



Prologue: Healthy People Healthy Planet (HP2)

Massively resourced China & USA dominate AI- do we **fight or flight**?

..or leverage HP2's **brains** not brawn

HP2 is creating a Healthier Built Environment through

- Leveraging smart data-rich **digital twins** for decarbonising space & mobility planning
- **Building confidence by empowering community driven co-creation**, not just collaboration
- **Accelerating Permitting**, streamline process & boost measurable productivity.
- **Creating low-risk processes but high economic impact procedures**
- **Changing attitudes of all stakeholders-not just preach to the converted!!!**

Together we can build a healthier future



More than a game (image by Minecraft)



1: What's the problem?

Planning System Inefficiencies:

- **Only 2%** of planning applications use AI or data-driven decision-making
- **66%** of planning authorities do not have an up to date Adopted Plan
- **£150,000** average cost for councils to process major applications
- **£16 bn** pa. financial cost of Planning Delays

Health disparities

- **£54.7m/day** to treat air pollution-related disease
- **£2.2 bn/year** to treat urban heat stress due to lack of green spaces.

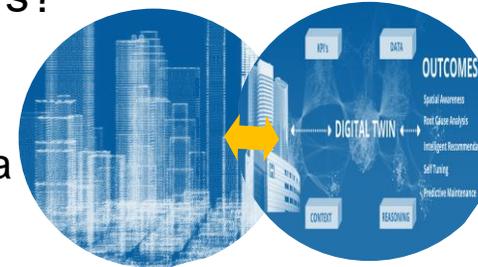
Housing inequalities

- **£4m/day** to house London's homeless
- **£50.6m/day** social care cost of poor housing
- **£10 bn/year** economic loss from poor energy efficiency in buildings.



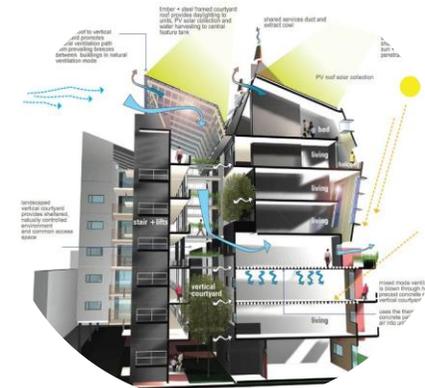
2 Co-creation: Turning NIMBY's into YIMBY's or at least YIFY's?

Digital Twin model environmental, socio-economic, energy & health data



Gen AI synthesises options leading to rapid optimisation

Building Layouts-optimised for health & sustainability benefits



Walkability & transport mapping-reduces congestion & healthcare costs

AI-powered value/ cost-benefit analysis-Priority to economic, health, & sustainability goals.

Decarbonisation with community driven energy-focused master-planning





3 Cutting Costs & Boosting Impact

AI-Driven Planning Approvals:

- **50% faster application processing**-saves Local Authorities **£75,000 per application**.
- Reduces legal challenges, dispute time and redesign costs.

Walkability & Active Travel:

- Every **10% increase in walkability** reduces NHS spending by **£1.2 bn annually**.
- Healthier cities = fewer sick days & higher productivity.

Green Infrastructure ROI:

- **£1 invested** in urban green space, generates **£6** in economic benefits
- Trees lower city cooling costs by **10-15%**, reducing strain on energy grids.

Energy-Efficient Housing:

- AI-driven designs cut heating & cooling costs by **25-30% per household**.
- Reduces reliance on **fossil-fuel-based heating subsidies** (which cost UK **£3 bn/year**).



4: The HP2 Roadmap

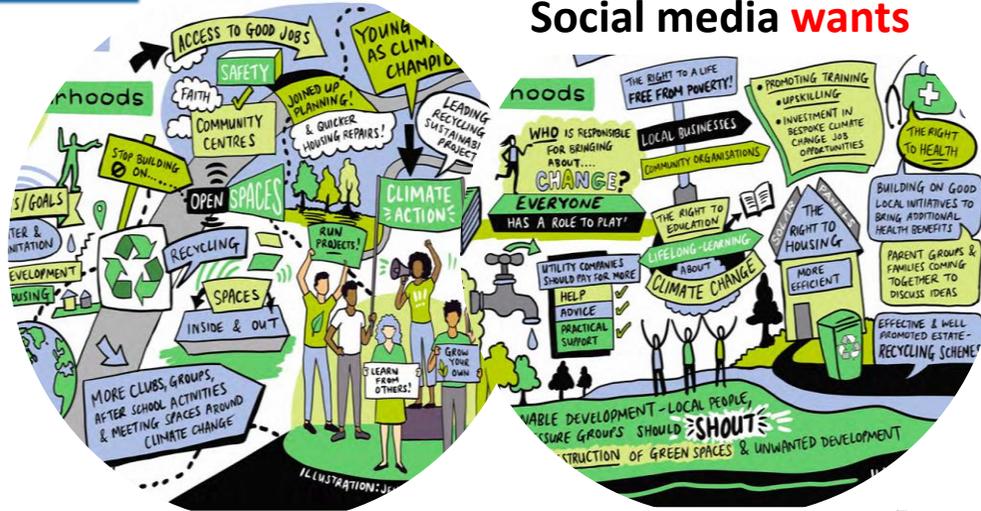
- **Current Aims for Phase 1 Pilots & Partnerships:**
 - **Other Universities** -Surrey, Southampton, Bath, Bristol Birmingham, New York
 - **Local Authorities & Developers** to streamline planning
 - **Health researchers** (Imperial Healthcare) to track real-world health impact
 - **Insurance and Financial institutions** to quantify economic benefits
- **Future Goals:**
 - **Expand AI-driven planning tools to all UK LPAs** →£3 billion/year cost savings
 - **Embed HP² in policy frameworks** → Incentivise healthier, low-carbon urban designs.
- **Develop AI-based planning ‘passports’** Reducing regulatory red tape.

HP2 isn't just a concept—it is a driver of community-led urban co-creation

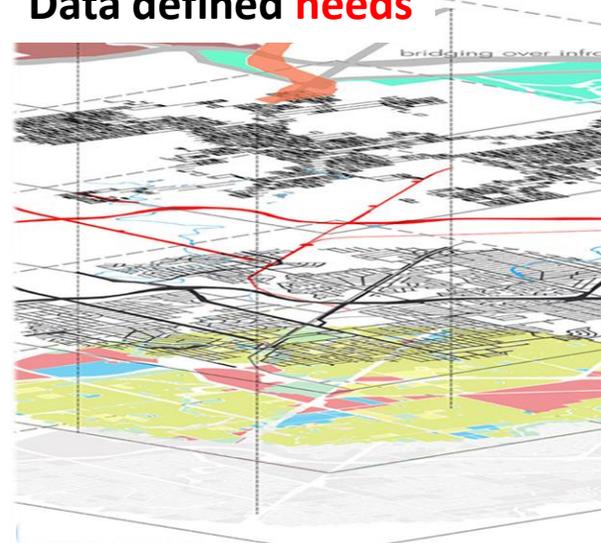


Open-sourced tools for Co-Creativity

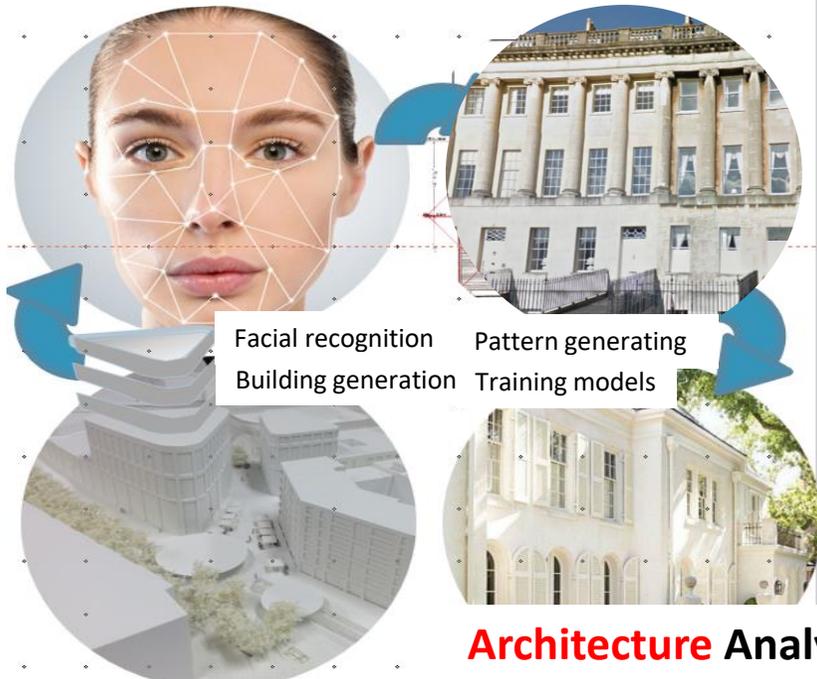
Social media wants



Data defined needs



- Place-making**
 - Street Patterns
 - Building-Heights
 - Densities
 - Civic spaces
- Urban Grain**
 - Density
 - Building Heights
 - Street Patterns
 - Civic spaces
- Infrastructure**
 - Major/ minor road networks
 - Railways
 - Bus
 - Cycle Paths
- Existing Uses**
 - Types of Housing
 - Employment
 - Education/ Health
 - Retail Centres
- Geo Spatial**
 - Planning Policy
 - Crime
 - Green Space/Amenities/ views
 - Contamination/Flood/Pollution risk
- Sustainability**
 - Energy self sufficiency
 - Walkable/ cyclable routes
 - Zero waste
 - Social capital value



Facial recognition
Building generation
Pattern generating
Training models

Architecture Analysis

GDV of Option A5

8 Units (1x Studio, 2x 1 Bed, 3x 2 Bed, 2x 3 Bed)

Unit No	Floor/Type	Beds	Living/Kitch	SQM	HP.AI	PSQM
Flat 1	LGF 3bed	3	1	87	290000	3425.287
Flat 2	LGF 3bed	3	1	76	280000	3684.211
Flat 3	GF 7bed	7	1	64	284800	4437.5
Flat 4	GF Studio	0	1	44	186000	4227.273
Flat 5	GF 1bed	1	1	61	228000	3737.705
Flat 6	1stF 2bed	2	1	71	270000	3802.817
Flat 7	1stF 2bed	2	1	61	252000	4131.148
Flat 8	2ndF 2bed	2	1	62	255000	4112.903
Project B				526	2053000	3903.042

GDV of Option B2

7 Units (2x 1 Bed, 4x 2 Bed, 1x 3 Bed)

Unit No	Floor/Type	Beds	Living/Kitch	SQM	HP.AI	PSQM
Flat 1	LGF 2Bed	2	1	66	260000	3939.394
Flat 2	GF 1Bed	1	1	51	218000	4274.51
Flat 3	GF Duplex 3Bed	3	1	111	335000	3018.018
Flat 4	GF 2Bed	2	1	61	252000	4131.148
Flat 5	1stF -2Bed	2	1	61	252000	4131.148
Flat 6	1stF Flat1 -2Bed	2	1	75	271000	3613.333
Flat 7	RF Flat1 -2Bed	1	1	64	234000	3656.25
Project A				489	1822000	3725.971

Options Analysis



5: Case Study

New Public Plaza over rail / bus hub with micro 'no-latency Data Centre'



100% extension to North Block as flexi live /workspace



New green landscaping designed to maximise air quality at station entrance

Safer pedestrian routes from King St to Riverside

A NEW ERA FOR HAMMERSMITH

33% School absenteeism increase (21.2% 2022/23, 10.9% in 18/19)

95% Free School Meals increase (50% increase over 5yrs)

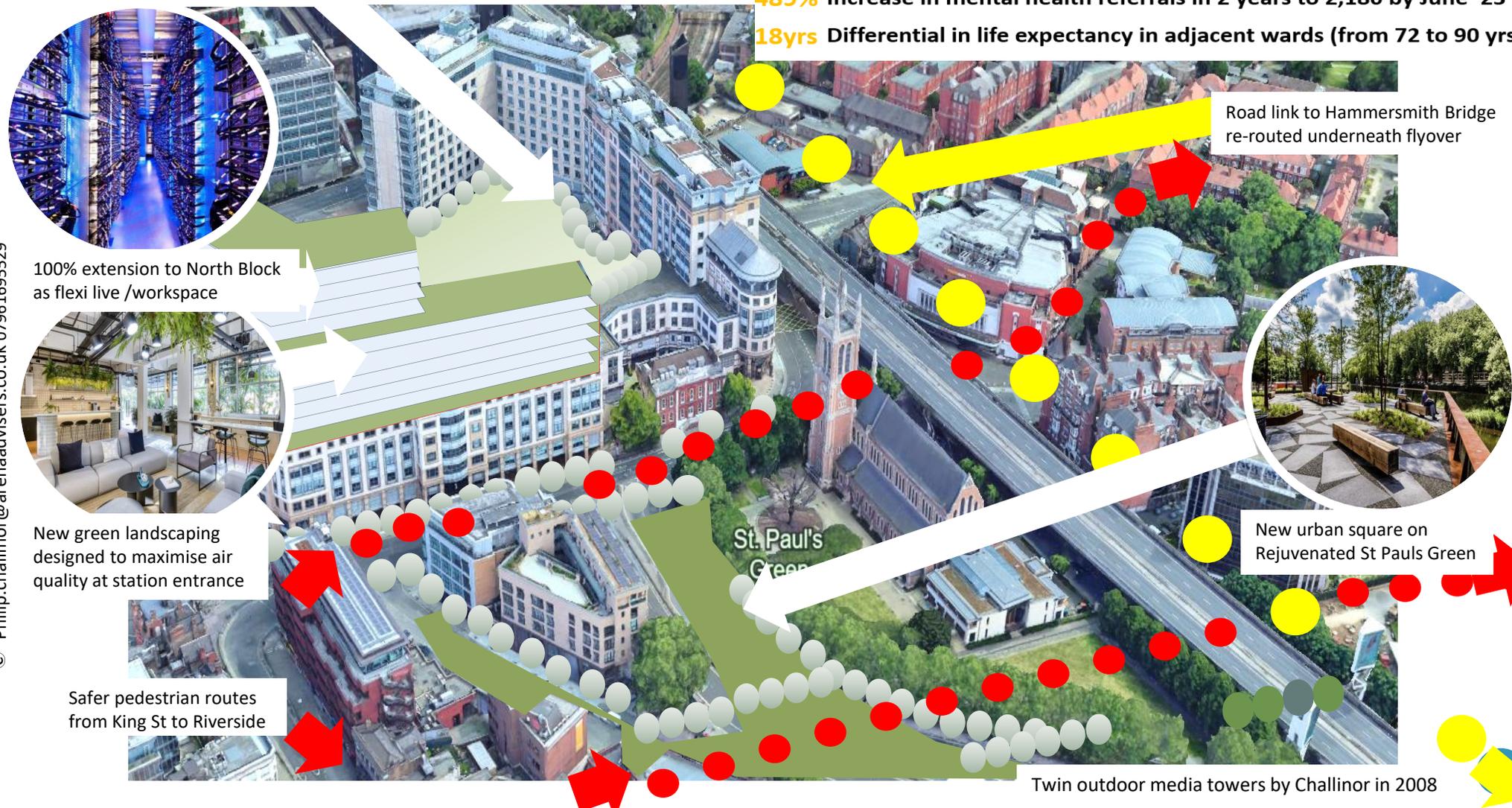
76% Of median income spent on median rent for 1B flat (22-23) 3 times more than in rest of UK

46% Increase in benefits claims from 2020 to 2023

489% Increase in mental health referrals in 2 years to 2,180 by June '23

18yrs Differential in life expectancy in adjacent wards (from 72 to 90 yrs)

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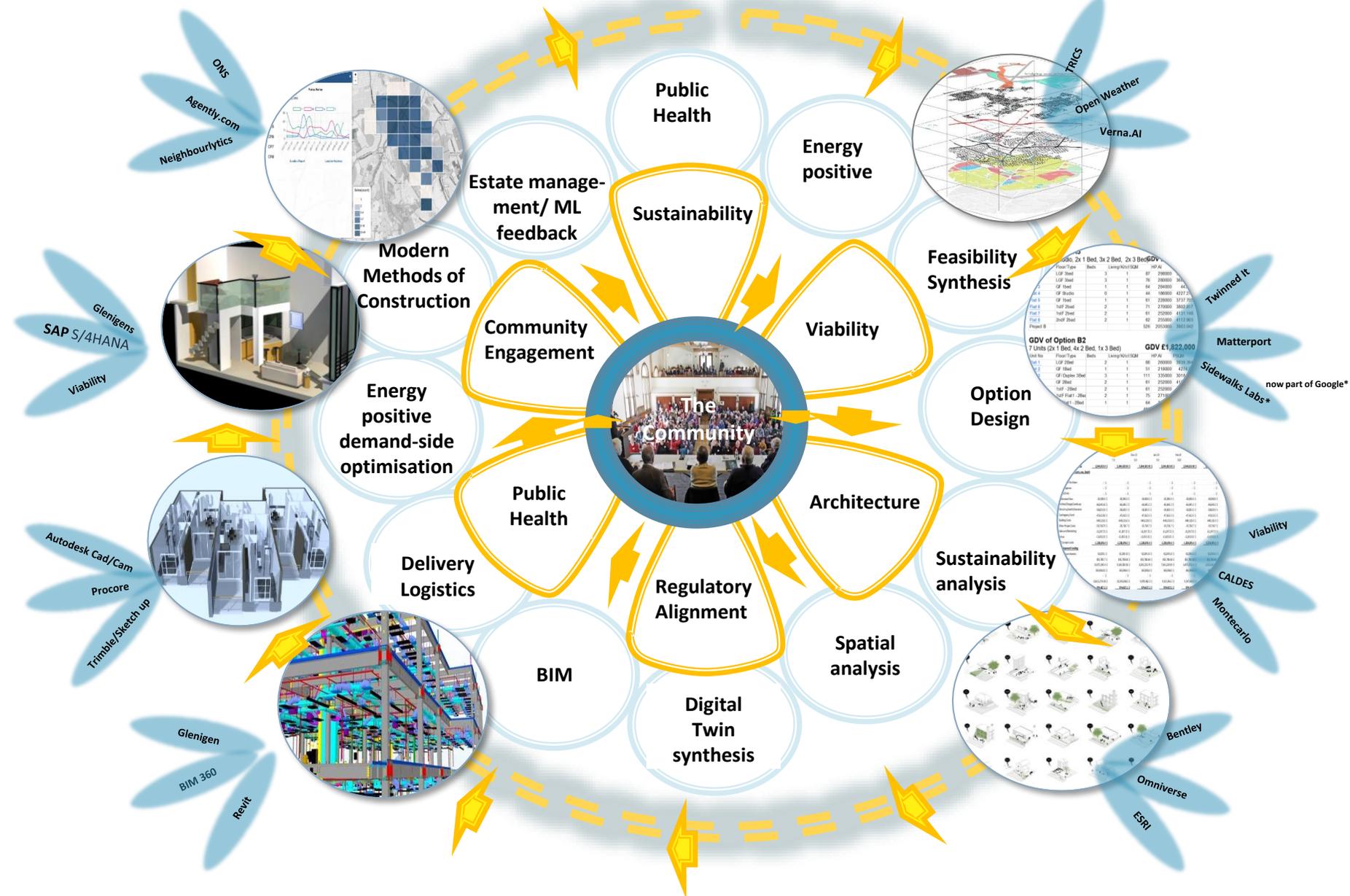
Road link to Hammersmith Bridge re-routed underneath flyover



New urban square on Rejuvenated St Pauls Green

Twin outdoor media towers by Challinor in 2008

Next-The Product Integration Challenge





The three big take-aways

Planning is a key driver of economic growth

The next 5 months are crucial and we can't expect favours from Elon

AI facilitates rapid evolution, not revolution

What are our 3 biggest challenges:

LISTEN

;...LISTEN

.....& LISTEN

AI is key but it cannot be forced.