Governing the Subsurface: Squandered Opportunities

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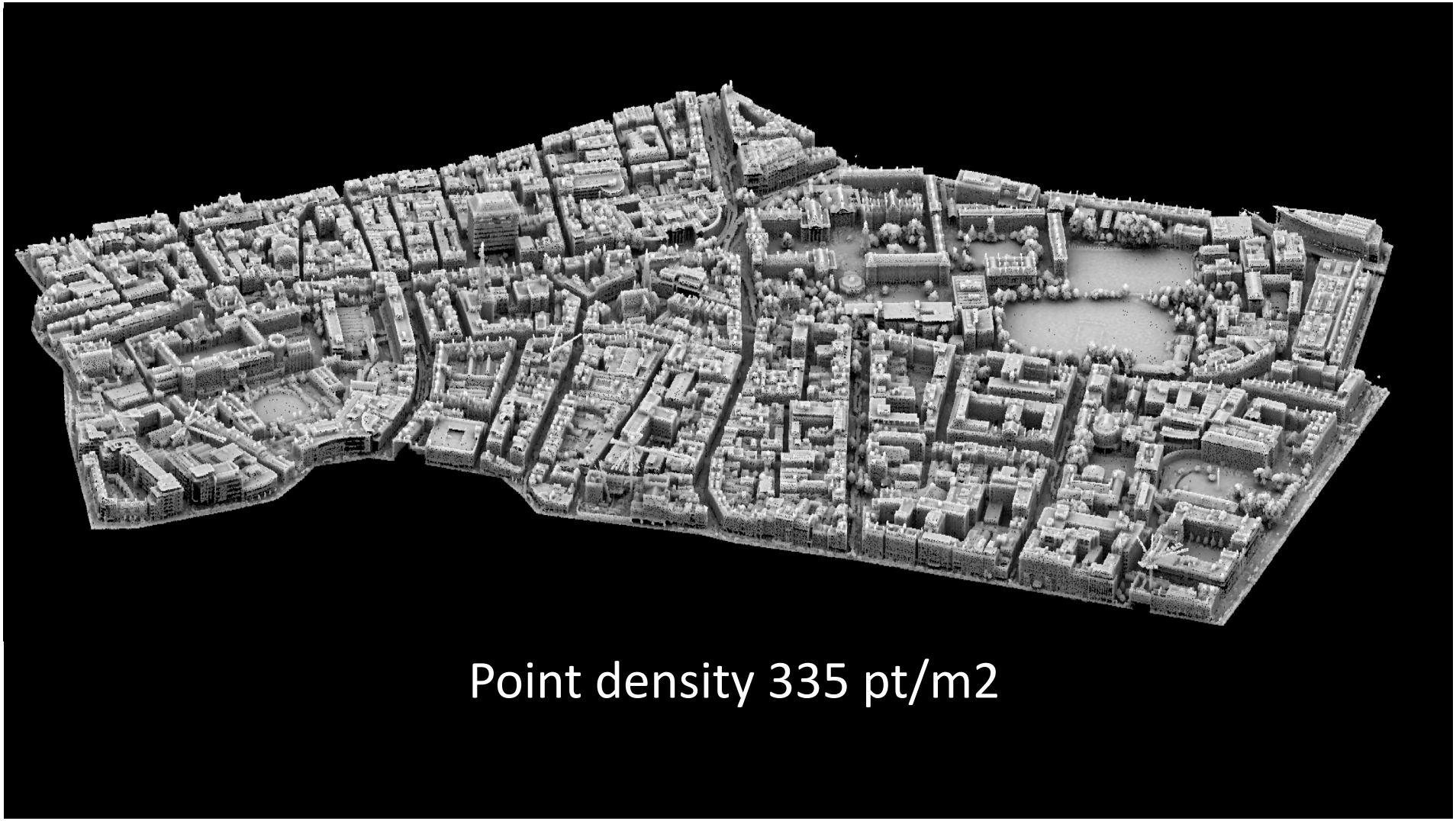
Point density 335 pt/m2

Above - Utility lines, small roof details, curb heights

Below - ?

Above - Utility lines, small roof details, curb heights
Below - Borehole sampling every 200 m

Motivators

- 2 of 3 people live in urban areas
- 47 megacity areas
- Many are 30+ million
- Subsurface increasing critical
  - Food in
  - Waste out
  - Daily transport
  - Emergency service delivery

Rethinking the Subsurface

What Next?

Realities

Opportunities

Objects	Activities	Opportunities
Utility trenches	Excavation	Test pits
Tunnels (water, sewage, transport)	Construction	Boring
Foundations	Refurbishment	Coring
Basements	Replacement	Lab test
Roadways	Demolition	In-situ testing
Bridge piers		Proof testing

Challenges

- Sparse data
- Different scales
- Heterogeneous data
- Disparate temporal recurrence
- Incompatible data formats (OGC, ISO, DIGGS)
- Contractual (exploration vs construction)
- Poor storage options
  - No motivation on part of owners
  - No intersection between natural and constructed
  - Community perception about data ownership & security

Losses + Risks

- Wasteful of previous investments
- Redundant costs
- Service interruptions
- Construction industry deaths
- Extended construction cycles
- Prolonged and worsened traffic delays
- Delayed creation of essential community services
- Unnecessary risk introduction
- No chance for governance

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- No chance for governance – yet we must