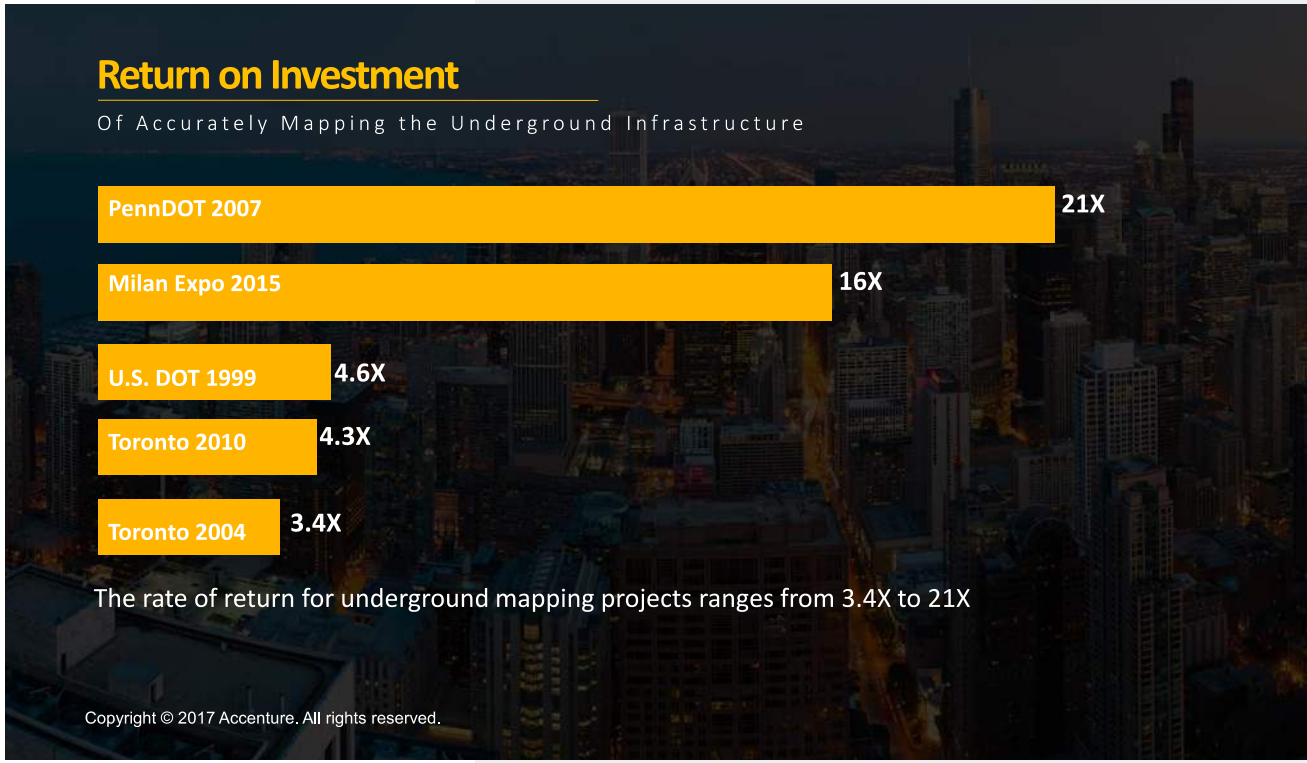
Complexity of utility infrastructure from an interest, governance, regulation and policy perspective

7 December 2017 – Carsten Rönsdorf, Spatial Data Infrastructure Lead, Ordnance Survey

Ordnance Survey

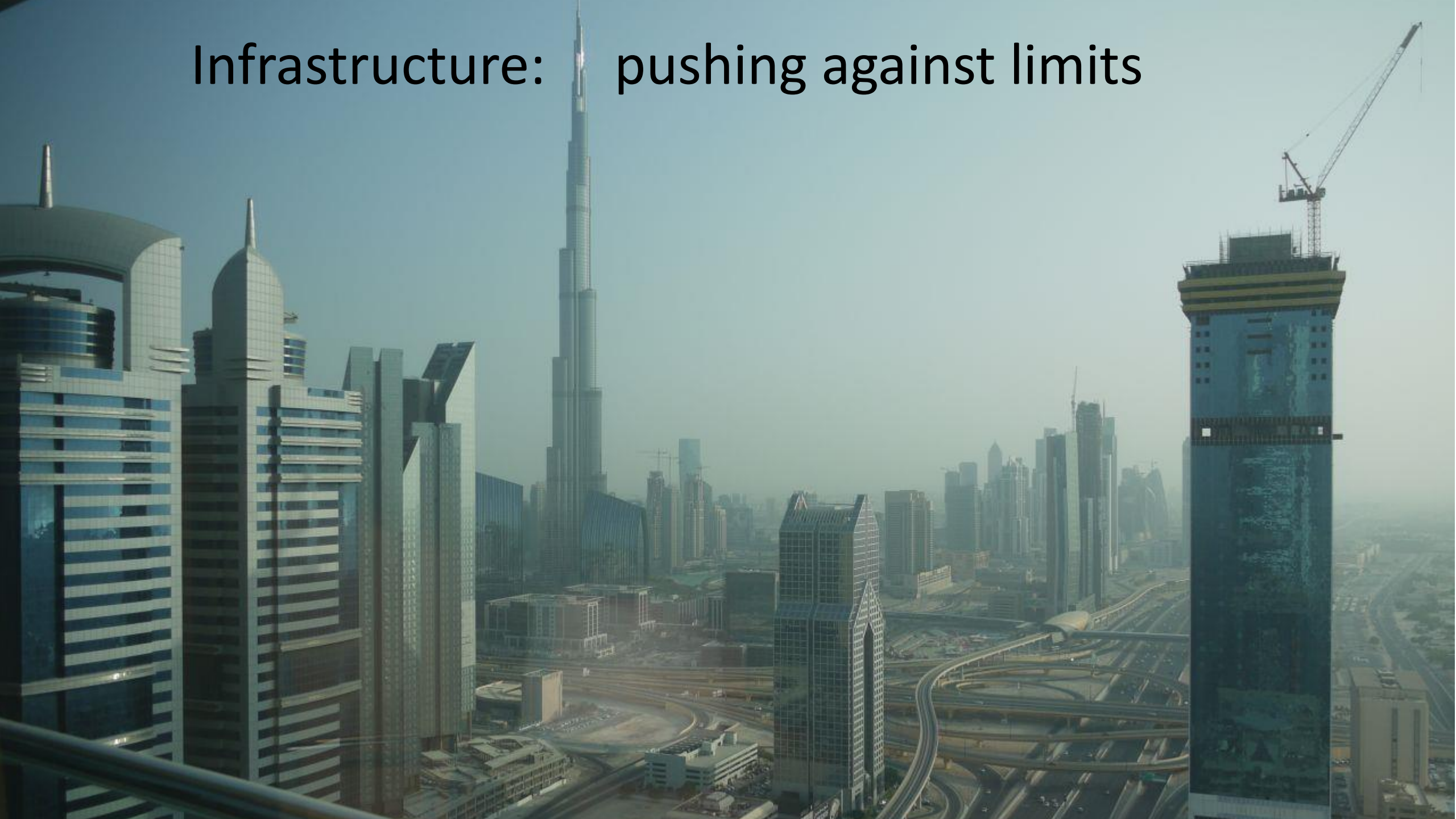
Agenda

1. Infrastructure – pushing against limits
2. OGC Underground CDS
3. NYC use case
4. Digital Twin
5. Governance
6. Summary



From Accenture, OGC Underground CDS ER

Infrastructure: pushing against limits



Optimal utilisation of infrastructure?

Satellite dishes are scaleable, other infrastructure isn’t

All infrastructure has a geographic dimension:

Wherever you live/work –
you have an expectation of infrastructure being provided

Future direction

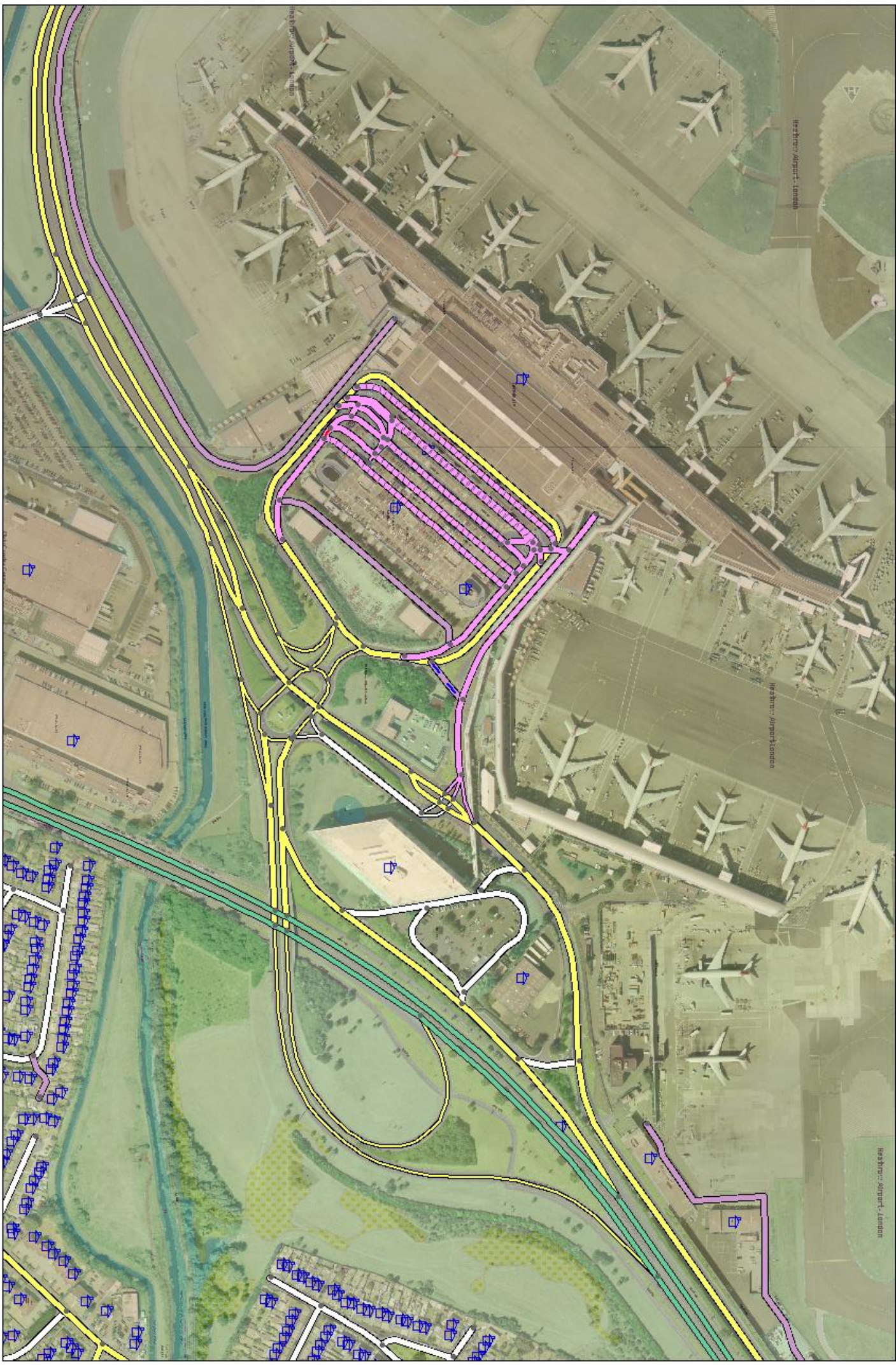
Evolving need for location data

Scenario planning
(example policy modelling using big data)

Simulation
(example 5G planning and asset utilisation)

Supply-Demand optimisation
(example: reduce congestion)

Reliable infrastructure data



OS Mastermap ® layers

Open Geospatial Consortium
Geospatial innovation

- Standards
- Best practise
- Innovation community
- Dialogue between vendors, academia and government
- Testbeds and pilots

OGC®

Making location count.

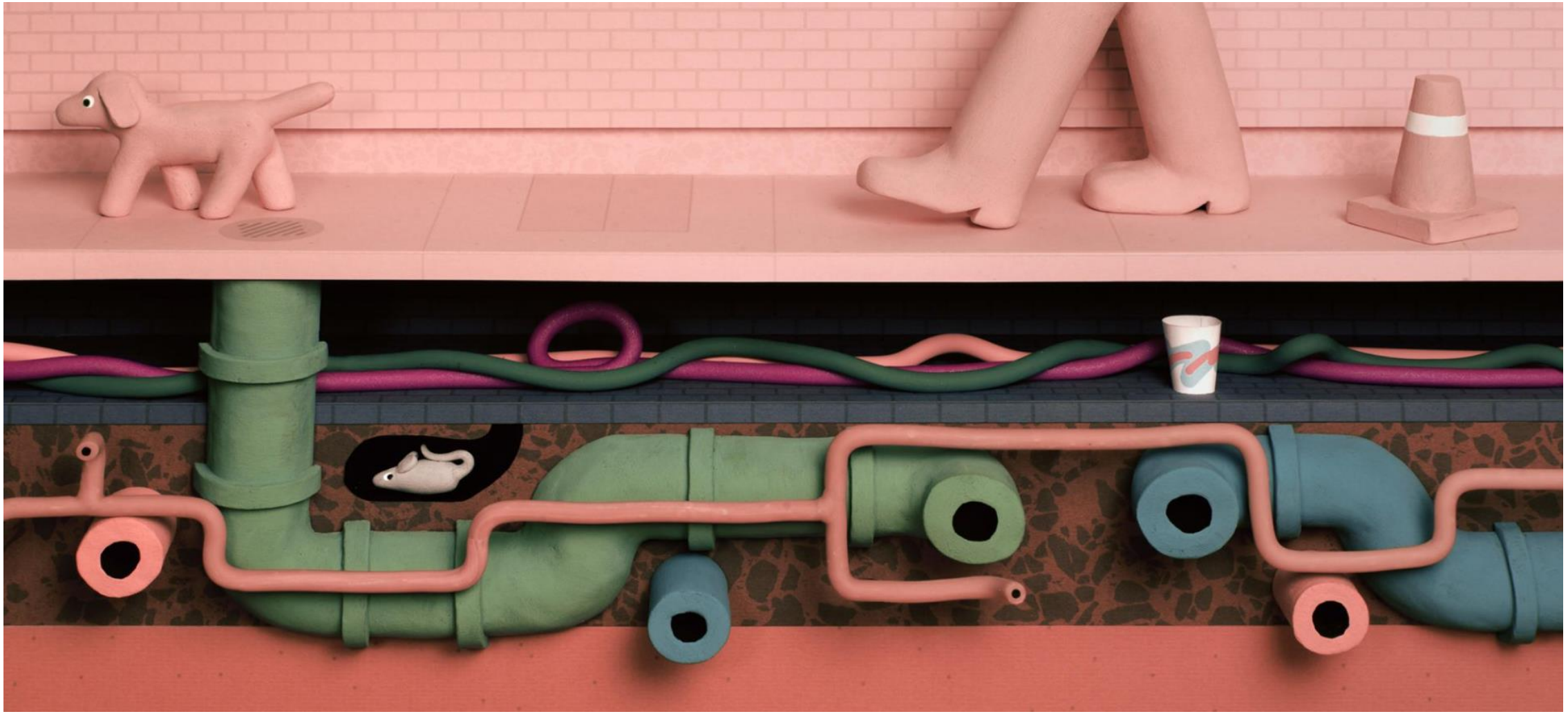
OS is one of the five strategic OGC members

USGS science for a changing world

Ordnance Survey

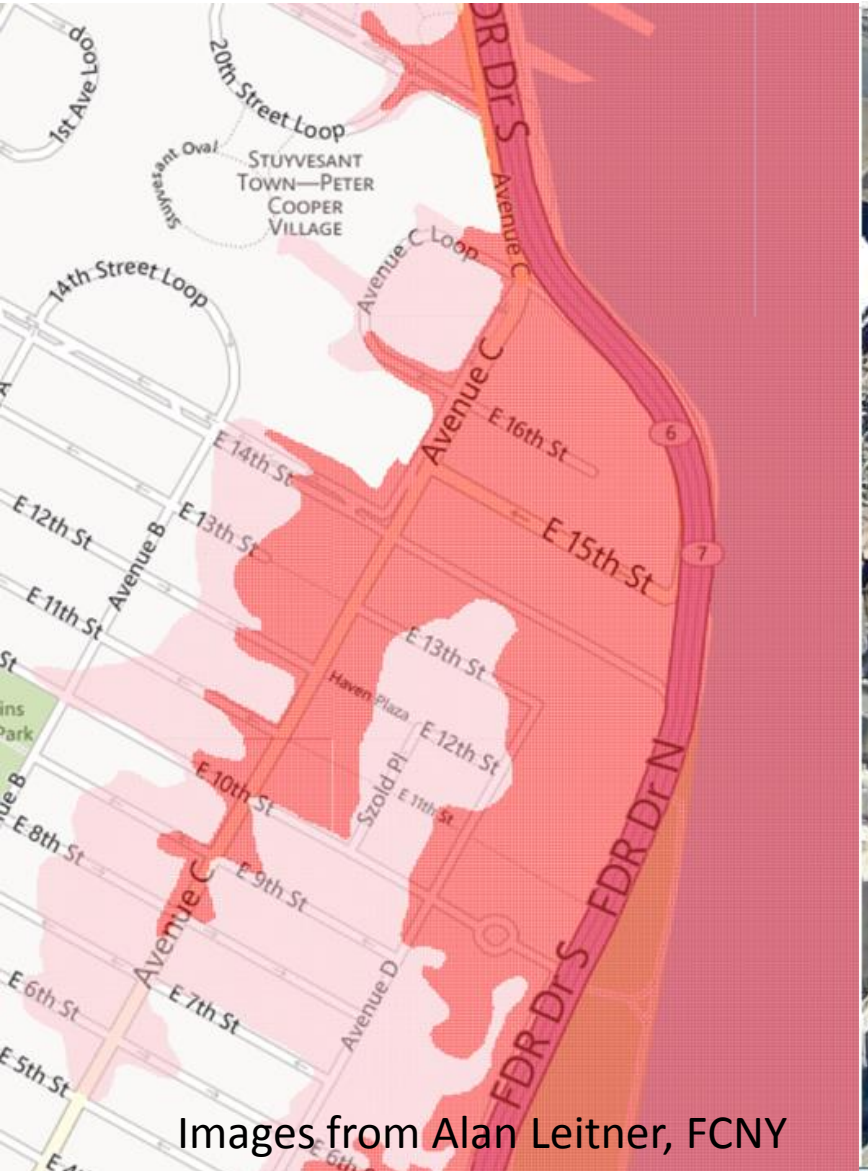
NASA

Infrastructure and the Evolution of GIS in NYC
OGC Location Powers: Underground - keynote



“Nobody Knows What Lies Beneath New York City” by Greg Milner for Bloomberg Businessweek Magazine, 8.10.17

NYC: Oblique Imagery from 2012: Showing apparent vulnerabilities to surge waters Hurricane Sandy; predicted flooding(left)



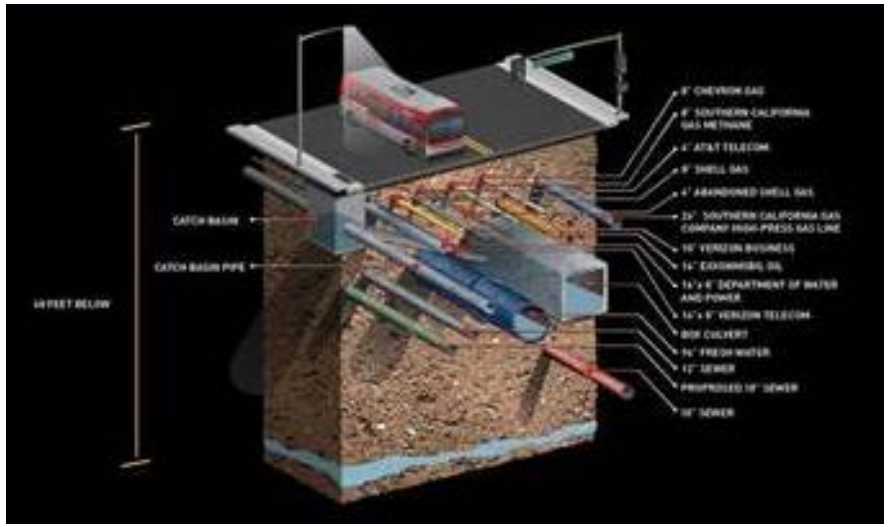
Images from Alan Leitner, FCNY

Midtown to Downtown Manhattan Blackout: Oct 29th 8:50PM

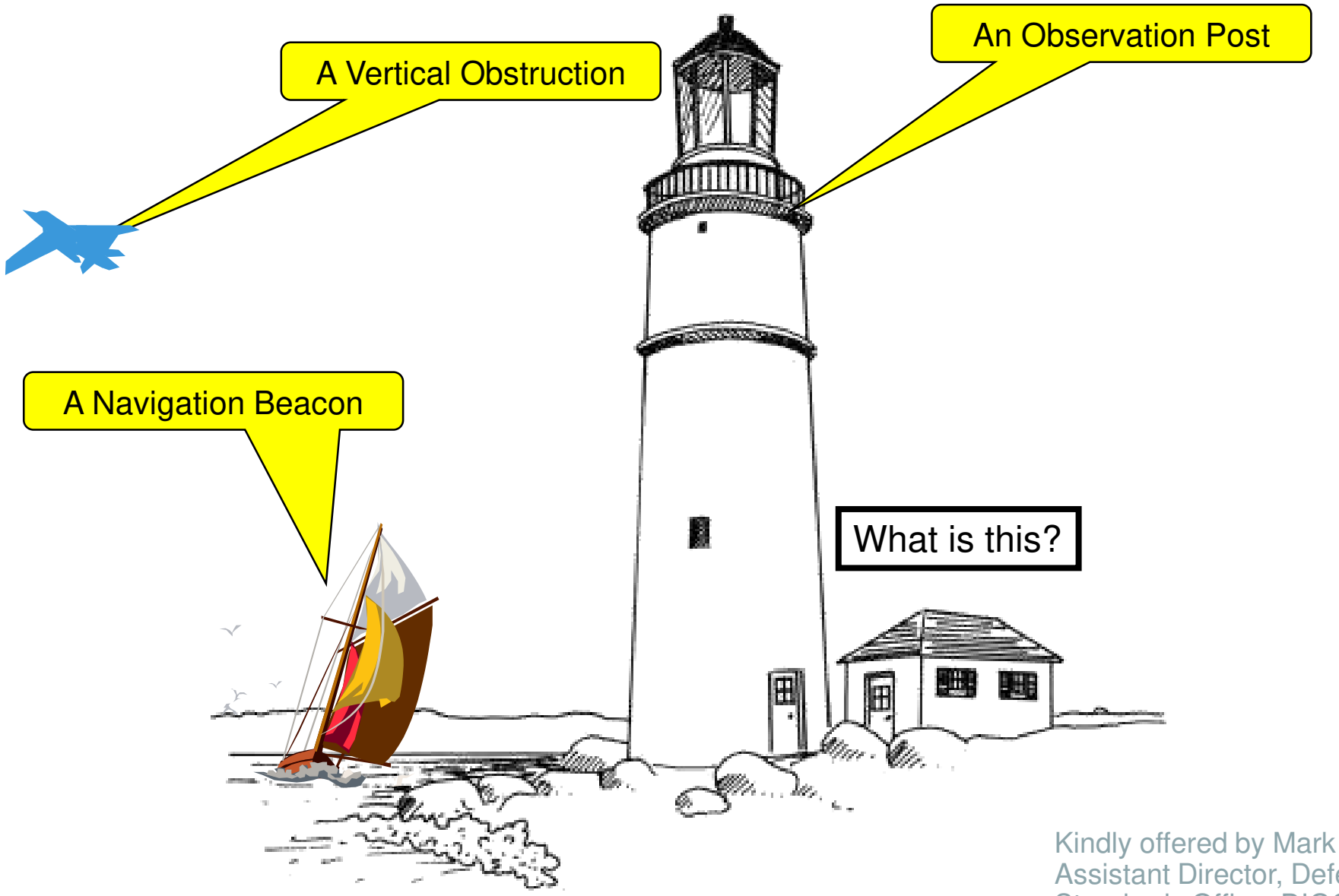
OGC Underground Infrastructure Concept Study Engineering Report http://docs.opengeospatial.org/per/17-048.html

Six major categories of use cases for better underground survey data identified:

1. Routine street excavations;
2. Emergency response;
3. Utility maintenance programs;
4. Large scale construction projects;
5. Disaster planning and response; and
6. Smart cities programs.



Shared understanding: Relevance beyond the owner of infrastructure



Kindly offered by Mark McInerney
Assistant Director, Defence Spatial
Standards Office, DIGO, Australia

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www.opengeospatial.org

Use geospatial foundation data for multiple purposes

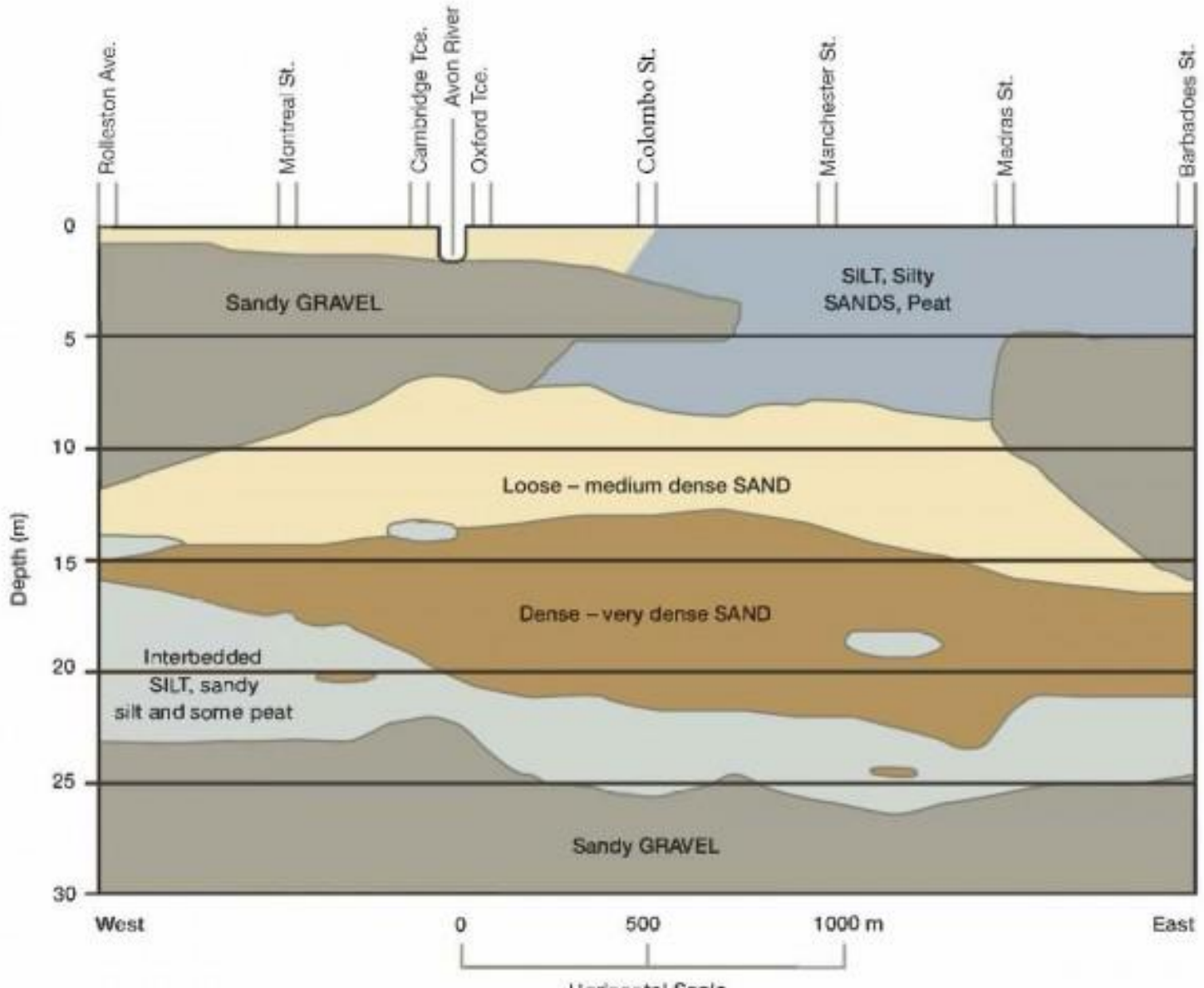
Digital Twin Concept: a model of an infrastructure asset or system of assets which simulates optimised use and maintenance of that asset.

From Sarah Hayes, UK National Infrastructure Commission

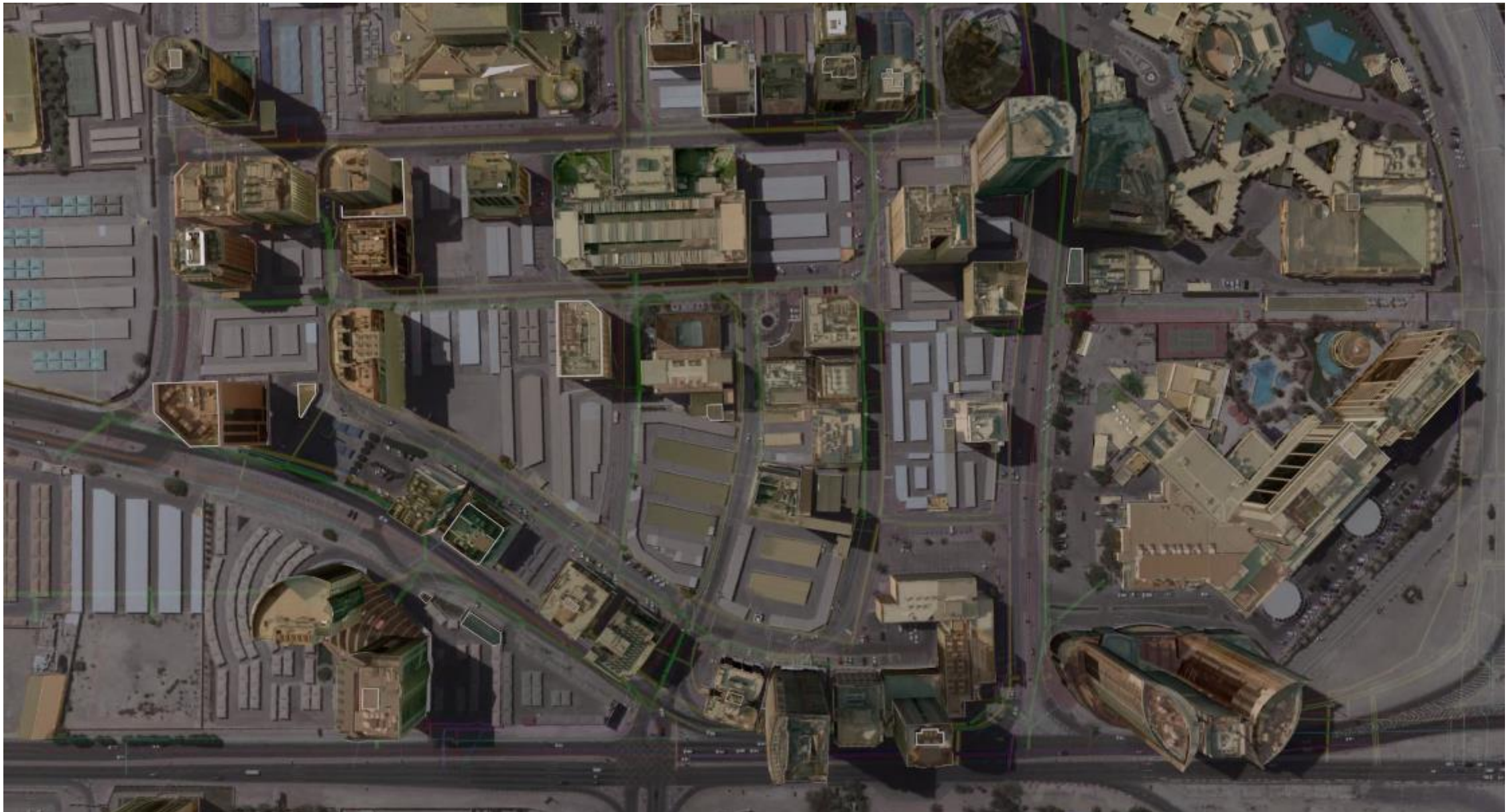
Real World

Digital Model/Digital Twin

Or, provide the best possible information



Video



Trusted and shared infrastructure data—where are the gaps?

There are many:

- …
- …
- …
- …
- Inconsistent surveys, data management, access

Governance

- Regulatory power / legal mandate
- Policy setting
- Data custodianship
- Standards setting
- Process definition
- KPIs
- Centralised QA function

Underground utilities
as an

- Interoperability problem
- Policy problem
- Liability problem
- Accuracy problem

It doesn’t matter where your assets are until you need to do something to them

Is this always right?

What does this mean for your risk management approach?

The organisations who need to make data interoperable are not necessarily the organisations benefitting from this data

Split proposition

Government sector

Utility sector (private, semi-private)

Carsten.Roensdorf@os.uk

+44 79000 52262

Summary

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Governance and policy:
who's responsible?

Standards and Specifications:
common way of working

Quality management:
rely on other's data

Data sharing:
accessibility and trust

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