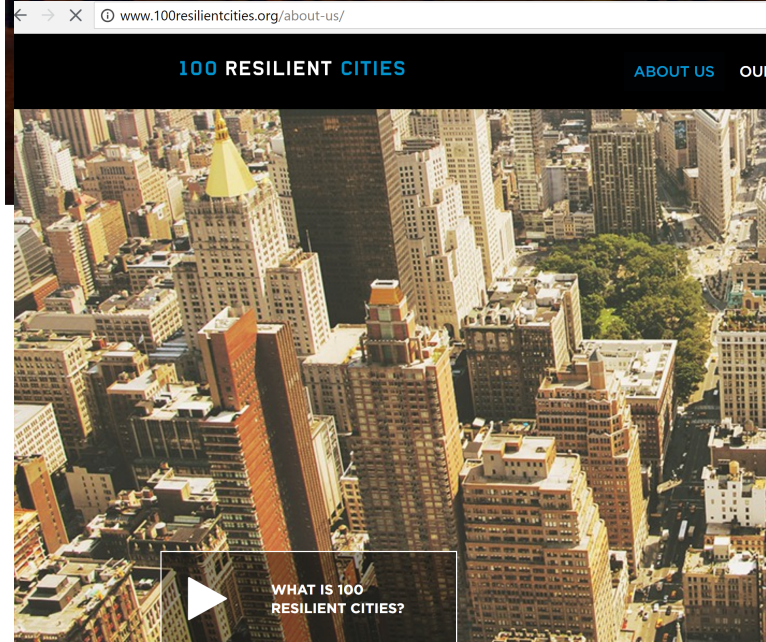
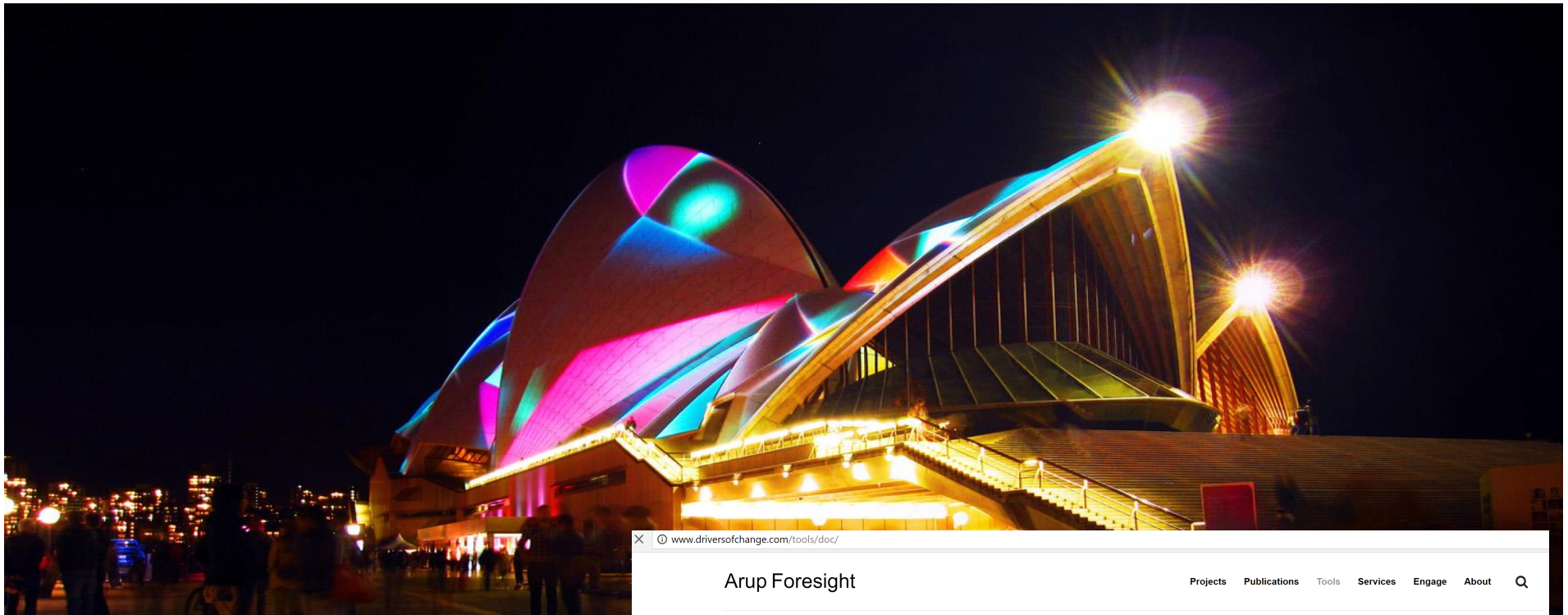


MUDDI – perspectives on implementing a utility data model from AS5488

Richard Bartholomew

ARUP



www.driversofchange.com/tools/doc/

Arup Foresight

Projects Publications Tools Services Engage About Q

drivers of change

Drivers of Change investigates the key global issues and trends driving change in our societies and markets. It is one of the most well-known and comprehensive publication series of its kind. The cards are an effective way of raising awareness about our environment – both man-made and natural. They help initiate conversations, act as workshop materials, provide a foundation for further study and serve as an input for strategy and innovation processes.

climate change 2.0	convergence	demographics 2.0	energy 2.0	food
oceans	poverty	urbanisation 2.0	waste 2.0	water 2.0

A compilation of seven of the above card sets was published by Prestel in 2009.

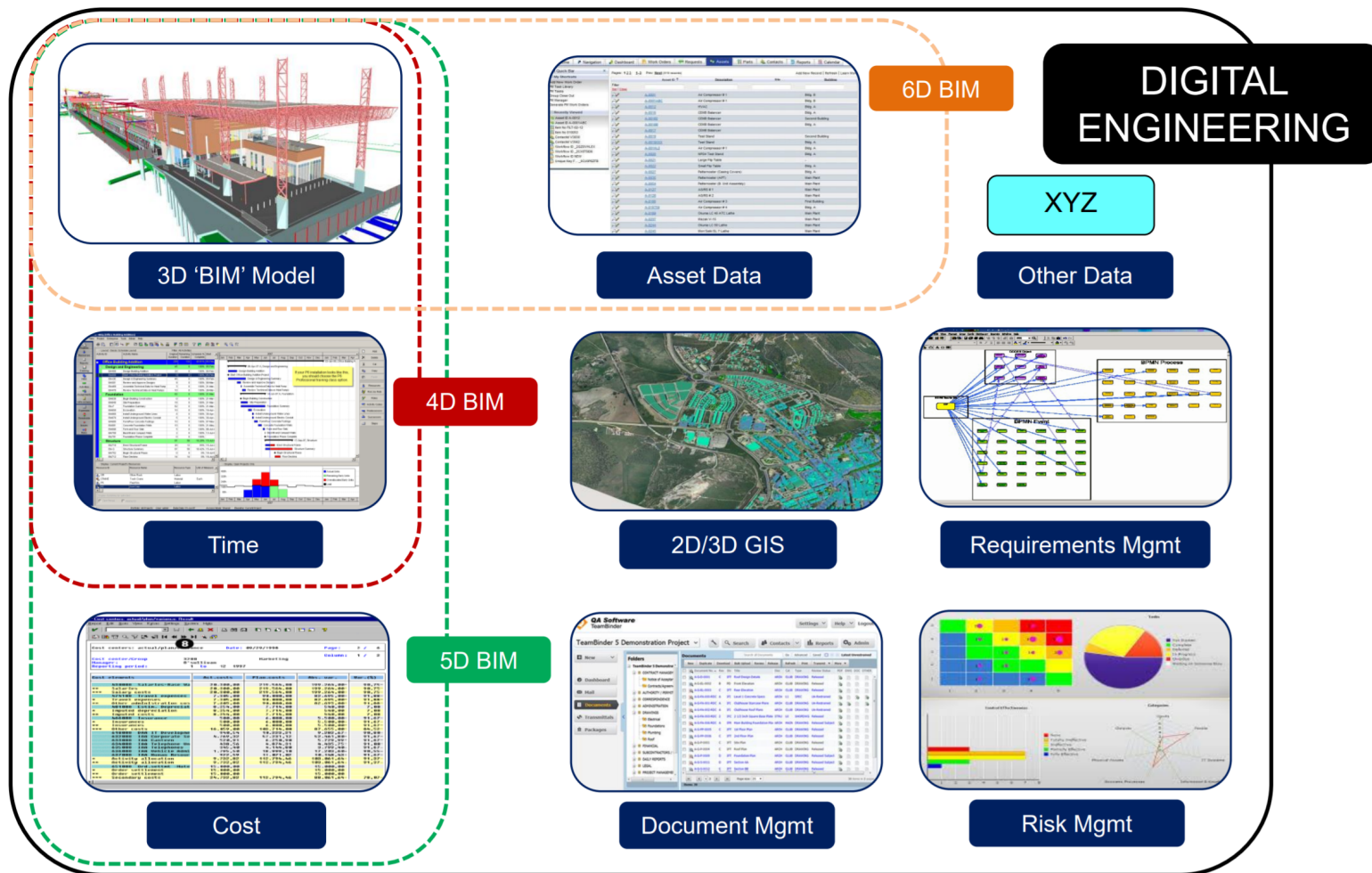
Please [contact us](#) if you would like to learn more about Drivers of Change or [order a set of printed cards](#). Drivers of Change is also available as a mobile app on [iOS](#) and [Android](#).

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Challenges



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How have we been addressing this?

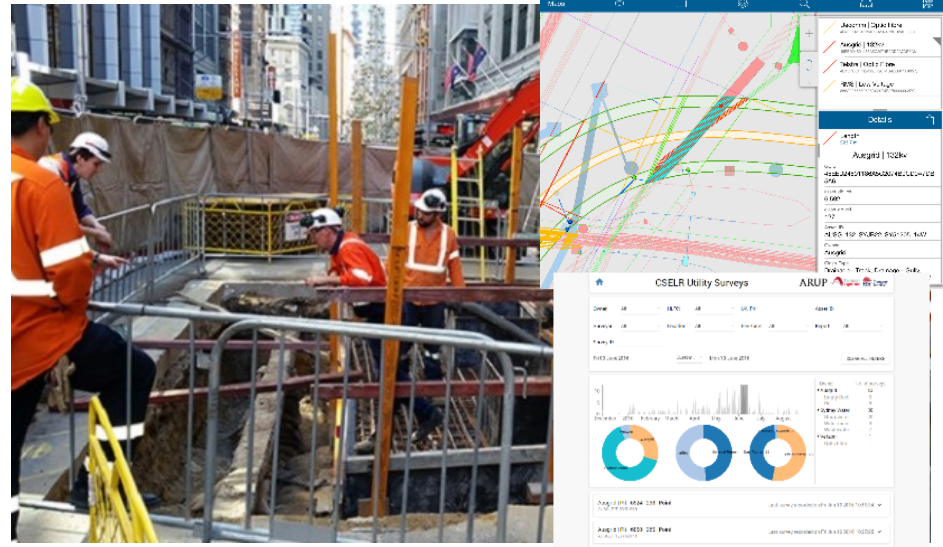
REACTIVE INNOVATION



Clash detection v1

v2

v3



Site Survey and reporting

Flood modeling and visualization

Commissioning

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“A need for a utilities data and clash management platform”

AS5488-2013 (SUI) - Australian Standard: Classification of Subsurface Utility Information.

Australia has an Australian Standard for the classification of subsurface utility information (SUI) (AS 5488-2013). Its purpose is to create a common way of specifying the exact location and nature of a huge range of underground infrastructure, provide guidance on how information on subsurface infrastructure should be collected and how it should be conveyed to those who need it.

The new standard has been prepared by Standards Australia Committee IT-036, Subsurface Utility Engineering Information, made up of several organisations with an interest in the issue. These included [Dial Before You Dig](#) and the [National Utility Locating Contractors Association \(NULCA\)](#), who have played a significant role in ensuring that the standard is truly Australian and not simply a replication of the US standard.

The published standard aims to improve public safety, reduce costly property damage and provide much more accurate information on the location, type and condition of subsurface utility infrastructure than has been available in the past. In addition to setting out a standard way of specifying the location of subsurface infrastructure it also provides guidance on how this information should be collected and on how it should be conveyed to those who need to use it.

It contains an extensive list of asset types and a suggested colour code for how different types of asset should be identified. However it does not specify how subsurface assets are identified on maps, plans and electronic records in terms of symbols, line types or colours. It notes that such depiction is the prerogative of the organisation that owns the asset. The published AS 5488 – 2013 is available from [SAI Global](#).



In Accordance with AS 5488, the standards for locating and marking underground services are split up into four classes:

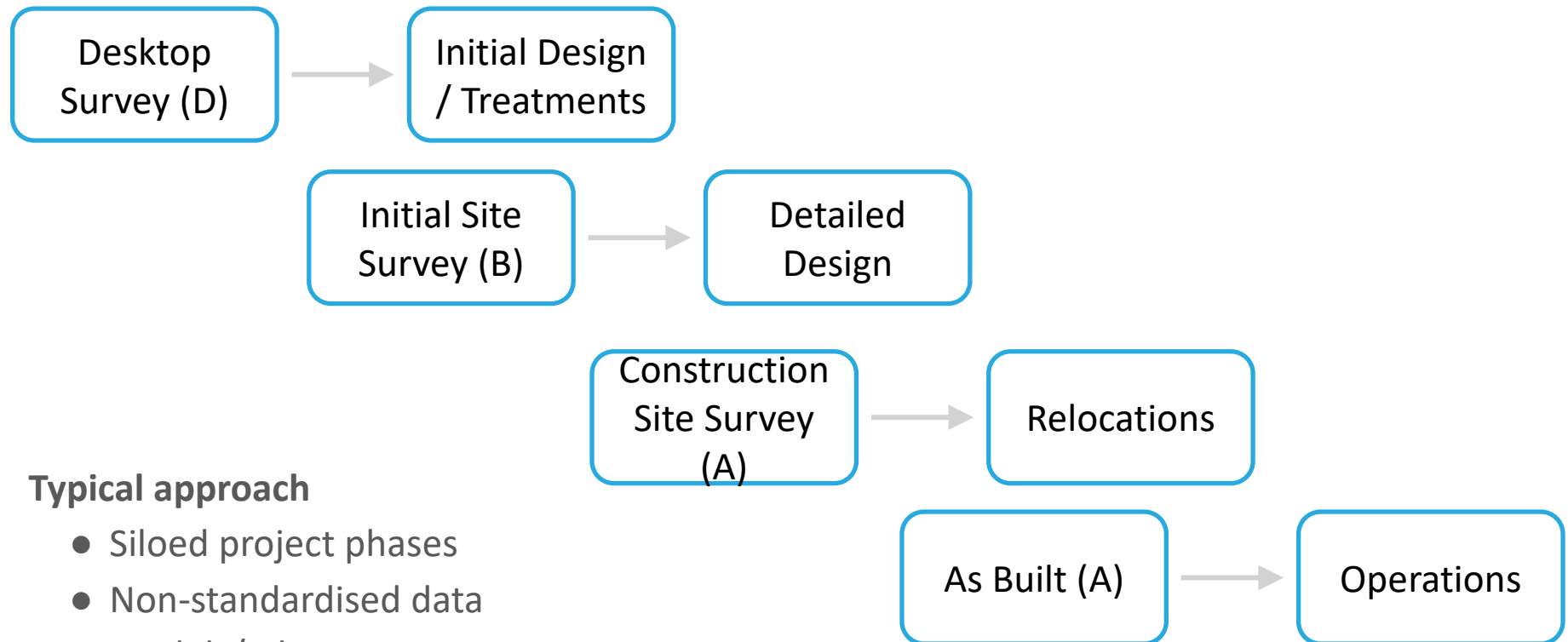
- **QL-(A)** sighted, must be located, then potholed. Utility must be physically sighted and measured.
- **QL-(B)** traced, laterally, with depth detail, between two known points (i.e. two man holes)
- **QL-(C)** aligned from surface features,
- **QL-(D)** any other method (E.g. DBYD plans only)

This allows all operators on the project to understand the accuracy of the site location and map data when carrying out any kind of planning and excavation works.

It can also reduce costs by pre-planning on projects.

(Further reading)

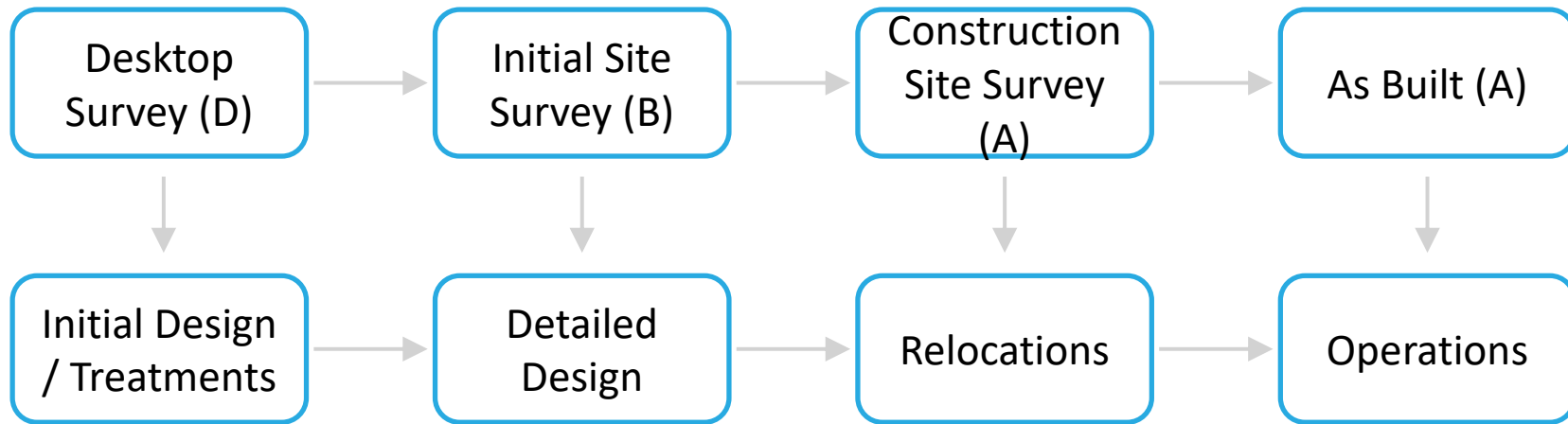
Underground Utilities Survey



Typical approach

- Siloed project phases
- Non-standardised data models/schemas
- Information collection duplicated

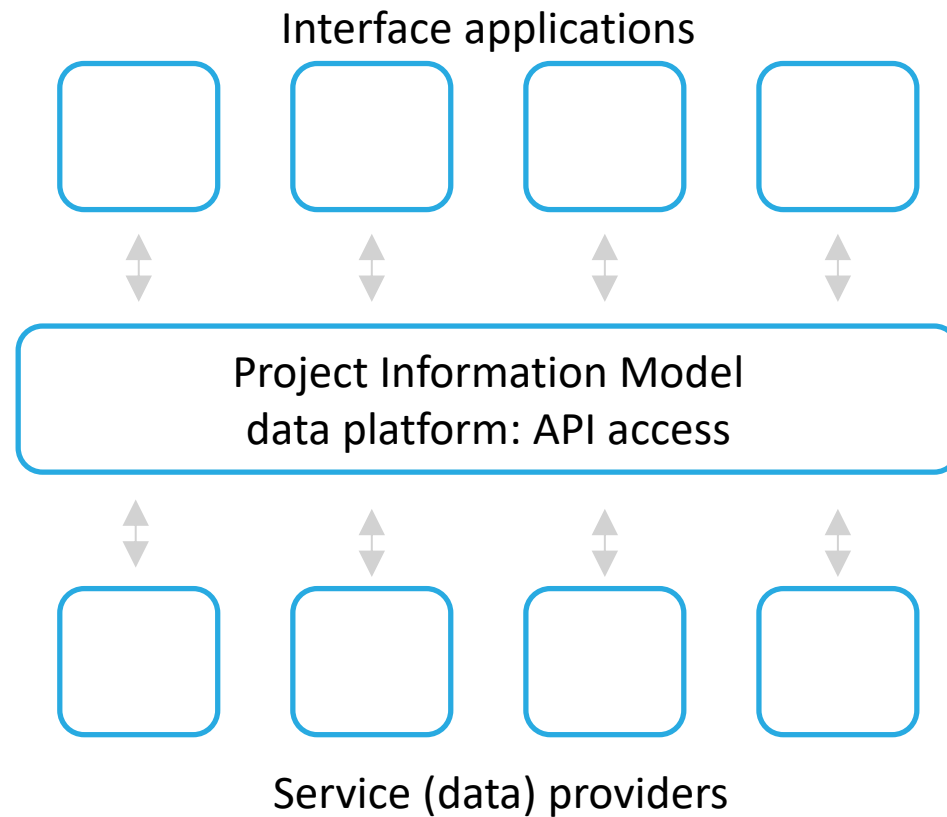
Underground Utilities Survey



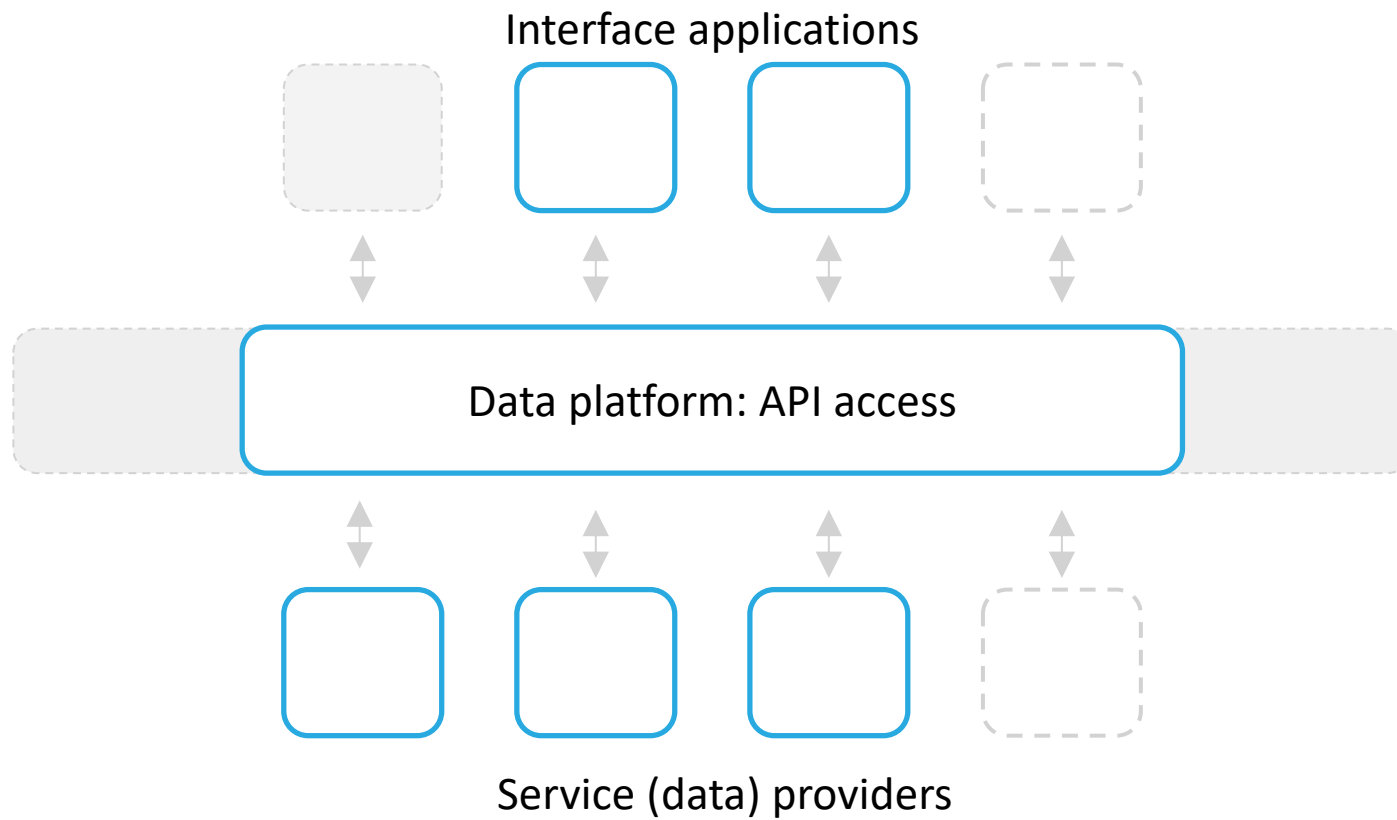
DE approach

- Information carried through phases
- Standard data models/schemas (AS5488)
- Value of information for each asset increases throughout project

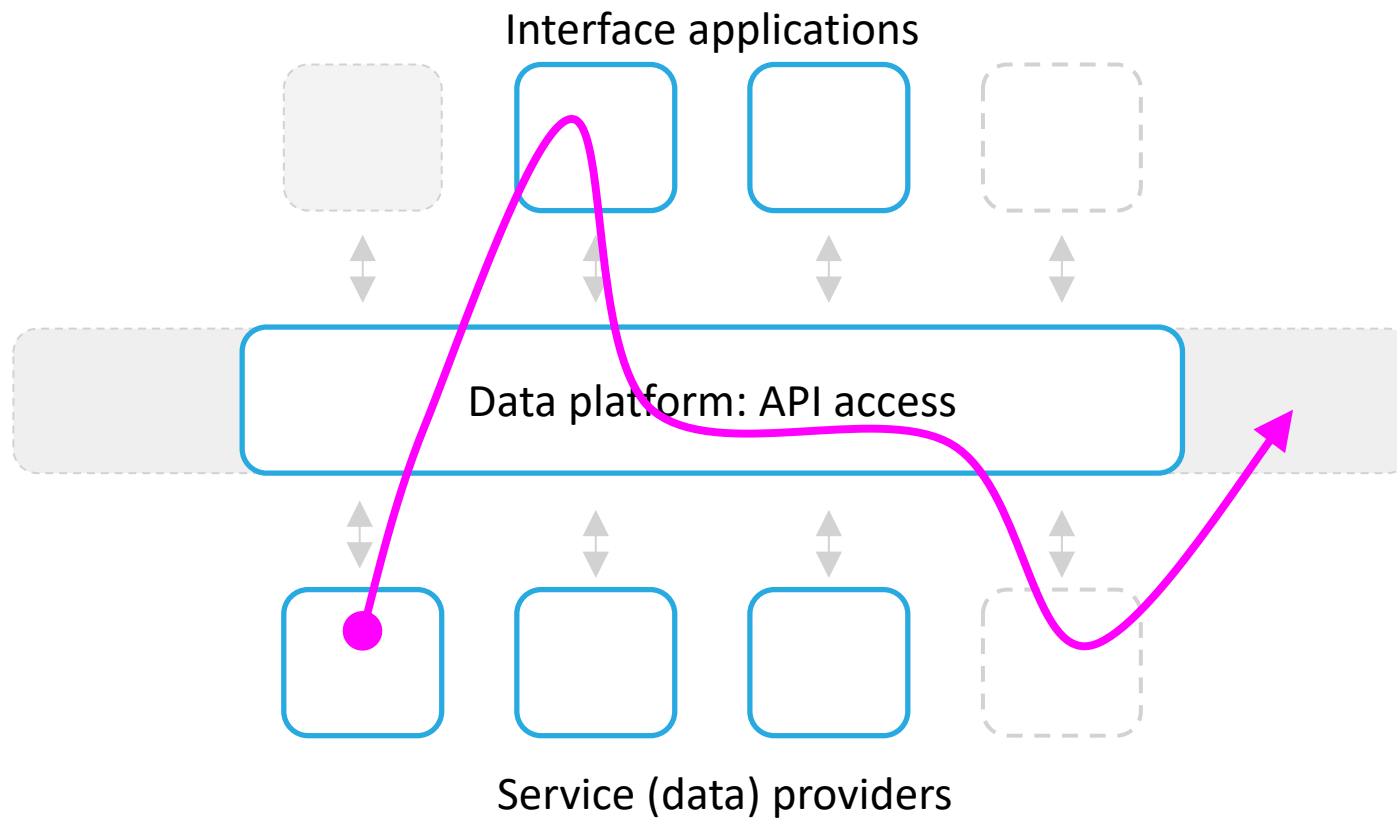
Platform approach



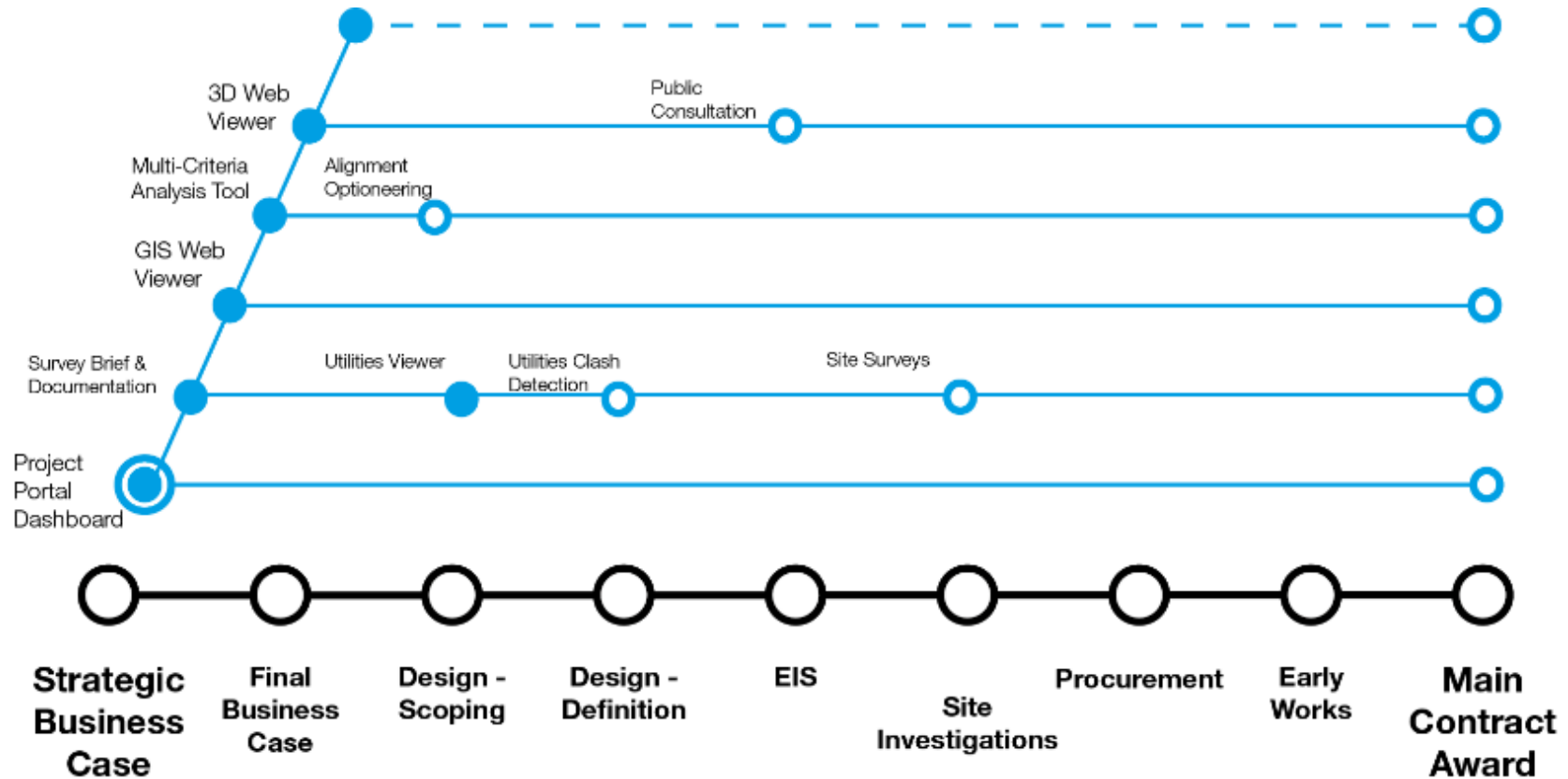
Platform evolution



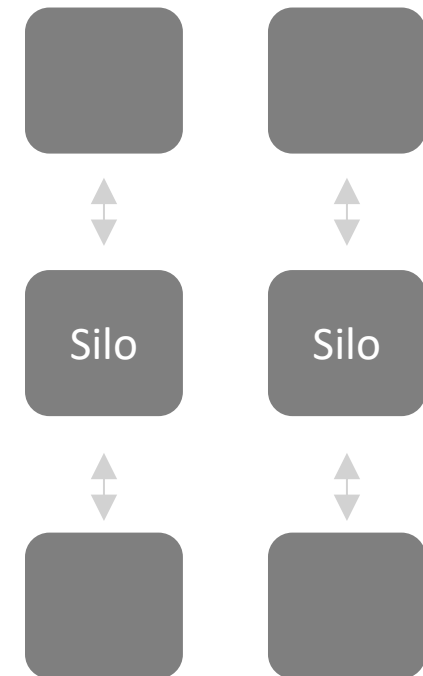
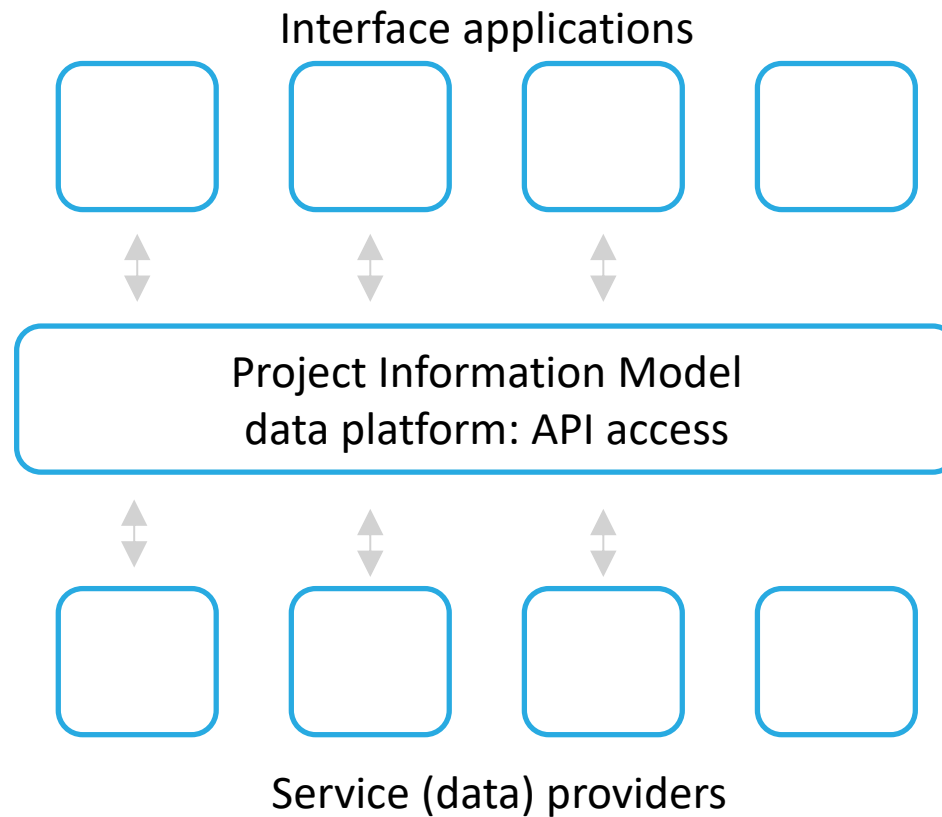
Information value chain



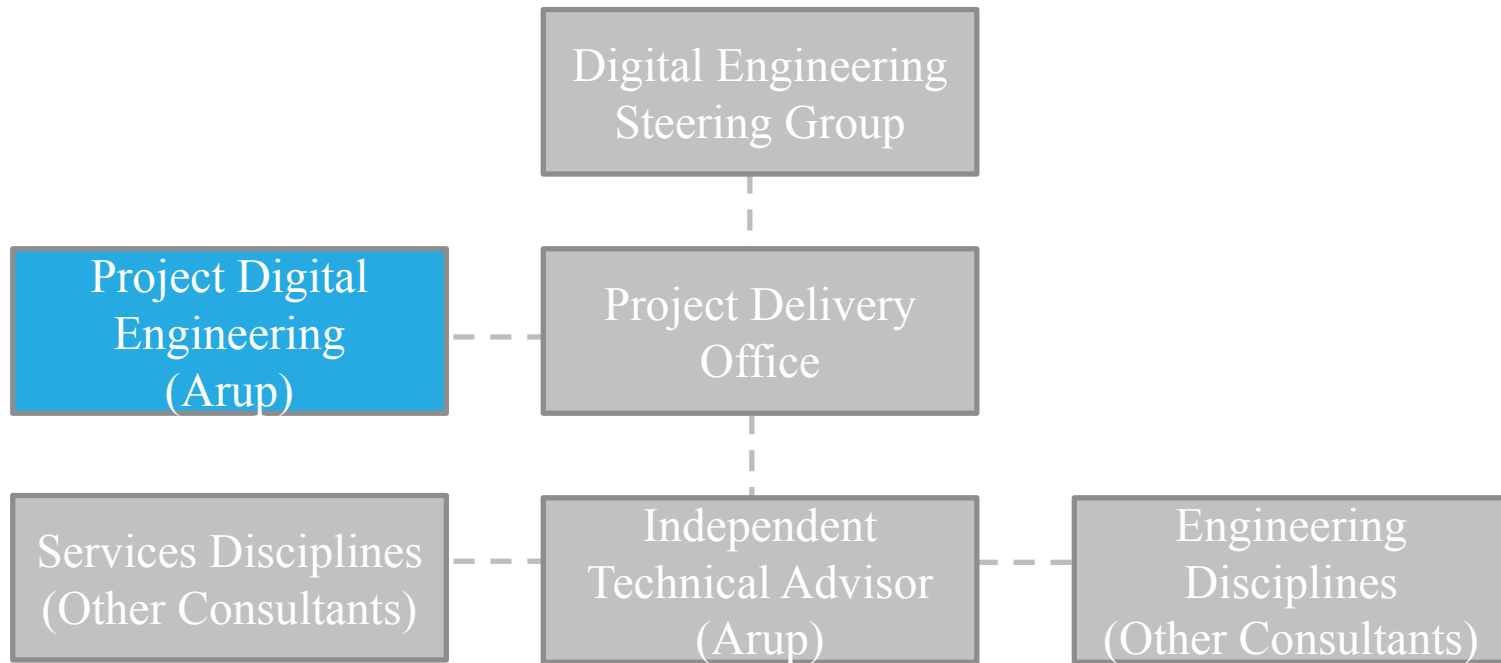
Information Value Chain



Platform approach: avoiding silos

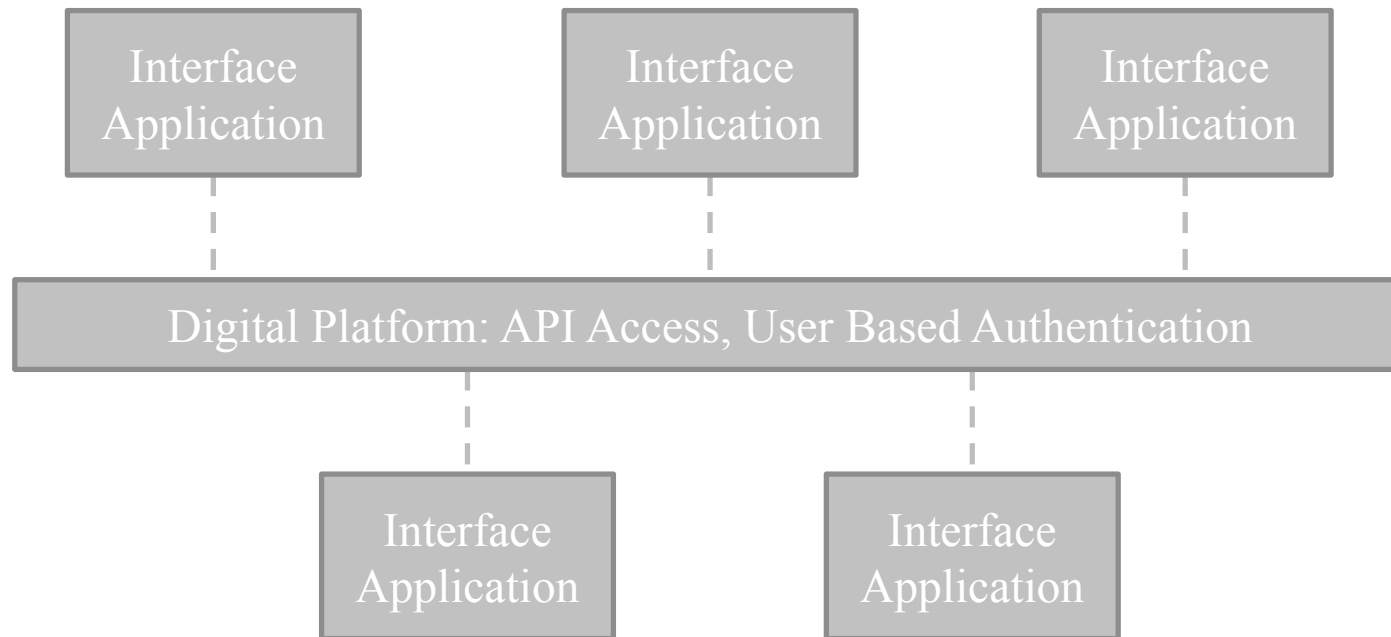


A new Governance model

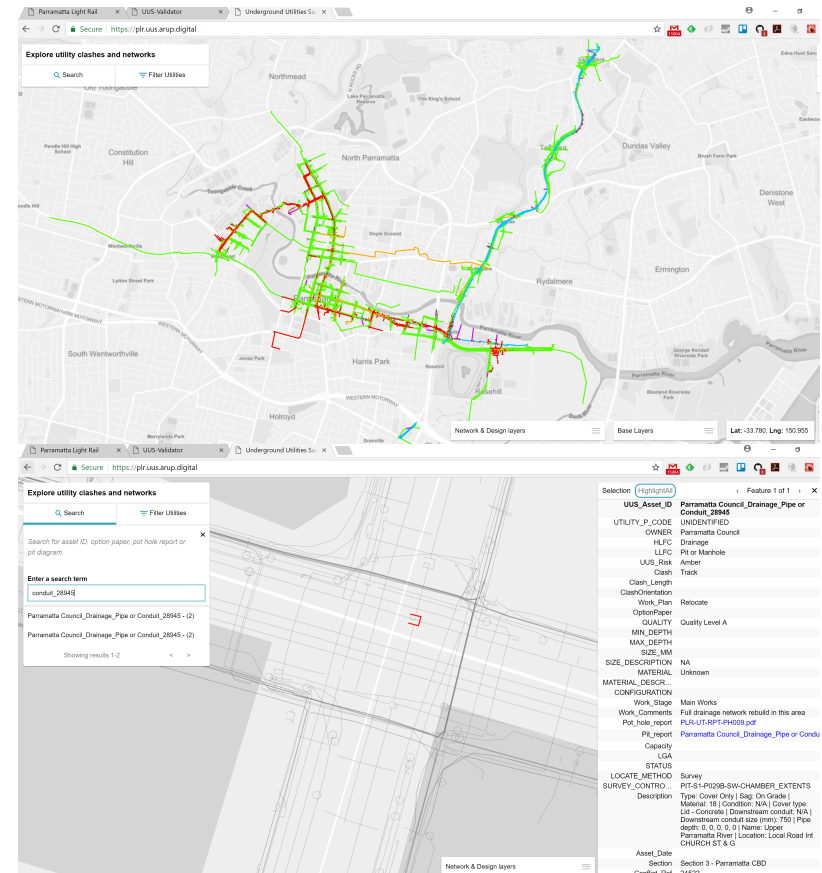
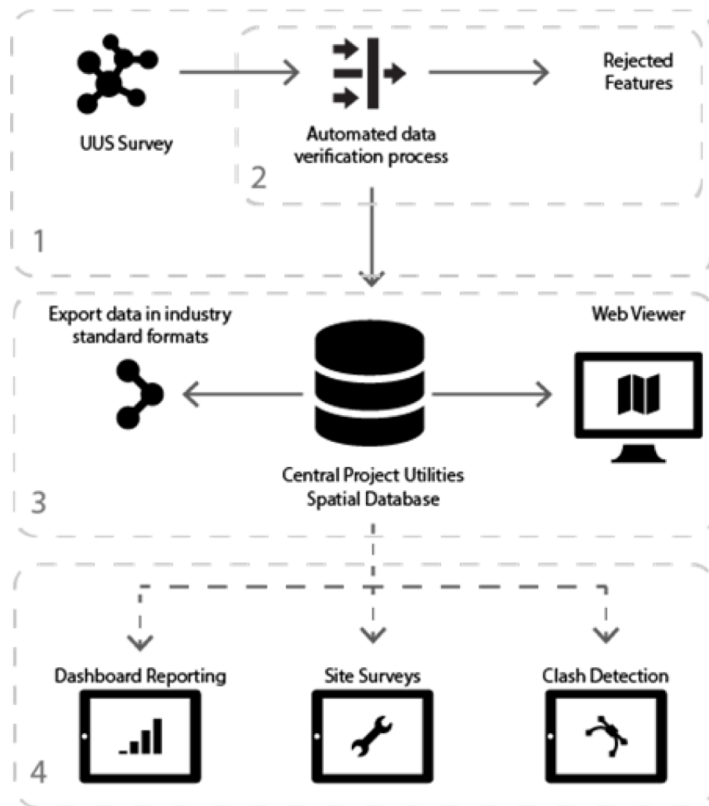


User Centred Design

bespoke applications for specific users and functions, not driven by capabilities of software but needs of users



Original brief – a utilities data management platform



Thanks!