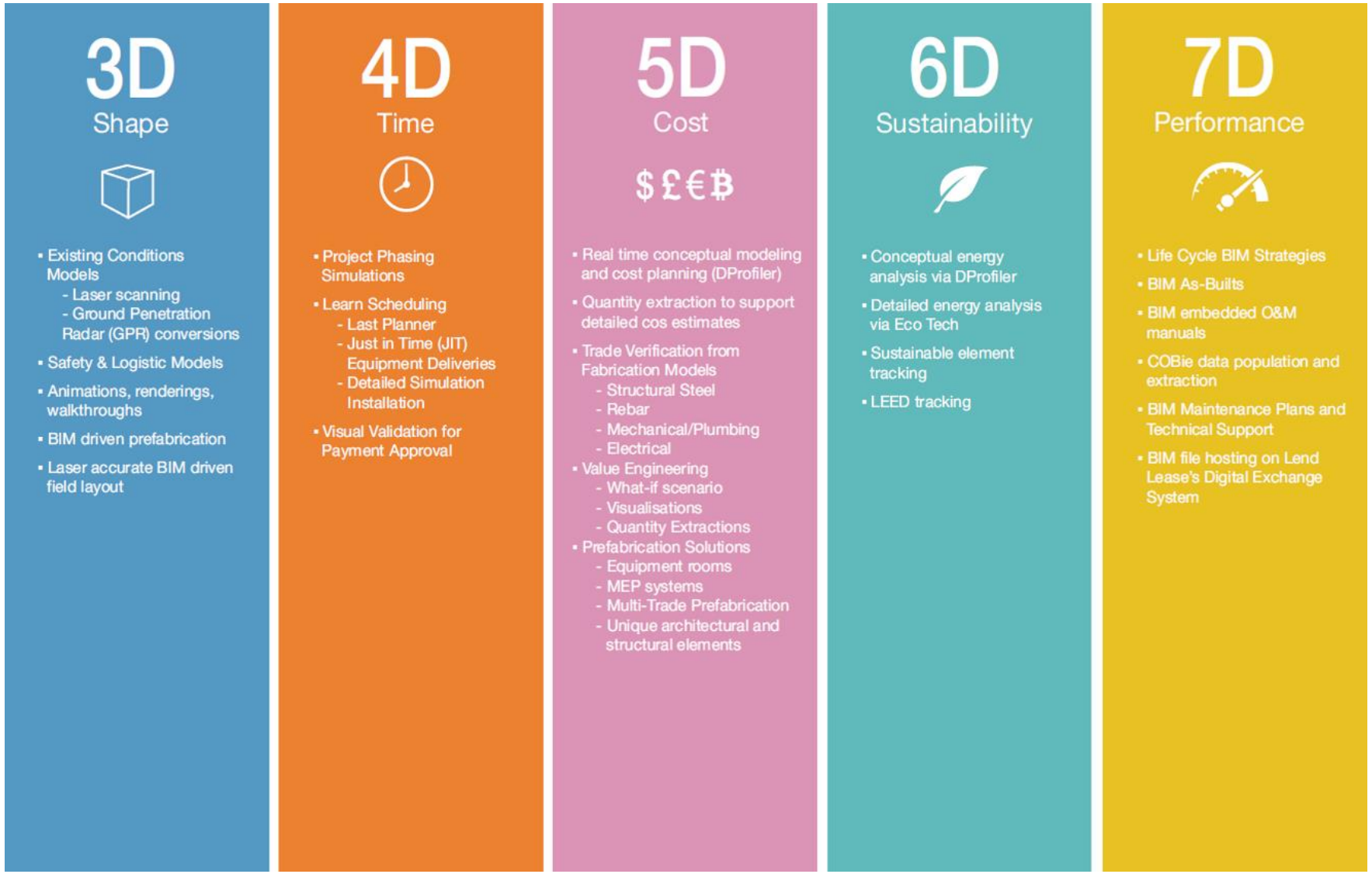
Levels of BIM Implementation



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Brick-laying robots

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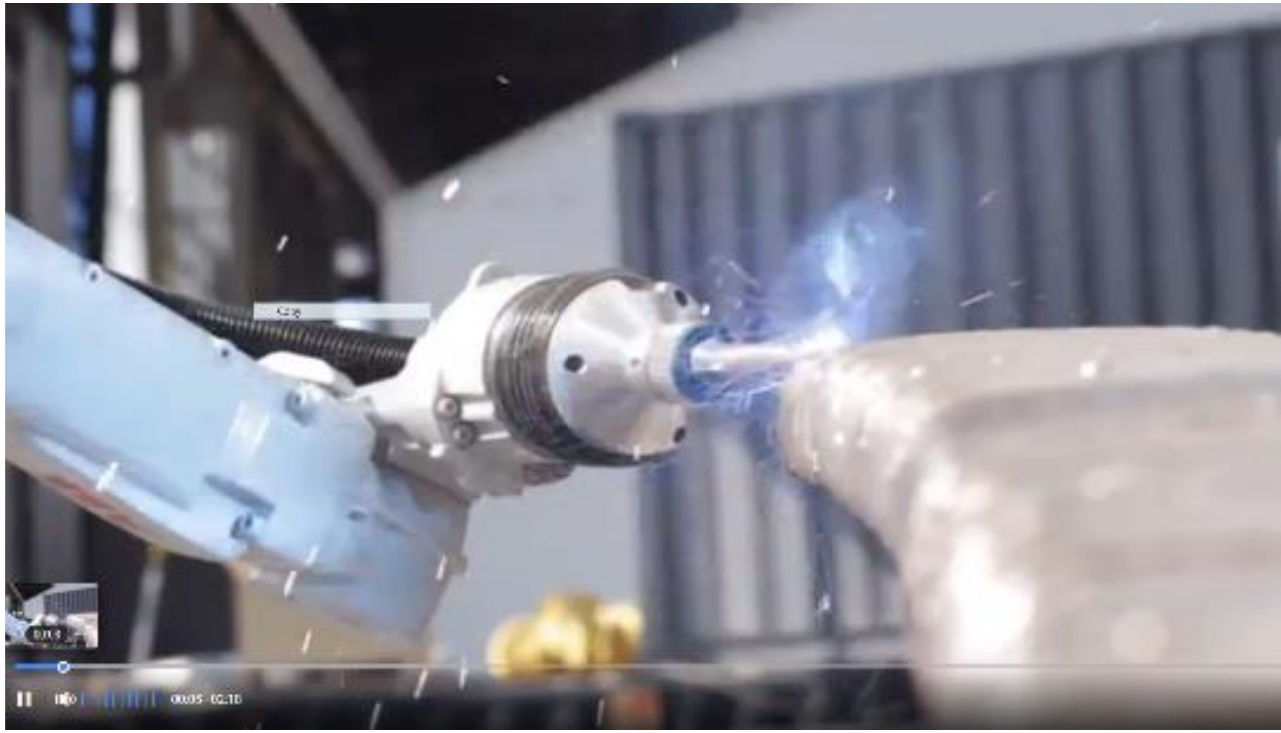
Dynamic
column casting via robots

3D-printed bridge



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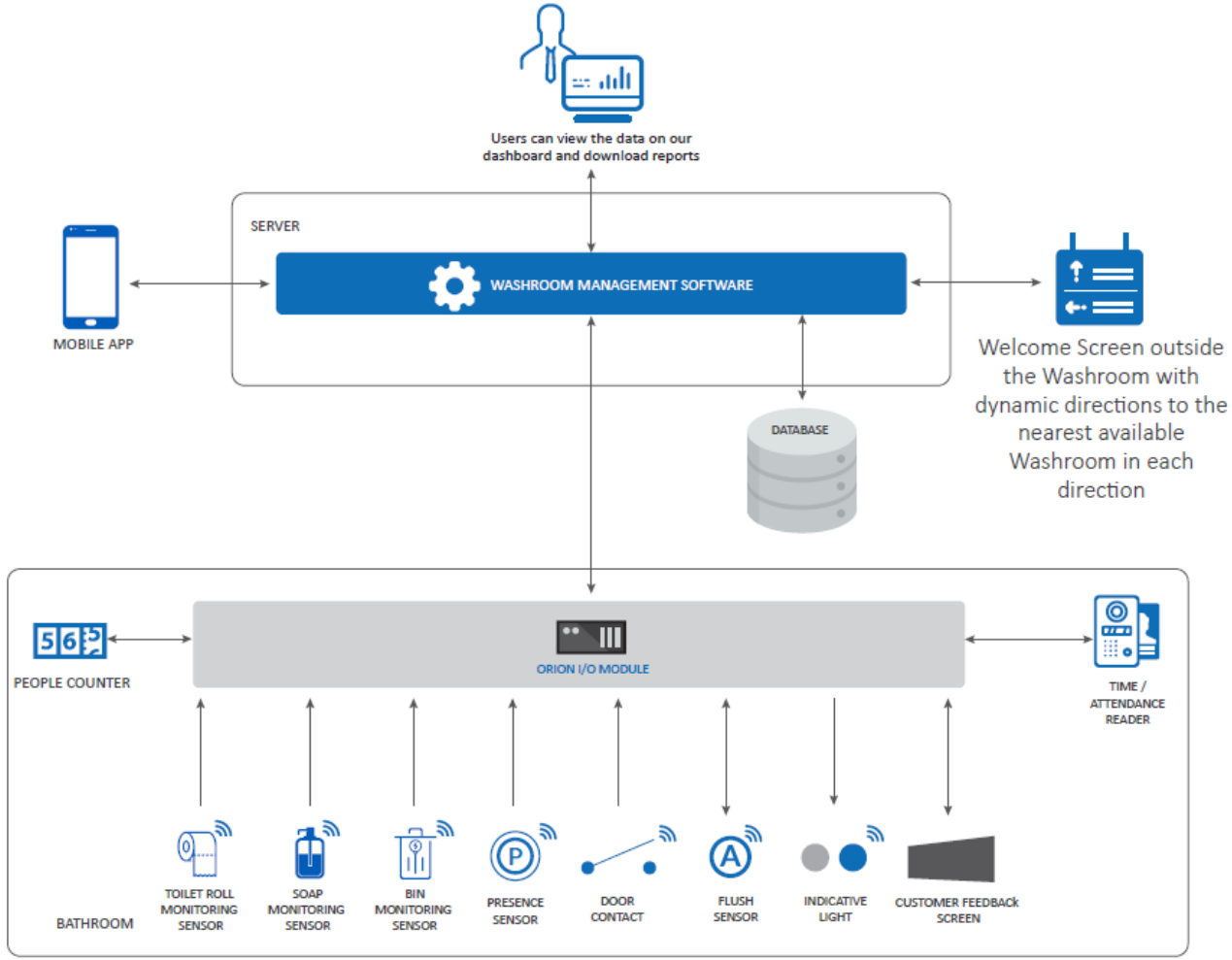
Data analytics, IoT and insight

Bridge monitoring systems

- Installing sensors in critical points of existing bridges
- Remotely read data
- Interpret data
- Evaluate need for repair (or not)

Internet of Things and Data Analytics

Washroom sensors



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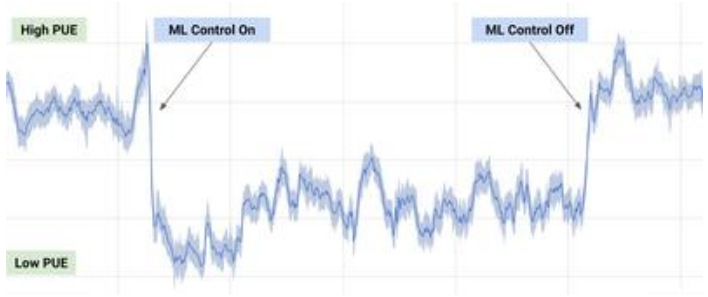
Artificial Intelligence (AI)
Machine Learning (ML)
Capture and predict trends
Predictive maintenance



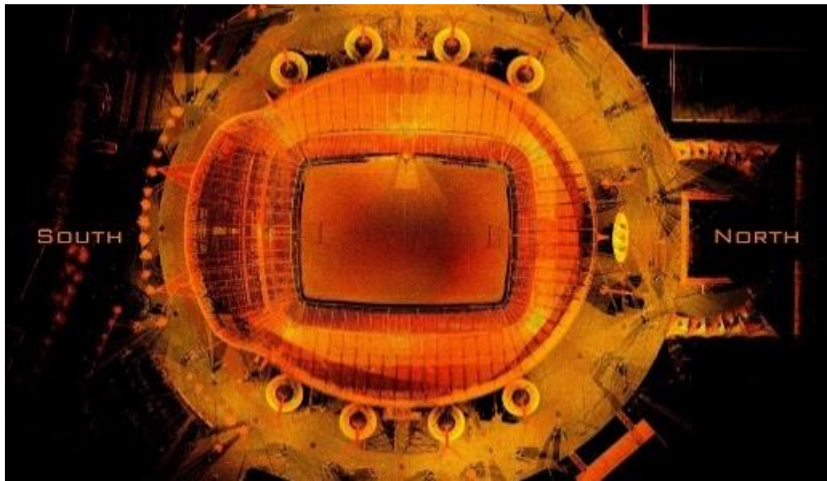
DeepMind AI reduces Google data center cooling bill by

40%

Digital Twin

Level 1:

Building accurate 3D Models



Digital Twin

Level 2:
Adding Design Data

For example:

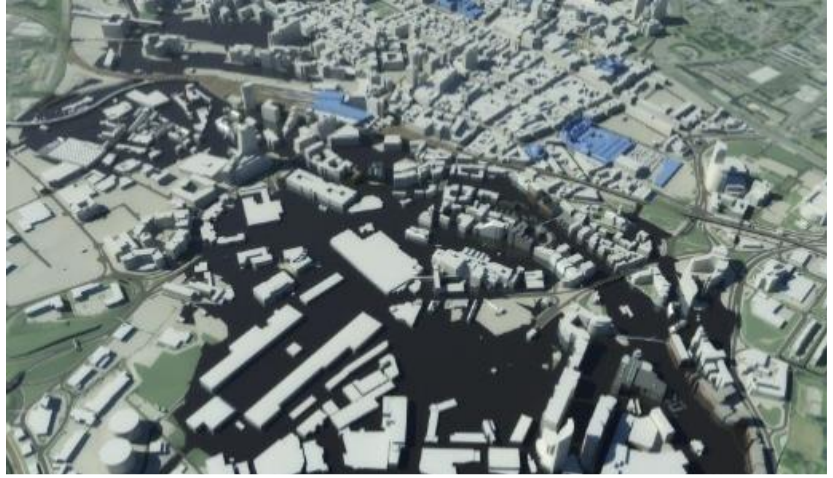
- Signage
- Lighting
- MEP
- Interiors
- Security

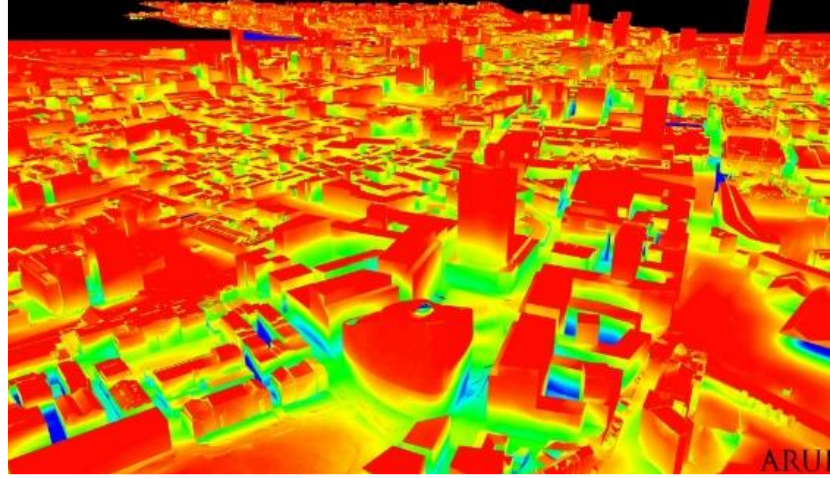
Digital Twin

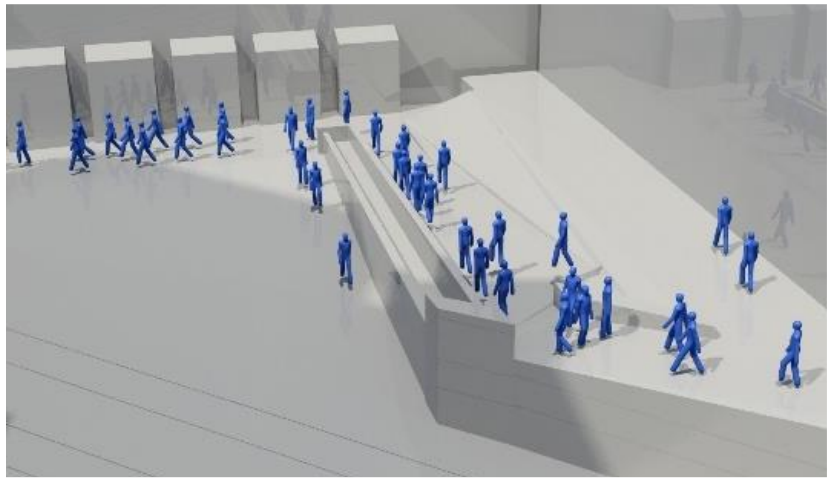
Level 3:
Adding Operational Data

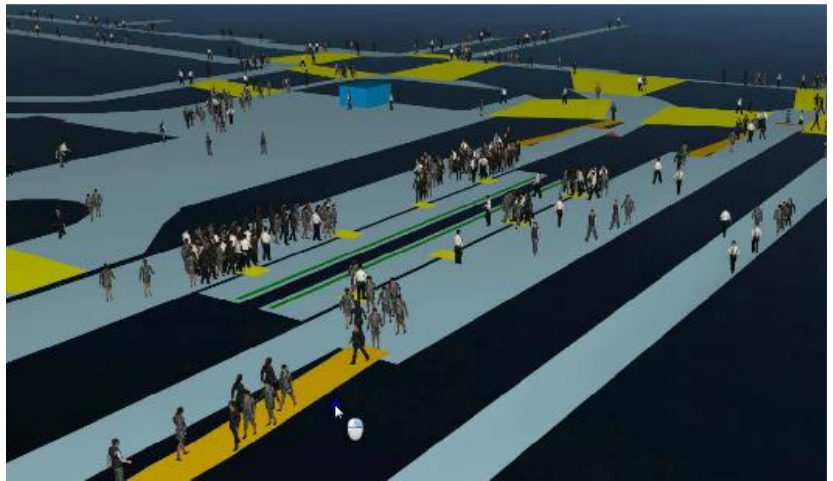
For example:

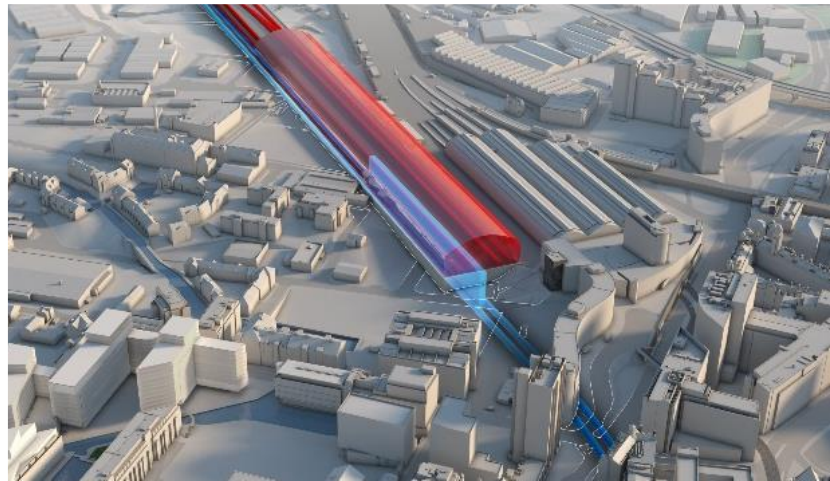
- Transport modelling
- Passenger flow patterns
- Lighting analysis
- Acoustics
- Baggage simulation
- Fire information
- Water and energy flows











A smart building…

Health & Wellbeing

Typical business
Operating costs

90%
Staff costs

9%
Rental costs

1%
Energy costs

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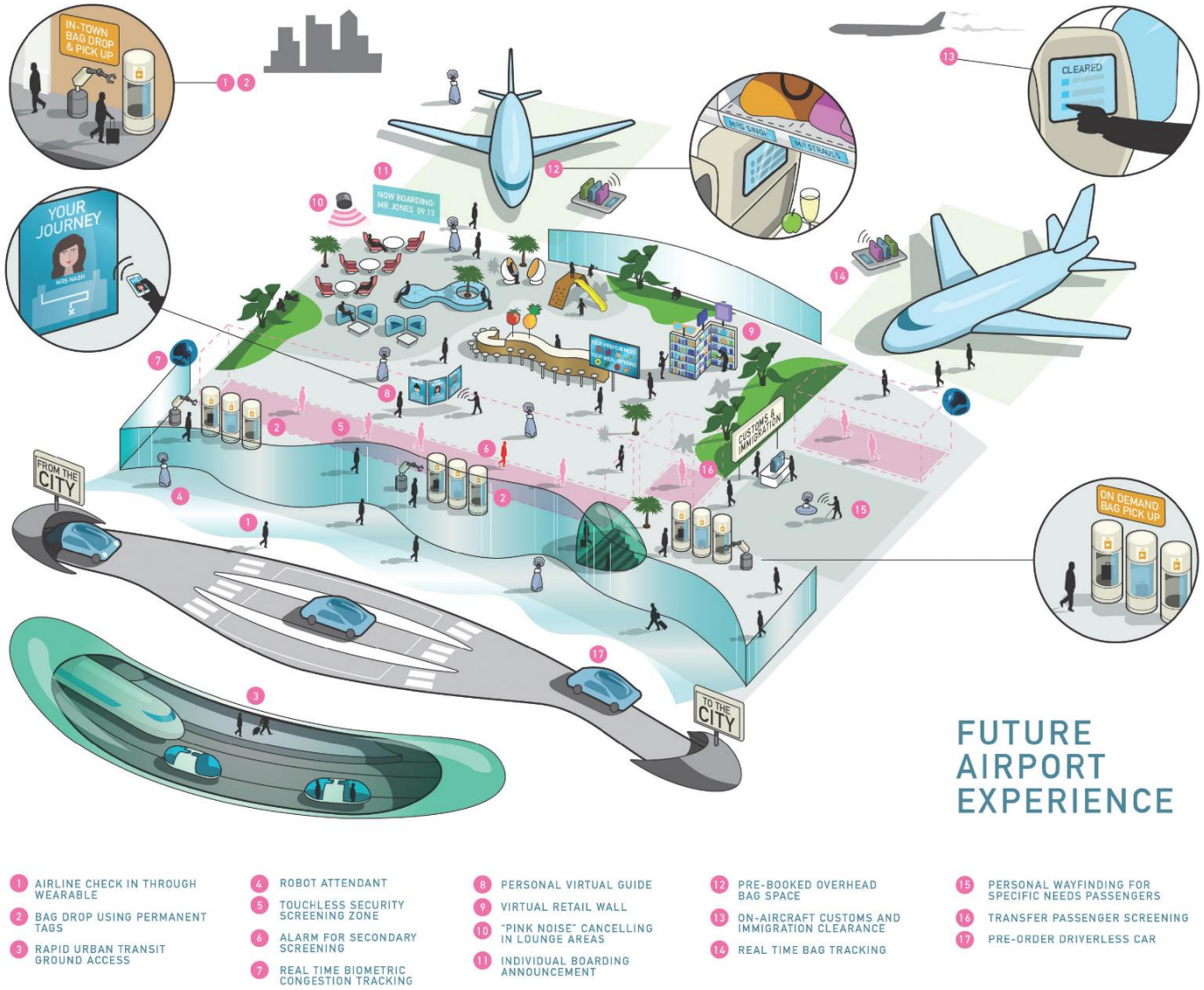
A truly smart building: Airport of the Future

- Seamless travel experience
- Meet or exceed safety, security and immigration regulations
- Reduce unwanted walking distance and time in queues
- Service a large variety of passenger types
- Optimise passenger journey within a reasonable cost model
- Be based on a ‘sustainable strategy’



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Challenges

Loss of jobs

Over-relying on machines

Data privacy

Cyber-security

Data overload

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Reactions & Inputs from Business Colleagues Debate

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Break-Out (parallel) Sessions

1. **Impact of digitalisation on decarbonising buildings (with Adrian JOYCE)**
2. **Impact of digitalisation on energy consumers and people (with Hélène SIBILEAU)**
3. **Impact of digitalisation on construction and renovation works (with Caterina NISSIM)**

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Reports from the break-outs

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Conclusions

Adrian JOYCE, Secretary General, EuroACE

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20th Anniversary Celebration

Le Bouche-à-Oreille,
Rue Félix Hap 11