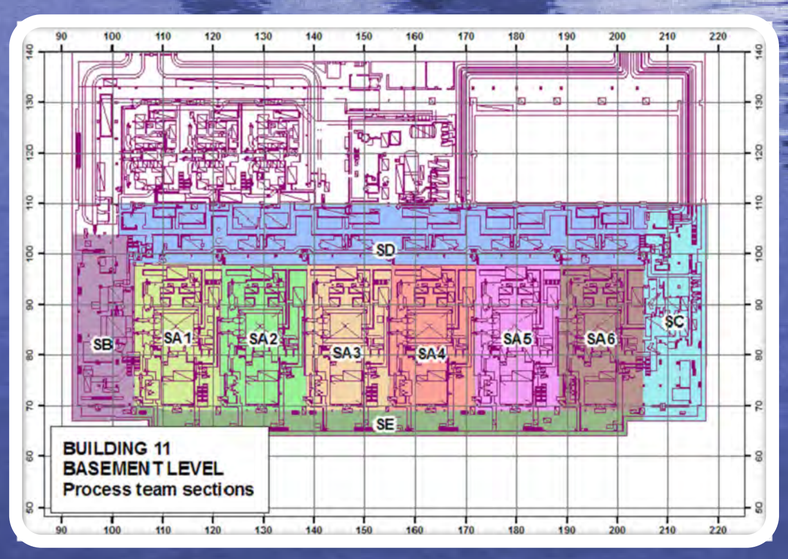
Planning for Sustainable Nuclear Decommissioning

Typical Project Scope

- ► Above ground decommissioning
- ► Full inventory of materials and waste
- ► Identify and quantify contamination
- ► Requirement to quantify waste for Integrated Waste Strategy

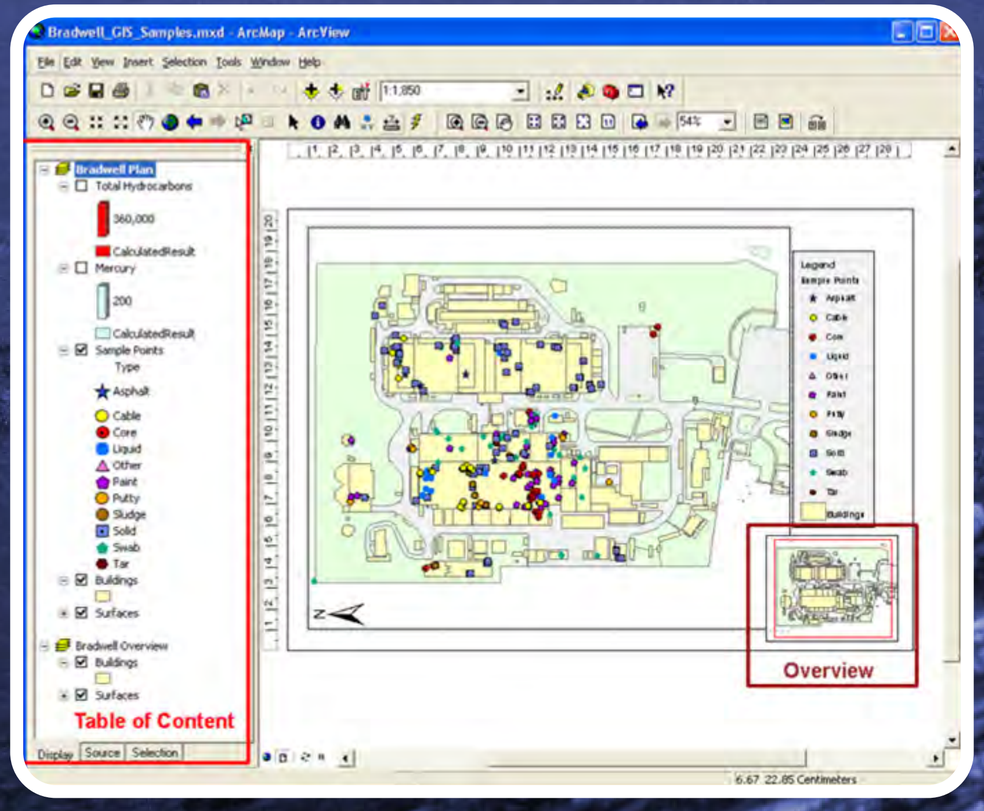
- ► Quantify and characterise all waste materials at decommissioning nuclear sites.
- ► Develop a database for all these data on a building and waste type basis



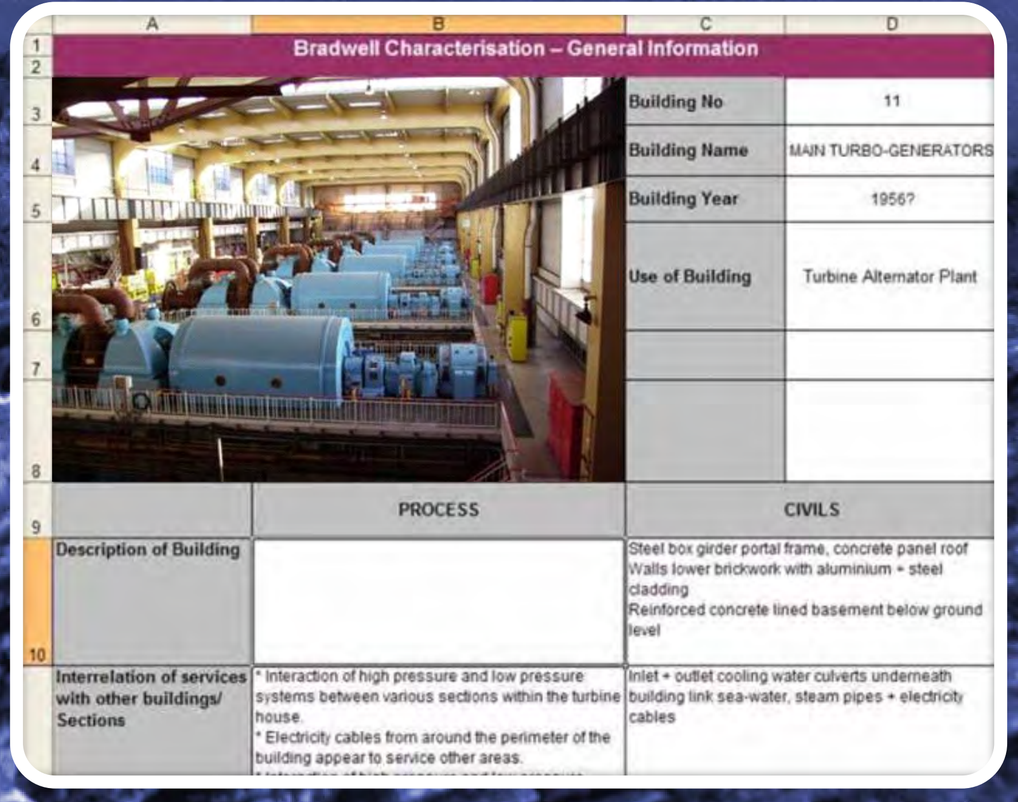
Quantify & characterise all materials resulting in more than:

- ► 100 buildings
- ► 50 different types of materials
- ► 350,000 t of materials
- ► 42 miles of pipes

Contamination Identifier



Building Packs Automatically Generated



Bradwell Characterisation – General Information

Building No	11	
Building Name	MAIN TURBO-GENERATORS	
Building Year	1956?	
Use of Building	Turbine Alternator Plant	
	PROCESS	CIVILS
Description of Building		Steel box girder portal frame, concrete panel roof Walls lower brickwork with aluminium + steel cladding Reinforced concrete lined basement below ground level
Interrelation of services with other buildings/ Sections	* Interaction of high pressure and low pressure systems between various sections within the turbine house. * Electricity cables from around the perimeter of the building appear to service other areas.	Inlet + outlet cooling water culverts underneath building link sea-water, steam pipes + electricity cables

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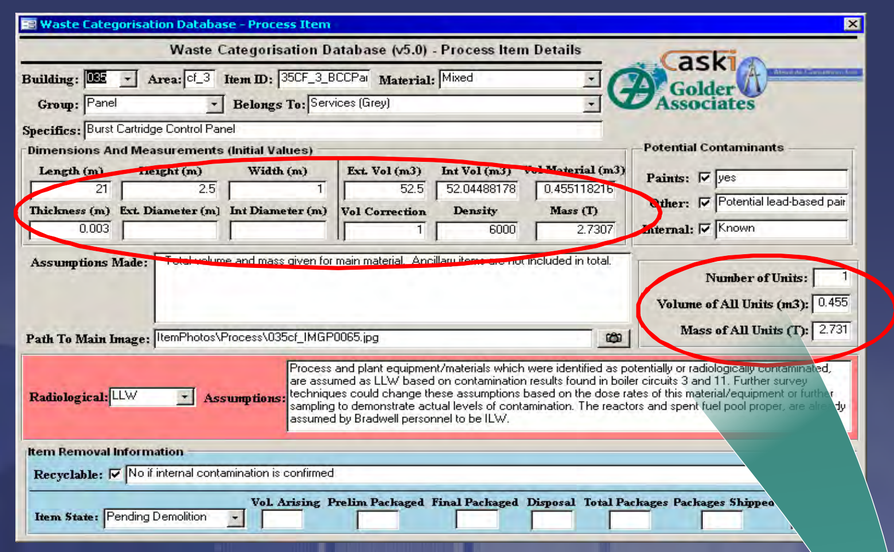
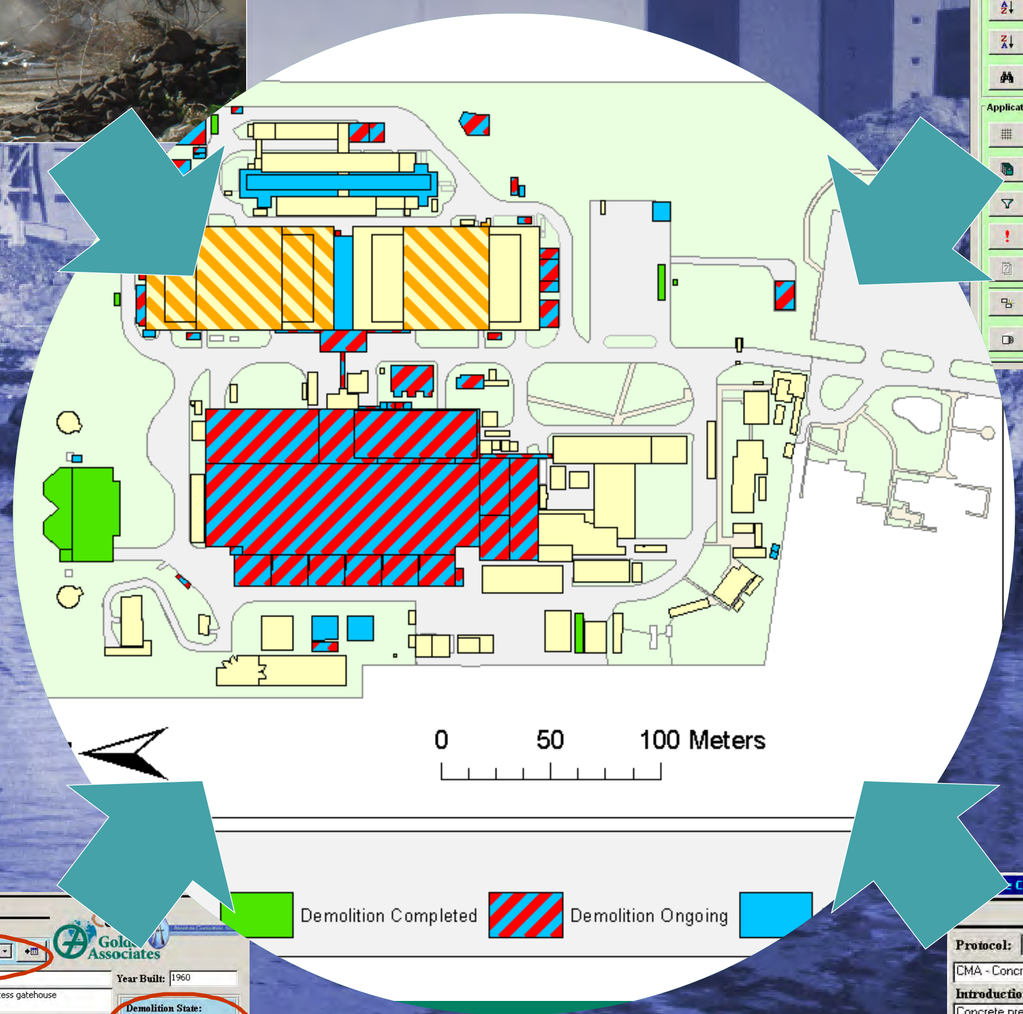
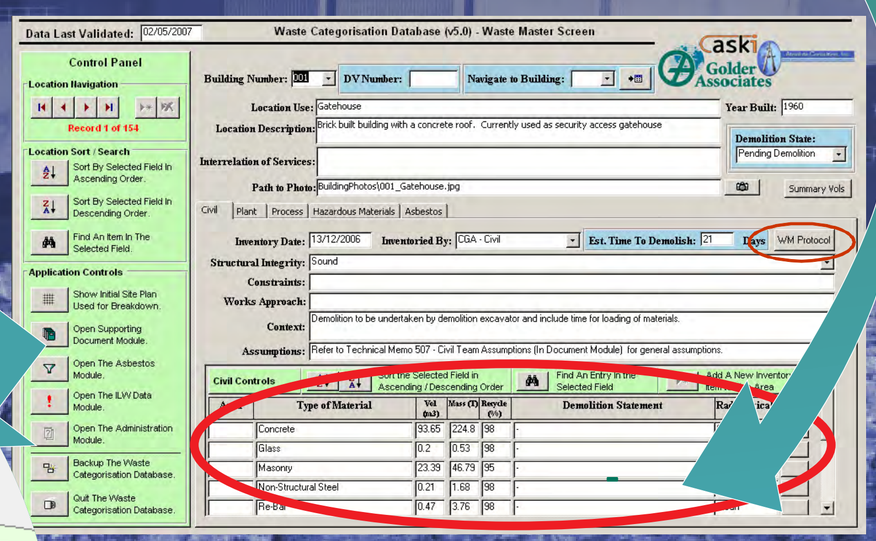
GIS Decommissioning Scheduling Tool

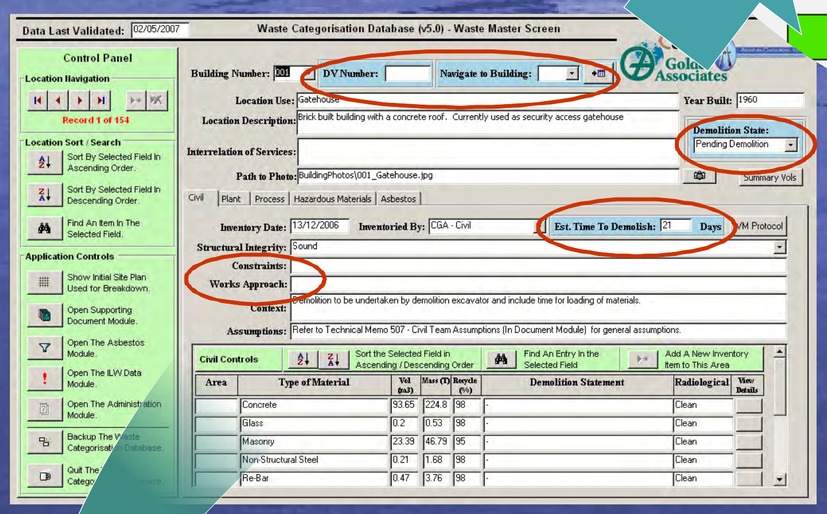
Decommissioning Costs



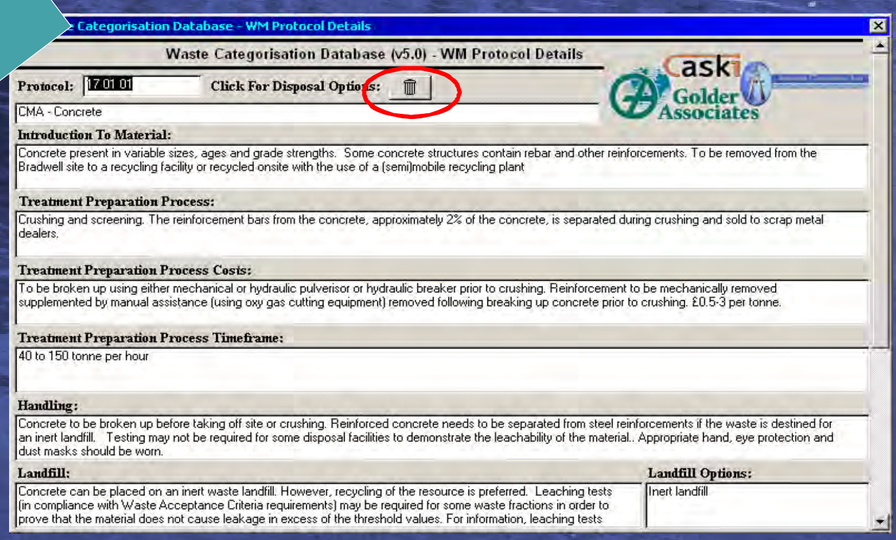
Waste Quantification and Characterisation Database







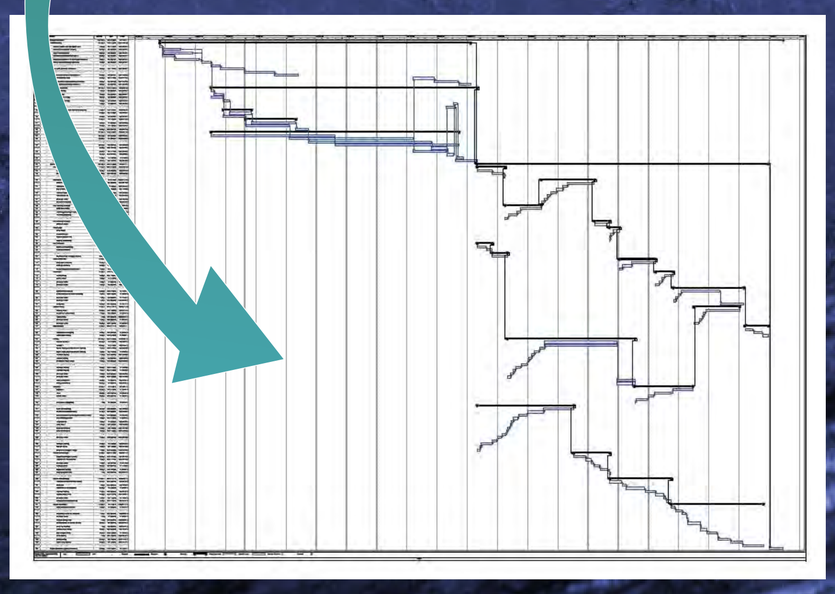
Decommissioning Schedule



Waste Management Protocols

Benefits

- Tender Documentation
- Centralised System
  - Less time, cost effort
- Transparent & Auditable
- Strong Visualisation of Complex Scenarios
- Streamlined Reporting



Generate scheduled site activities as required

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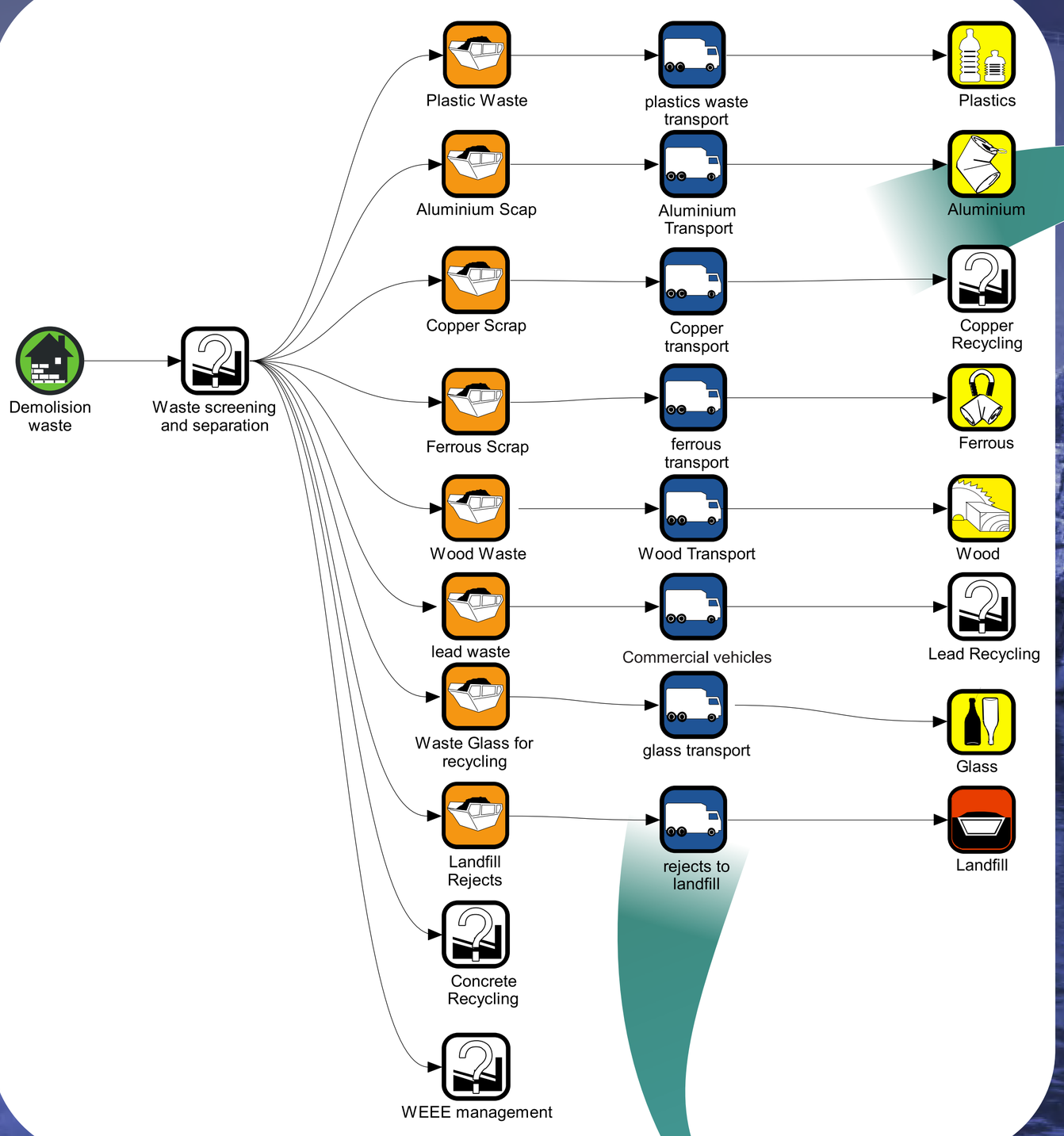
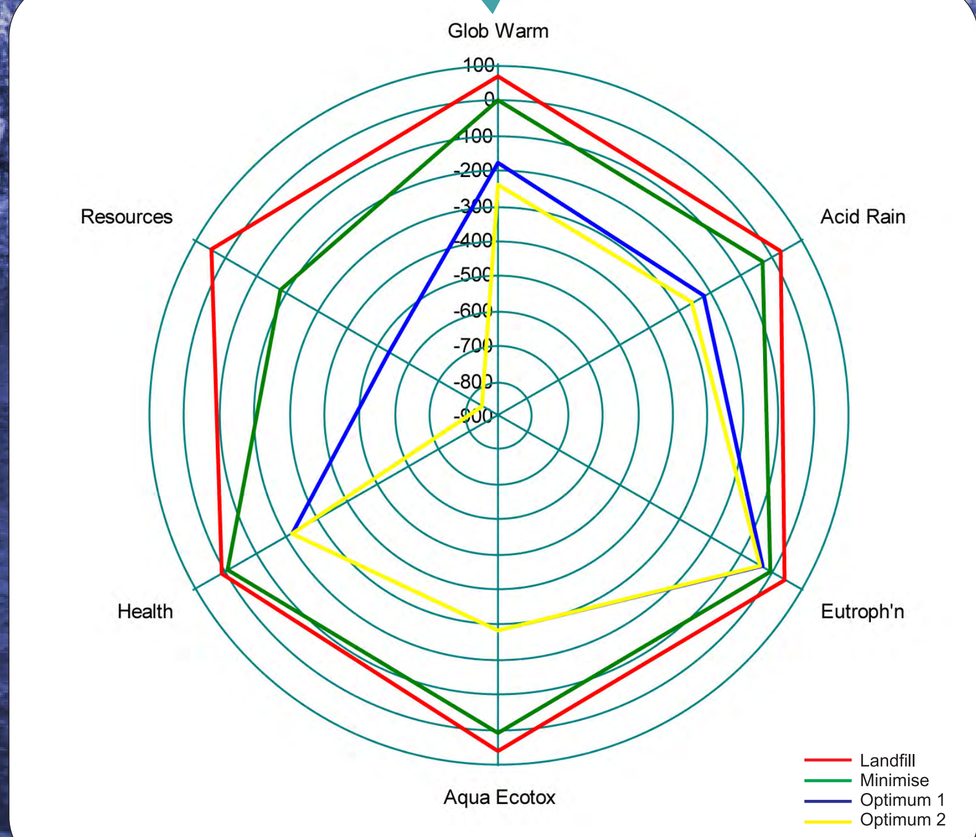
Planning for Sustainable Nuclear Decommissioning

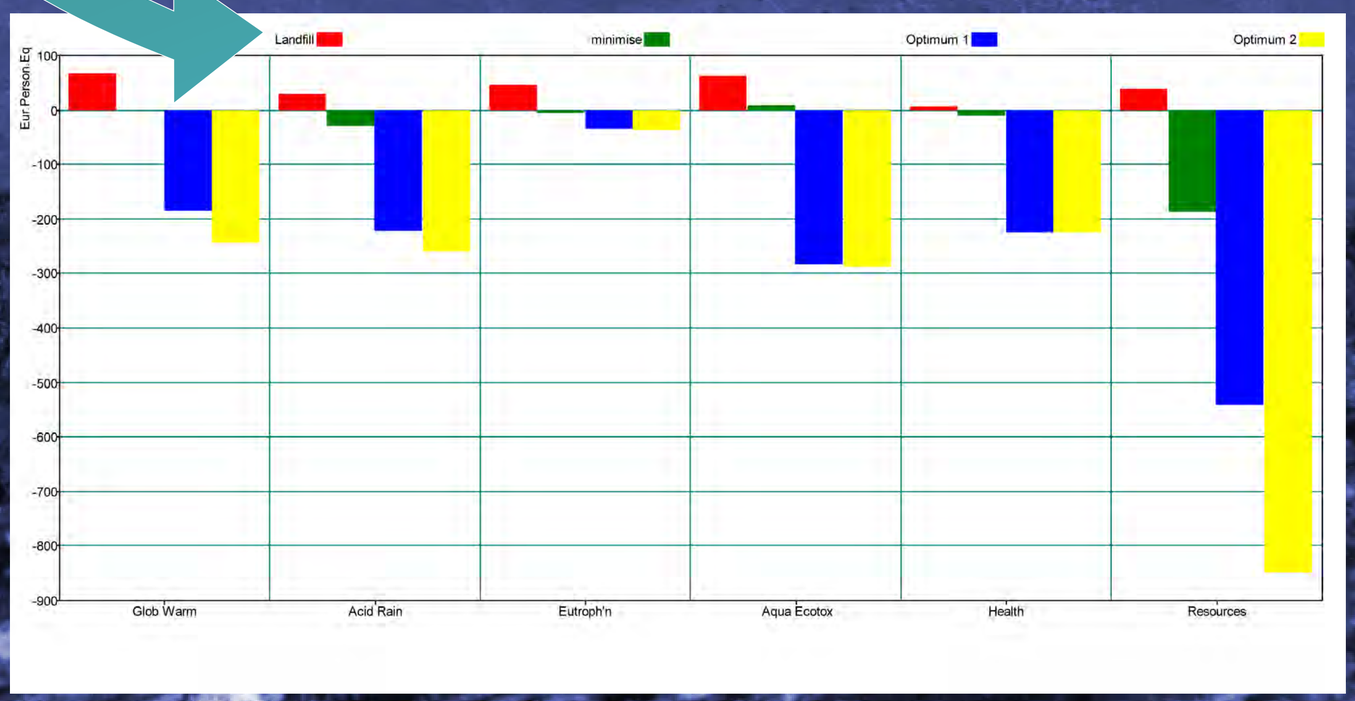
WRATE: A Life Cycle Assessment Tool for Nuclear Decommissioning?

Map the processes Involved in handling/treating the waste





Generate Indicator Specific Results for example Carbon Footprint of a decommissioning scenario



Key Attributes and Features of WRATE

- Monitors some 1000 environmental burdens (raw materials, emissions, burdens, off-sets and energy)
- It contains over 300 different Environmental Impact Assessment models (GWP, Ac, Htox, Aqtox, OzDP etc)
- It contains over 500,000 lines of computer code
- It is a 140 Mb install (primarily because of the meta-data that is included to assist in transparency).
- It **is easy** to use at the Standard Level
- It is **as complex** as you want to make it at the Expert Level

Compare scenarios

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