GIS as Spatial Engineering

Kate Tunstall, GIS Analyst
Engineering Projects

- Flood defence schemes
- Highways
- Surface water management
- Rail
- Sewer management
- Site development
- Bridges
Multi-disciplinary
Can create isolated work patterns
Working in ‘silos’
The Information Flow
Role of GIS

- Acts as a central hub for all data related to a project
- Conduit through which all data/information passes between team members
- Platform for implementing standards across a project
But what about BIM…. 

**GIS:** Geographic **INFORMATION** Systems

Vs

**BIM:** Building **INFORMATION** Modelling

*Built Environment*
But what about BIM….

GIS: Geographic INFORMATION Systems

Vs

BIM: Building INFORMATION Modelling

What’s in the word “building”?
Building as a thing?
Building as a process?

Built Environment
But what about BIM….

GIS: Geographic INFORMATION Systems

Spatial Information Management

BIM: Building INFORMATION Modelling

Built Environment

What’s in the word “building”?
Building as a thing?
Building as a process?
But what about BIM…. 

GIS: Geographic INFORMATION Systems 
Spatial Information Management 
Asset Management 

BIM: Building INFORMATION Modelling 
Built Environment 

What’s in the word “building”? 
Building as a thing? 
Building as a process?
What do all of these have in common?

- Flood defence schemes
- Highways
- Rail
- Sewer management
- Surface water management
- Site development
- Bridges
What do all of these have in common?

- Flood defence schemes
- Rail
- Highways
- Site development
- Water management
- Surface water management
- Bridges
- Site development
- Water management
- Surface water management
- Bridges
It’s all about integration

Information about assets
It’s all about integration

Big Data

Information about assets
What is the role of GIS?

- Data visualisation?
- Data sourcing?
- Data analysis?
- Data conversions?
- Data management?
What is the role of GIS?
GIS and Engineering

Assets

Information

Engineering
GIS and Engineering

- Assets
- Information
- Spatial Services

Engineering
GIS and Engineering

Large Engineering Project

- Geotechnics
- Rail
- Environmental
- Bridge
- Noise
- Water
GIS and Engineering

Large Engineering Project

- Geotechnics
- Rail
- Environmental
- Water
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Spatial Engineering
GIS as Spatial Engineering

Spatial Engineering

- Geotechnics
- Rail
- Environmental
- Bridge
- Noise
- Water
Barriers

- Common misconception of GIS. Not just a pretty map!
- GIS and BIM are not at war with each other
- Engaging all disciplines and overcoming preconceived ideas
- Promoting understanding of full capabilities
Questions?

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