BIM Data to support a Circular Economy based approach to Retrofit

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Circular Economy for Buildings & Community
eliminating waste by maintaining a product/service at its highest utility value

Hierarchy

Digital
- Smart Use: data collection to improve user experiences/building optimization
- Smart Repair & Maintenance: IoT active monitoring/passive maintenance to optimize performance
- Smart Reuse: component use history
- Smart Recycling: material passports (cost transparency)

Hierarchy (Waste)
- Refurbish
- Repurpose
- Deconstruct & Reuse
- Demolish & Recycle

Actions
- Design to minimize waste & resource use
  - Design for Longevity
  - Design for Adaptability/Flexibility
- Design for Disassembly
  - Reduce
  - Reuse
  - Source sustainable/renewable
- Recovery
  - Take back scheme

Procurement

Adapted from Eivind Kristoffersen 2021
Smart Asset Management

Elemental Asset Data

Smart Controls/ Monitoring

- Systems Analysis

Occupant Feedback

- Occupant Reporting

Building Passports/ Asset Mgmt.

- Material Passports
- O&M Manuals
- 3D/ 2D Building Information

Digital Twin

AIM (Asset Information Model)
5-15 years