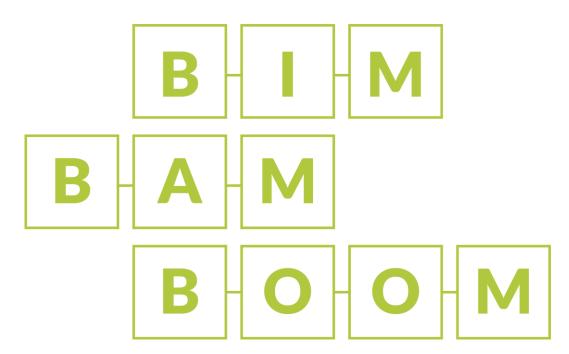
### WHAT IS DE & BIM?







## DATA, DATA, DATA, DATA

Big Data, lot...

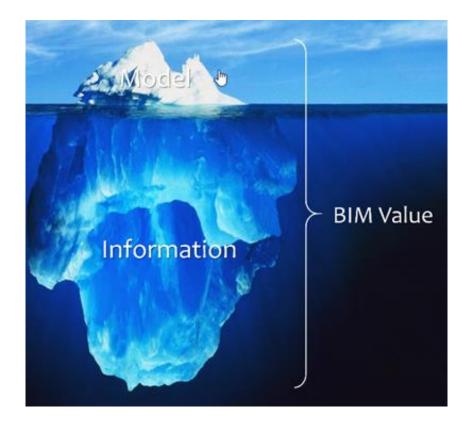






#### Connect with

Anyone Anywhere Anytime!







## ARE YOU READY?

How do I get ready? & What does this mean to me?

How do I take advantage of the information that's available? How do we exploit data ?

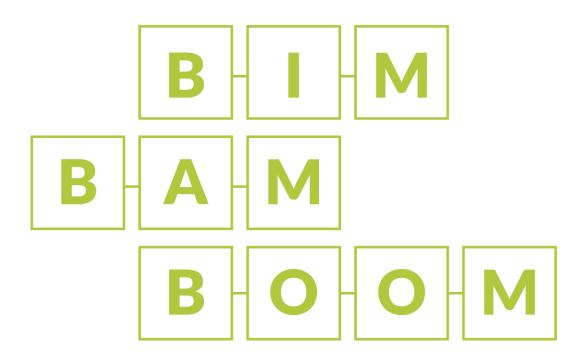






#### Its about.....

Using Data in every step of the way!









#### WHAT IS DE?

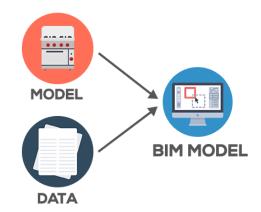
#### **Digital Engineering**

- GIS
- BIM
- Assets

#### **Building Information Modelling (BIM)** is a digital representation of a physical &

functional characteristics of a facility.

A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during it's life cycle, defined as existing from earliest conception to demolition.

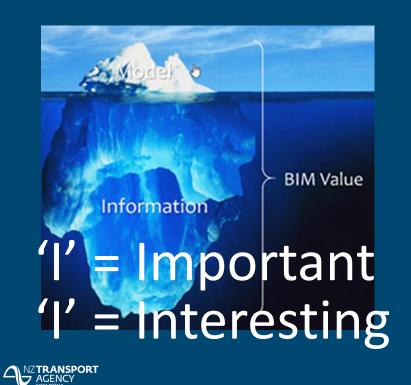




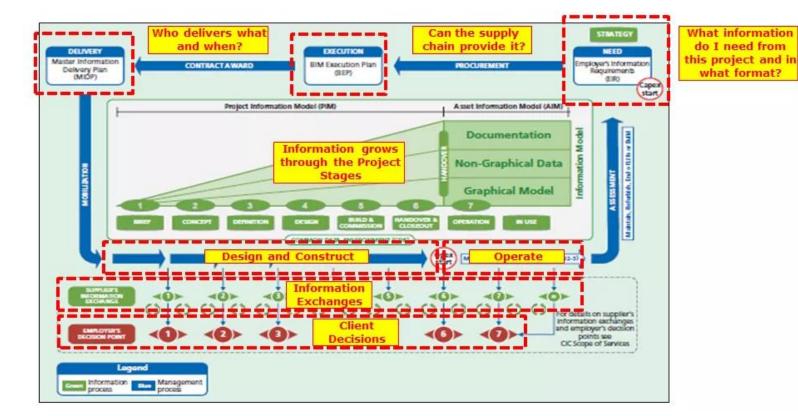


#### B 'I' M = INFORMATION

Data has not been modified to allow the greater capabilities of BIM to be exploited!



# Yes BIM being used specific sites



No agreed 'Asbuilt data' standard

#### To specify the asbuilt data Standard

Using common language!

## FULLY LEVERAGED!

#### **Digital Engineering for Transport**

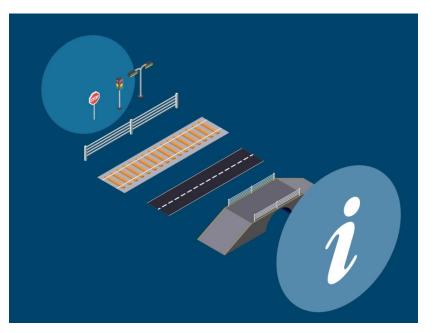






## But why is this so important?





#### **Process of Building!**

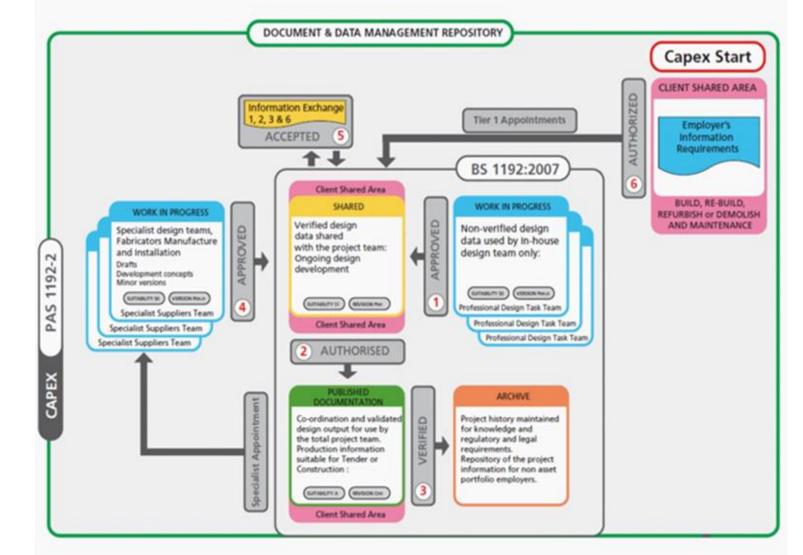
Array of professionals! Different kinds Who make it all happen!







#### Each handover, from one group to the next!





#### Secondly!!!!

## Form of English

Professionals have their Quirks & TLA's Professional jargon

## We all talking our own language



https://www.youtube.com/watch?v=g\_jmGQvr6dQ





#### These are the issues DE sets out to address

More Intelligently, More Collaboratively, More informed Way!

&



By Modelling the infrastructure!

#### Available to all Stakeholders!





#### Start Working off the same page

Professional Group become the contributor



Spatial environment, adding discipline specific data to single shared Model!

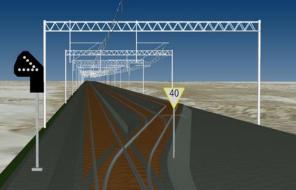


### OLD DAYS VS NEW DAYS













#### **DE GOES FURTHER THAN 3D**

20

VECTOR

PRODUCTION

DOCUMENTATION

IOWS AND PLANS

PARAMETERIZATION FILE MANAGEMENT COMMUNICATIONS

SCOPE DEPINITION MATERIALS STRUCTURAL LOADS ENERGY LOADS

MPLEMENTATION

DS DEVELOPMENT -ROOM DATA SHEETS -LIST OF DELIVERABLES

SUSTAINABILITY -UPE CYCLE ESTIMATION -CONSTRUCTION SOLUTIONE -PRIMARY MEP SYSTEMS -CONTRICATION STRATEGIES

SCRATCH POINT

RESEARCH EDUITING CONDITIONE PEDULATIONE WEATHER EIMULATIONE AUN ORENTATION FUNCTIONAL PROGRAM

**MPLEMENTATION** CONTUNTING BIN EXECUTION PLAN SERVER REPORTORY SOFTWARE

CONCEPT DESIGN

STRATEGIES AREA ESTIMATION COST ESTIMATION ORNERAL VOLUMETRY ACCENDILITY VERSION

6 SHAPE



REPRESENTATION RENDERINGS LABER SCANNING

**MPLEMENTATION** BIM OBJECT CREATION

VISUAL PROGRAMMING CLASH DETECTION MODELCHECKER

FINAL DOCS DETAILED DESIGN

ASSEMBLIES STRUCTURAL DEBIGN PECIFICATIONS

SUSTAINABILITY

INSOLATION VALUES DAYLIGHT TEQUIREMENTS

#### 40 TIME



PRODUCTION -MODEL FEDERATION -MODEL FEDERATION -SOMEDULING -SOMEDULING -PROJECT PRASING -TIME LINING -CONSTRUCTION PLANNING -CONSTRUCTION PLANNING -CONSTRUCTION PLANNING -CONSTRUCTION PLANNING -CONSTRUCTION

SYSTEMS

-PREFABRICATION STRUCTURAL CONSTRUCTION -MEP CONSTRUCTION

SIMULATIONS

-UPE OYOLE BIMULATION -BUN BIMULATIONS -WIND SIMULATIONS -ENERGY BIMULATIONS -CERTIFICATION CHECK





PRODUCTION -DUANTITY EXTRACTIONS -DETAILED BILL OF -OUANTITIES -FABRICATION MODELS

CONTRACTS -PEES COMPARISON TRADE SELECTION -LOGISTICS

SUSTAINABILITY -CERTIFICATION EVALUATION -LIFE CYCLE COST -COMPARATIVE STUDY

#### **a** PERFORMANC



RESULTS KNOWN ALTERNATIVES CERTIFICATION AUDITED SHI MODEL PERFORMANCE REPORT

#### VALUE

ENGINEERING SIMULATIONS ENERGY PERFORMANCE SYSTEMS PERFORMACE ARCHITECTURAL PERFORMANCE CONSTRUCTION PERFORMED

#### SAVE ESTIMATIO

COMPARATIVE COST CONSTRUCTION BENEL RETURN ON INVESTIME TIMING RISK SELECTED ITEMS TO BE OPTIMIZED

RE-DESIGN CERTIFIED SIM MODEL



#### Back to Gis! This is Fundamental to DE!

GIS & BIM We create multiple dimensions

Develop not JUST a 3D Model but a SPATIAL environment!

### Rich data linked with it!





DE becomes the single information source

> What, When, Why and How!

For all details about the infrastructure environment





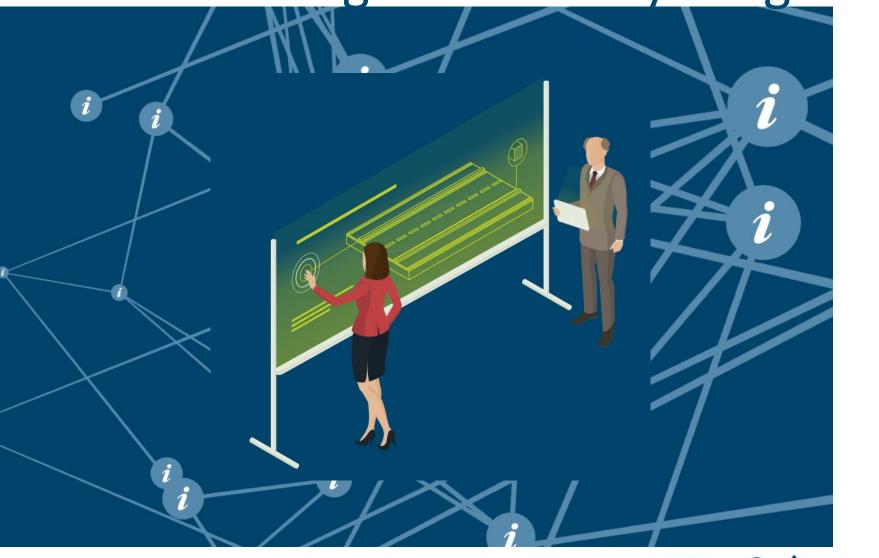


#### Now we talking about everything!

DE is about!

Capturing Sharing Analysing Presenting

**Digital Asset!** 





Provides Evidence for informed Asset management decisions

Access information from anywhere at anytime!

The infrastructure <u>description</u> and its location, geometry, condition, and performance

- Works and **inspection schedules**, delivery, impacts and observations
- <u>**Performance**</u>: infrastructure, activity, financial, ONRC
- <u>Controls</u>: environmental, capacity, access, statutory & regulatory
- Infrastructure and consequential service **<u>risk and management</u>**
- Data provenance and **<u>quality</u>**





Presented in different formats Parametric Geometric Images Documents

Accessible and meaningful to whoever needs it!

#### **Digital Engineering for Transport**



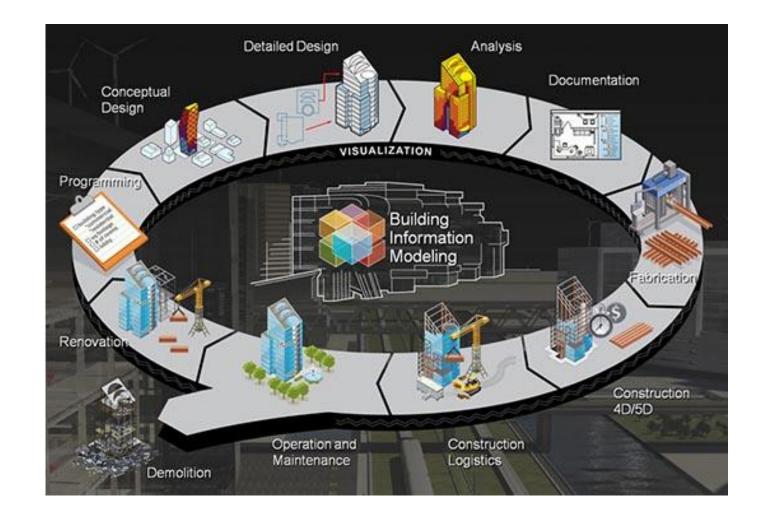
Working together!





## Common data Environment

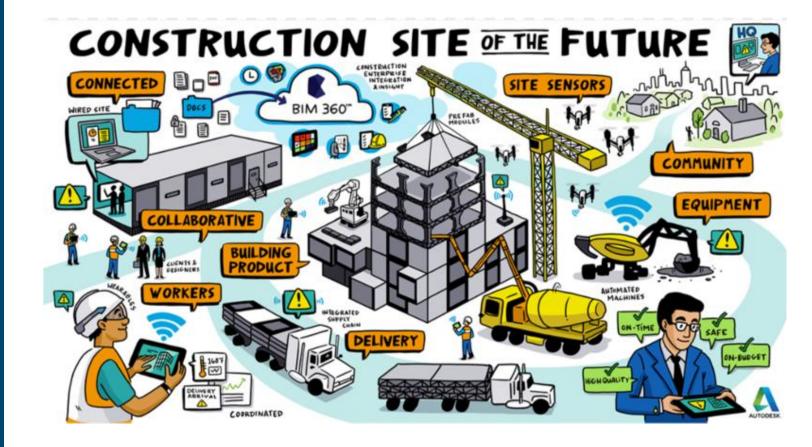
Linking information







## DE can revolutionize







## CAN'T MANAGE WHAT YOU CAN'T MEASURE

What should I be measuring and managing and more importantly where?





## THANK YOU!

