

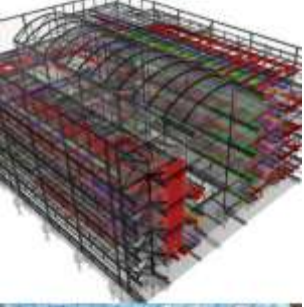
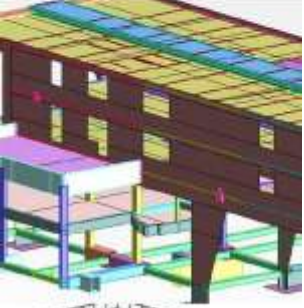
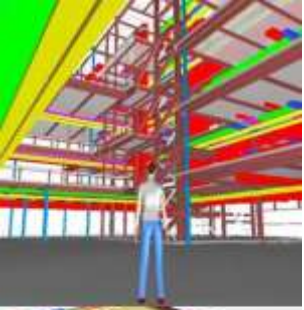
BIM at SKM



Nick Calvert
CPEng, MIPENZ, SESOC
Senior Structural Engineer

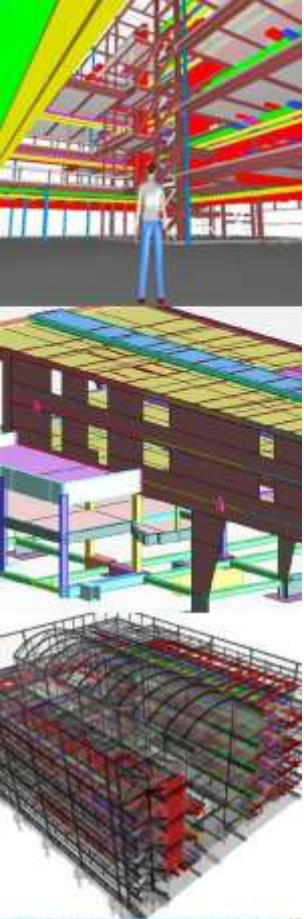
Outline

- About SKM
- Benefits of BIM
- Recent Projects

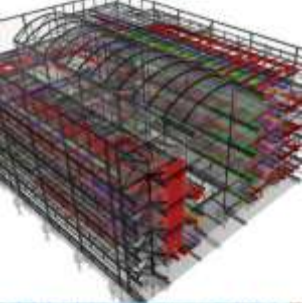
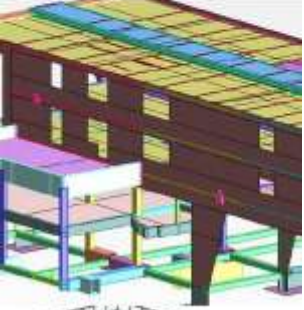
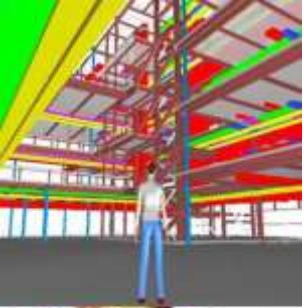


Sinclair Knight Merz

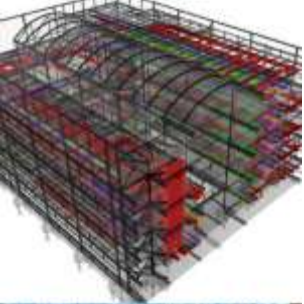
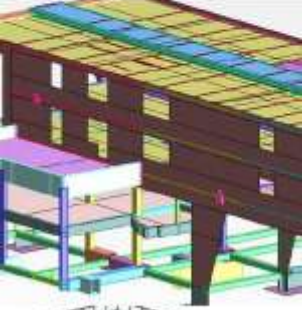
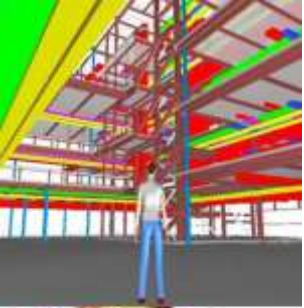
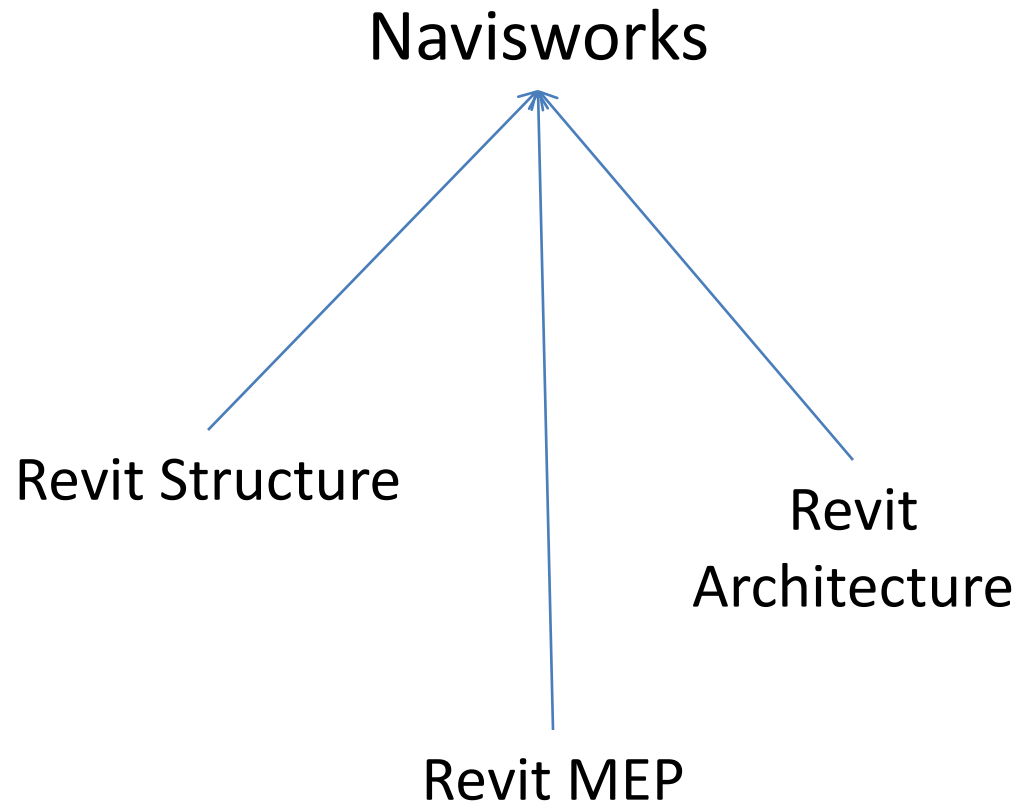
- ❑ 300 staff in NZ
- ❑ Strong local presence
- ❑ SKM in Christchurch for over 50 years.
- ❑ Multi-disciplinary consultant
- ❑ Actively using BIM software



Sinclair Knight Merz



SKM – Current BIM Software

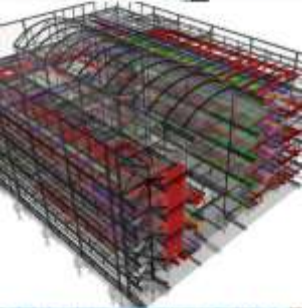
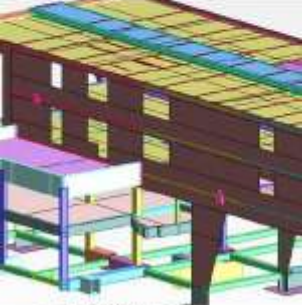
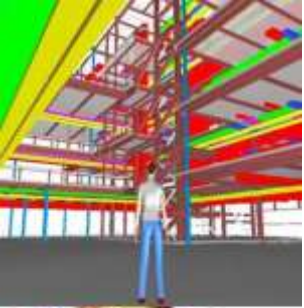


Some Benefits of BIM

- Links between CAD, analysis tools and suppliers BIM data
- Embedded information
 - Construction benefits
 - Operation benefits

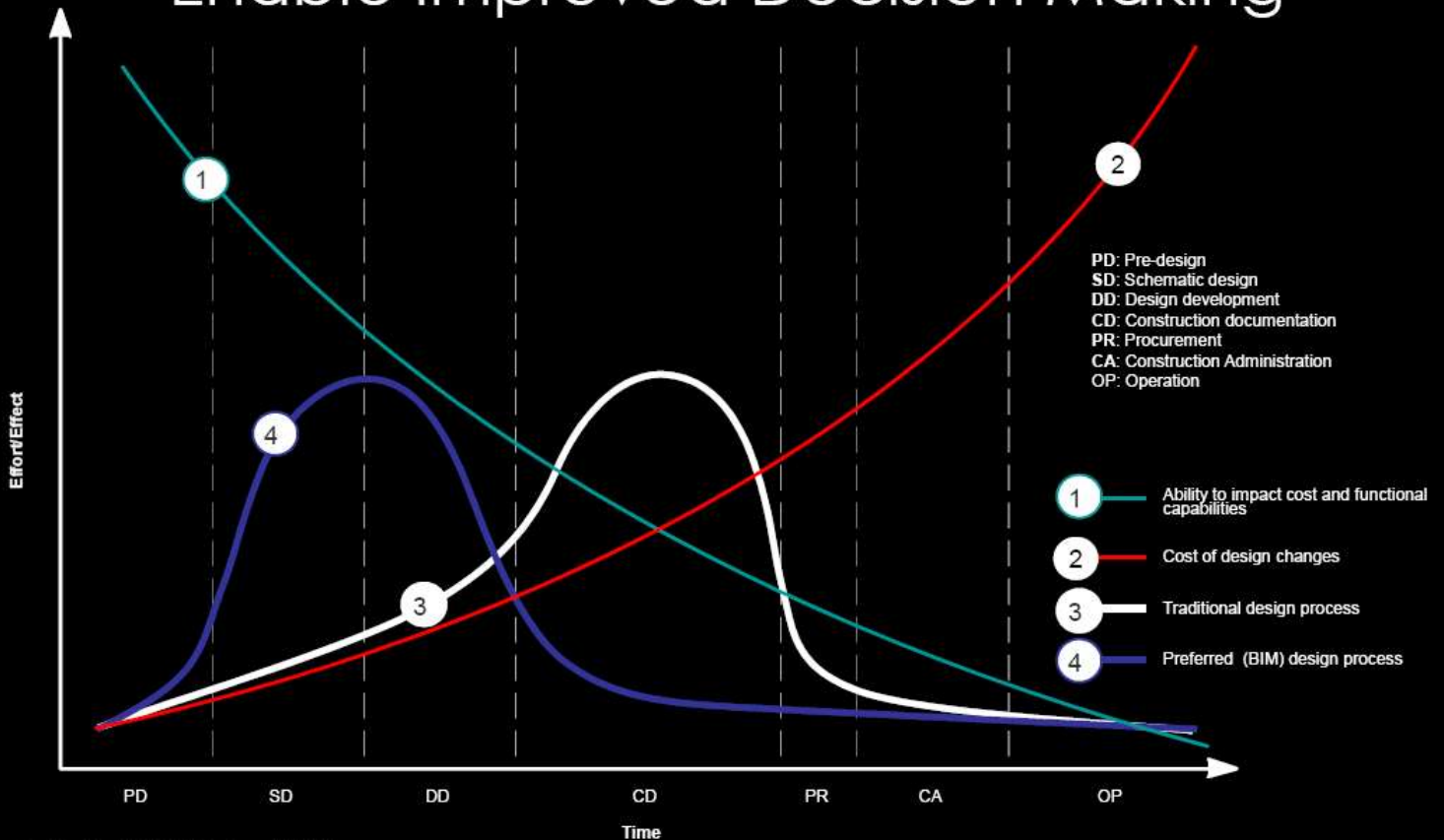
This functionality leads to:

- Cost and programme improvements
- Green buildings

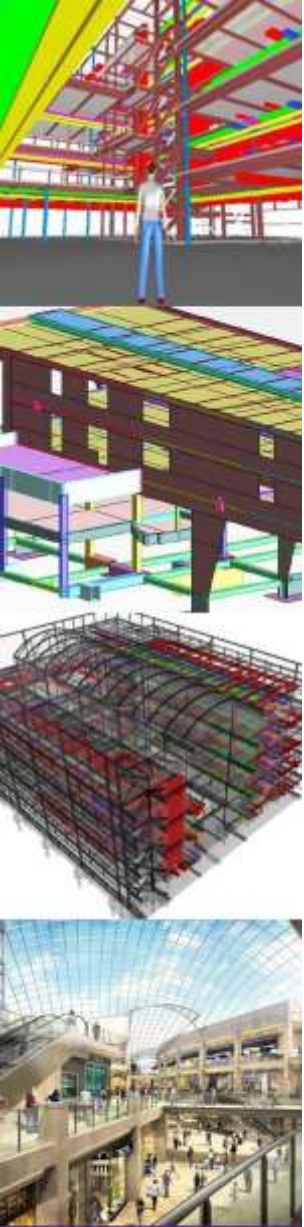


Some Benefits of BIM

Enable Improved Decision Making



Graphic originated by Patrick MacLeamy, AIA / HOK



Autodesk
Gold Partner

Autodesk
Authorized Training Center
Authorized Certification Center

Registered Reseller
hp WORKSTATIONS

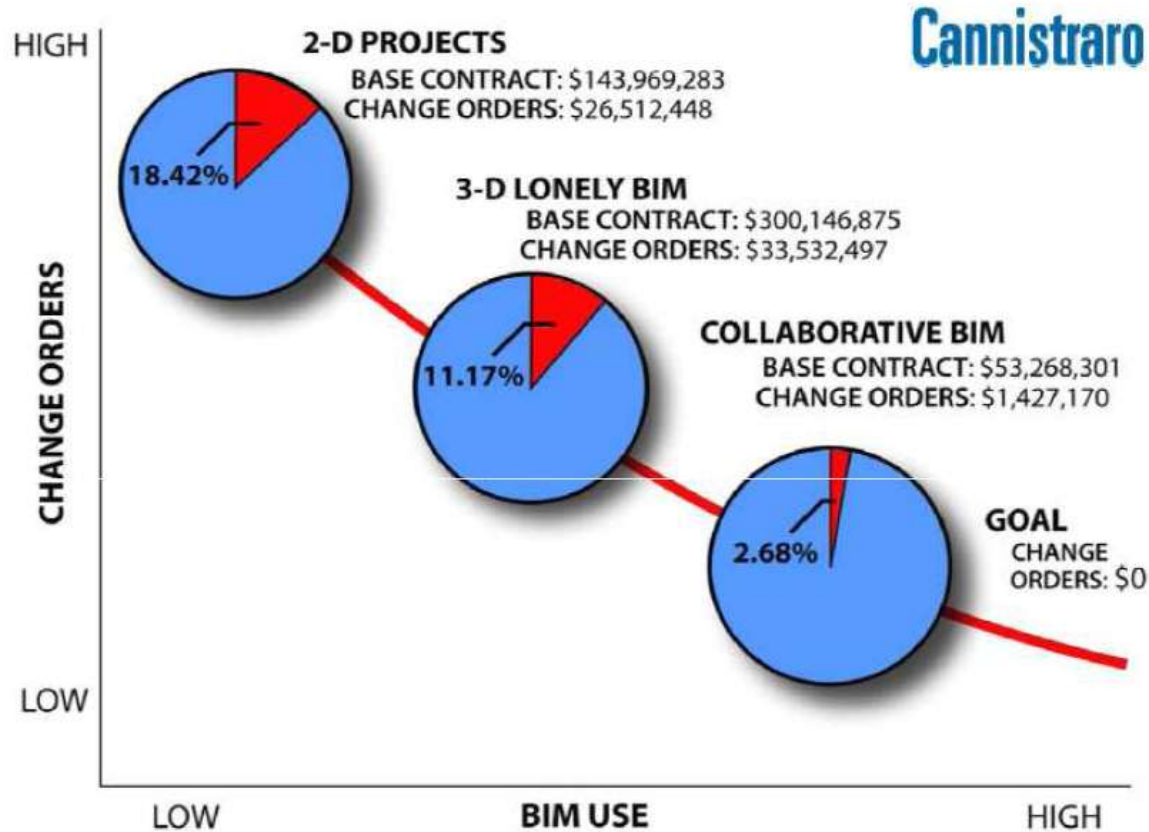
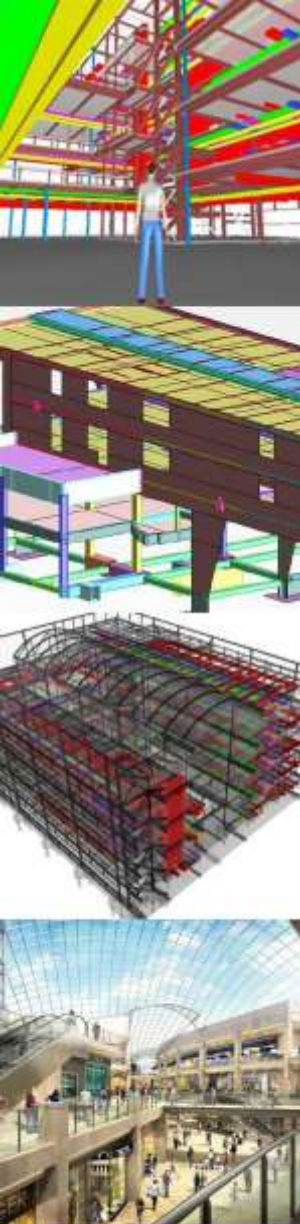
WISE

Phoenix PLM

Solution Partner
SIEMENS



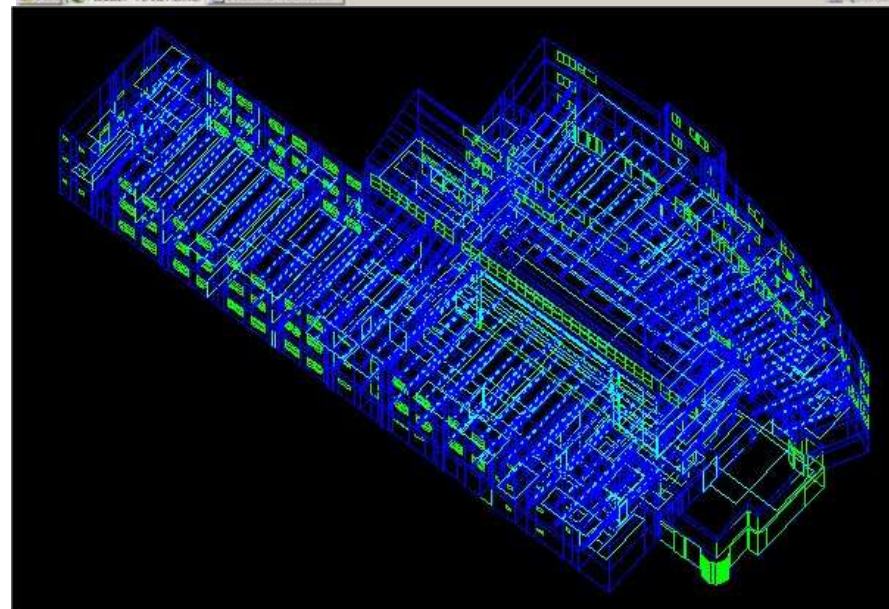
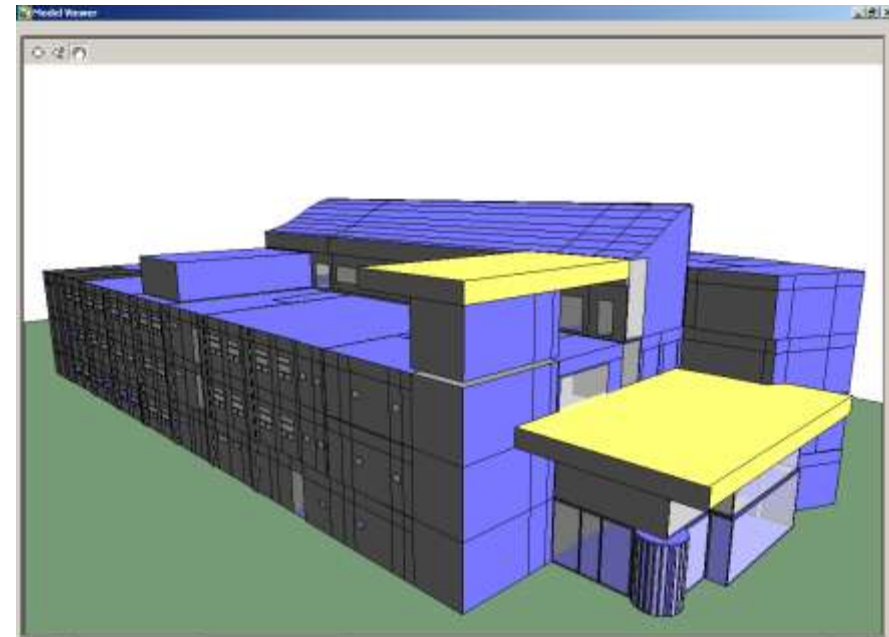
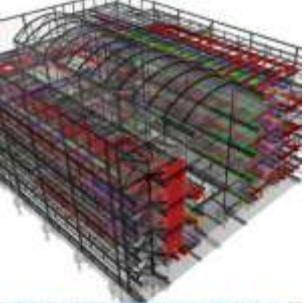
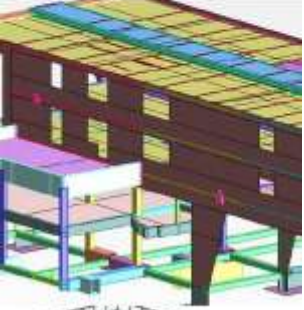
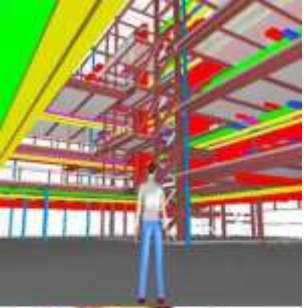
Some Benefits of BIM



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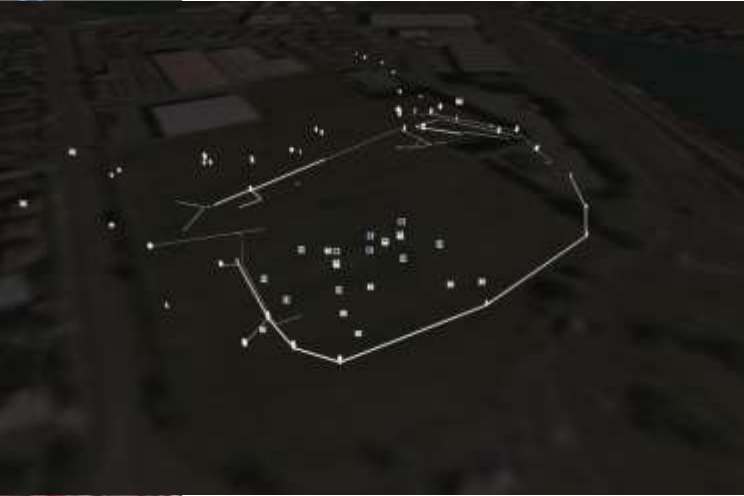
Design

- Thermal modelling
- Airflow modelling
- Daylight
- Acoustics
- Lighting
- Energy simulation
- Carbon emissions
- Embedded carbon
- Health and Safety
- Access and replacement
- Clash detection
- Communicating with structural analysis software



Combining Models

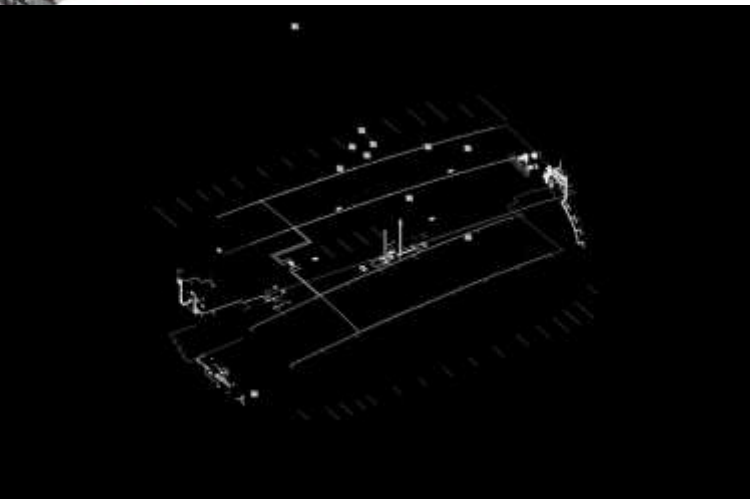
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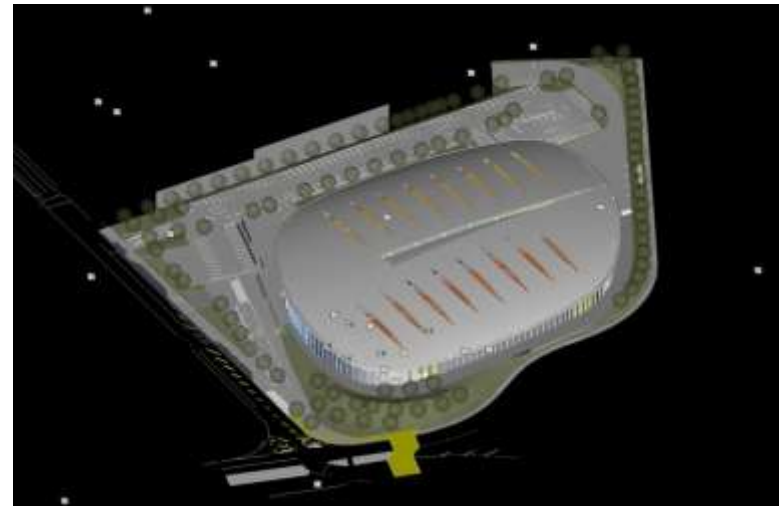
Structural



Building Services

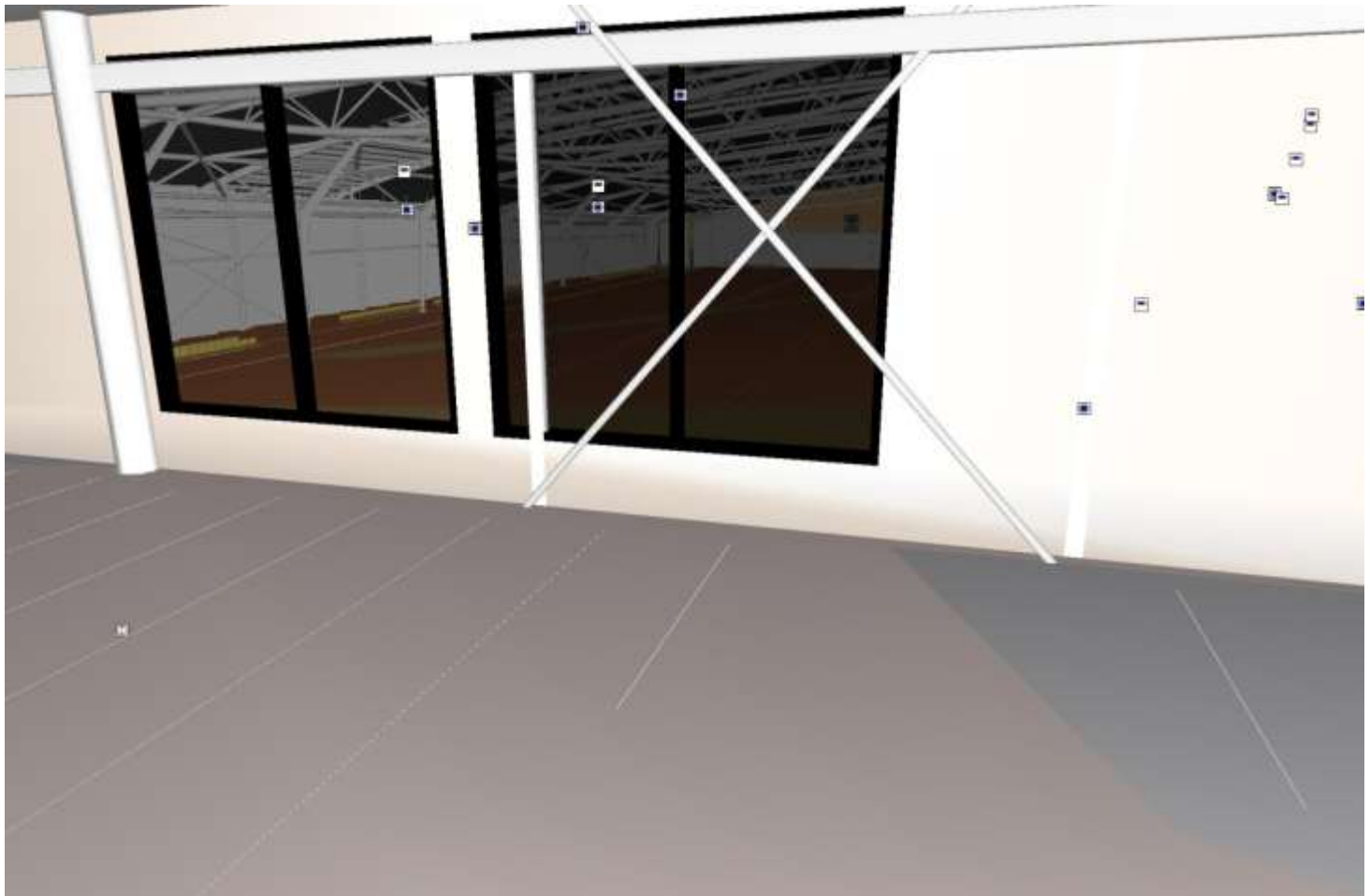
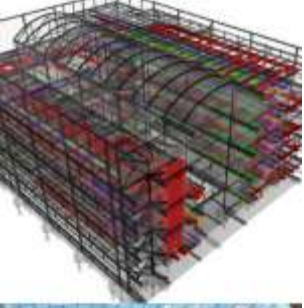
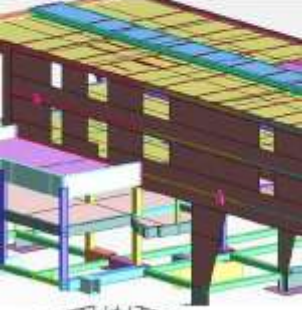
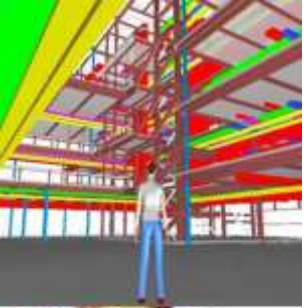


Architectural & Landscaping



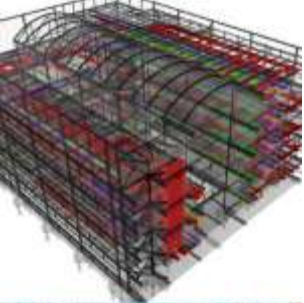
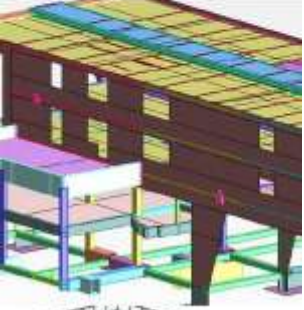
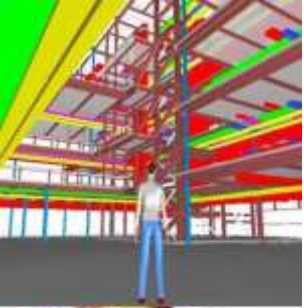
Clash Detection Tools

Visual – Walk through inside Navisworks



Construction

- Programming
- Plant access
- Commissioning plans
- Scheduling – take-offs
- Cost checks
- Competitive quotes
- Delivery dates
- Value engineering energy

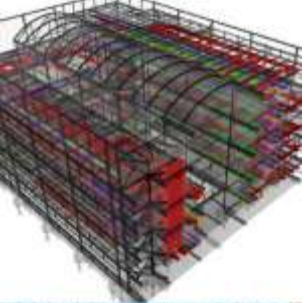
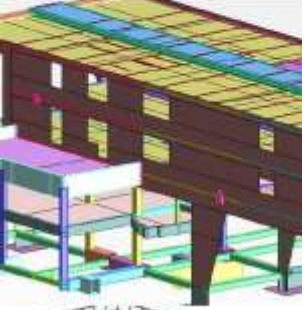
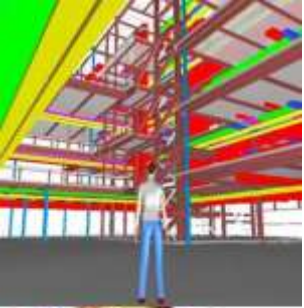


Operation

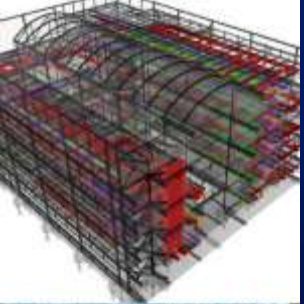
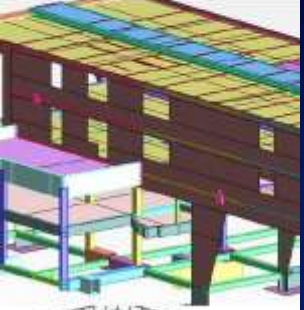
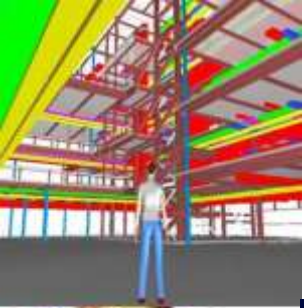
- Monitoring energy
- Carbon
- Post occupancy evaluation
- Educational data (web access)
- Water use
- Recycling
- Materials
- Transport – park and ride



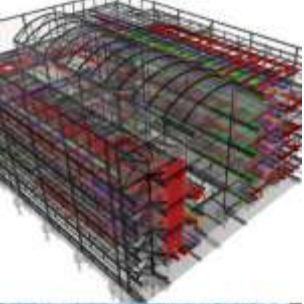
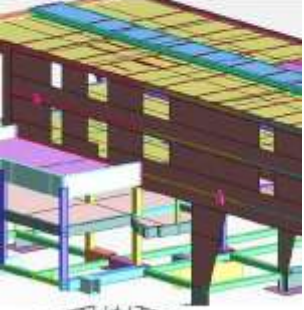
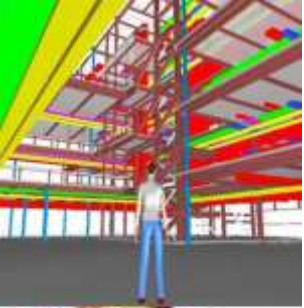
Southport Eco centre – zero carbon – 25kW wind turbine + ground source heat pumps + thermal mass heating + Natural Ventilation



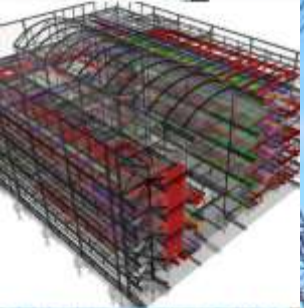
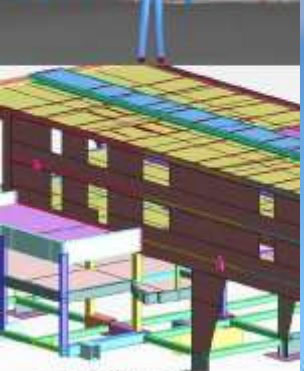
SKM - Recent Revit Projects Forsyth Barr Stadium (Dunedin)



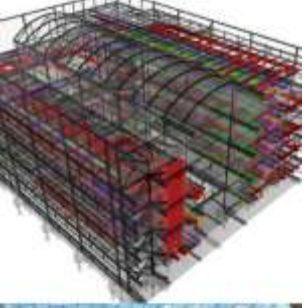
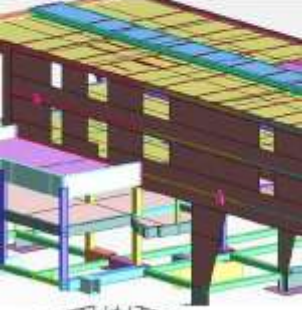
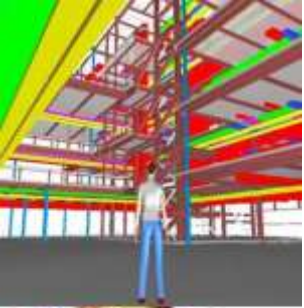
Forsyth Barr Stadium (Dunedin)



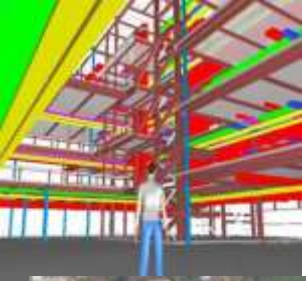
Forsyth Barr Stadium (Dunedin)



Forsyth Barr Stadium (Dunedin)



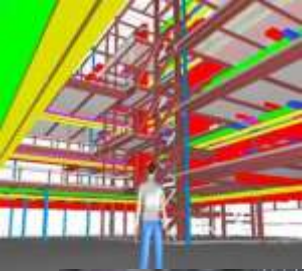
Forsyth Barr Stadium (Dunedin)



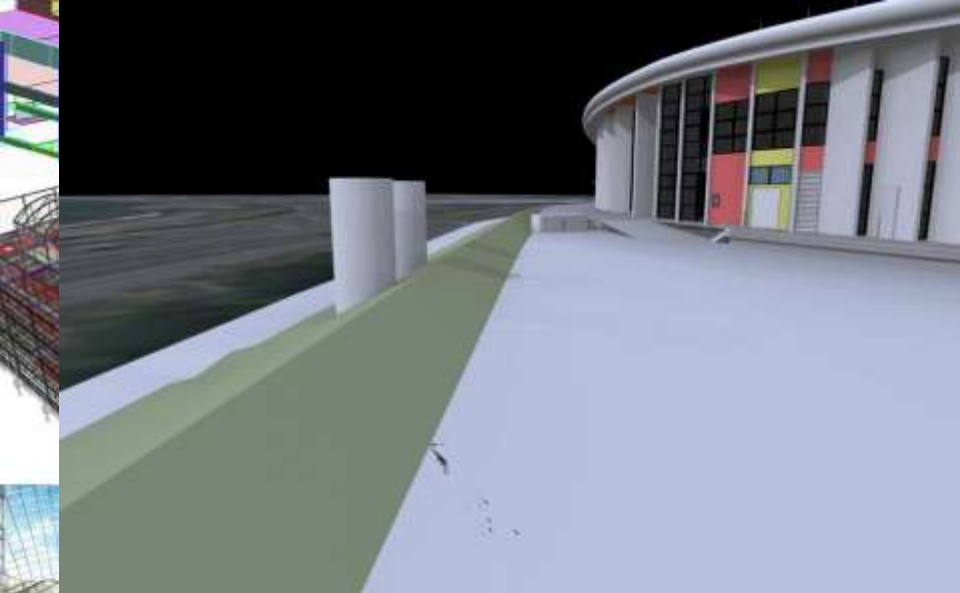
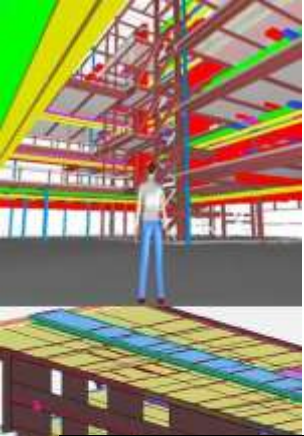
Wellington Indoor Sports Stadium



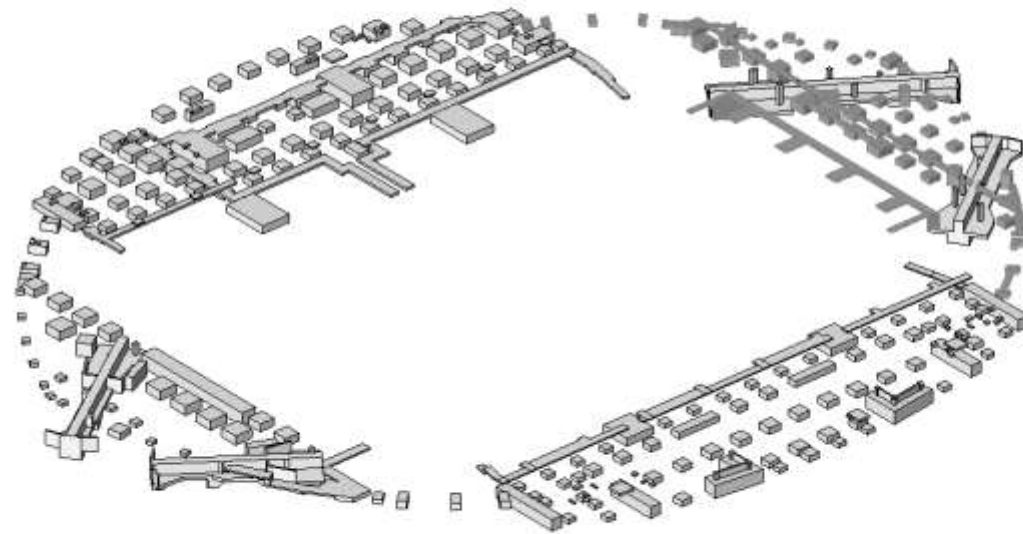
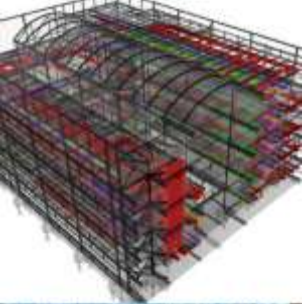
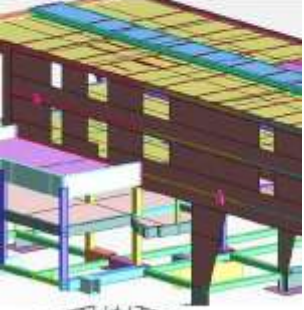
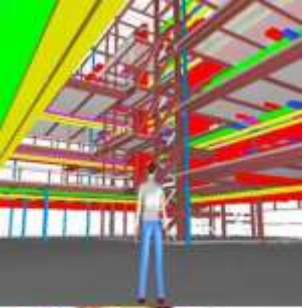
Wellington Indoor Sports Stadium - Rendered Images



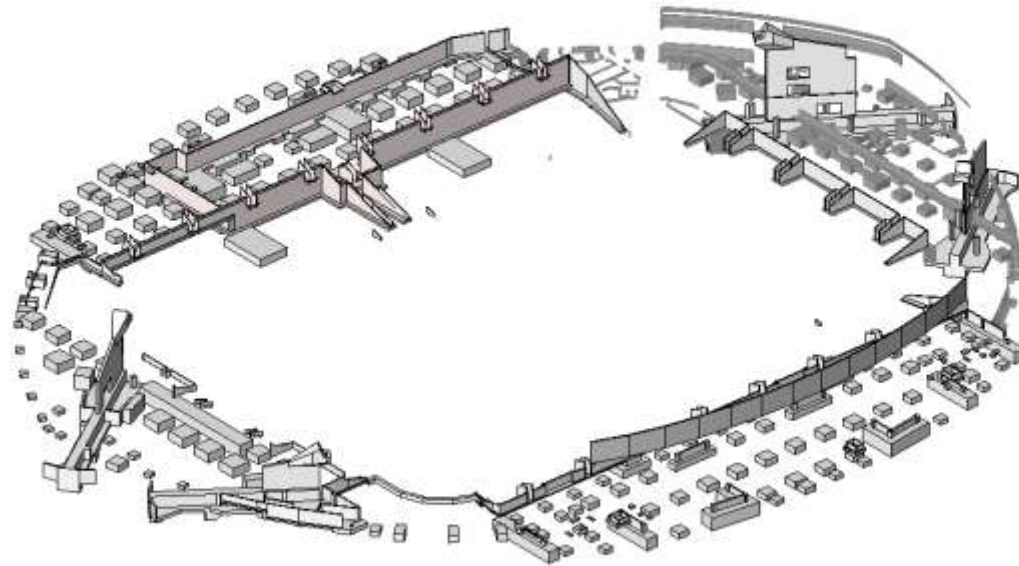
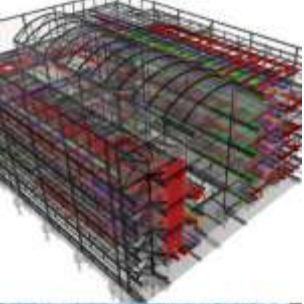
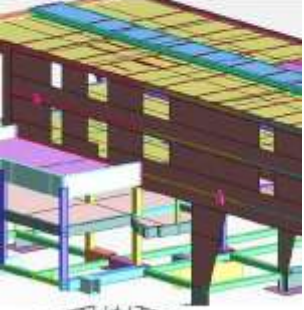
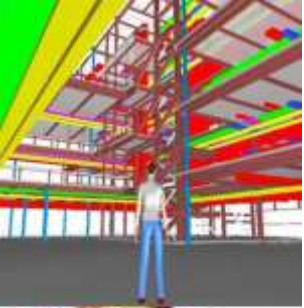
Wellington Indoor Sports Stadium - Rendered Images



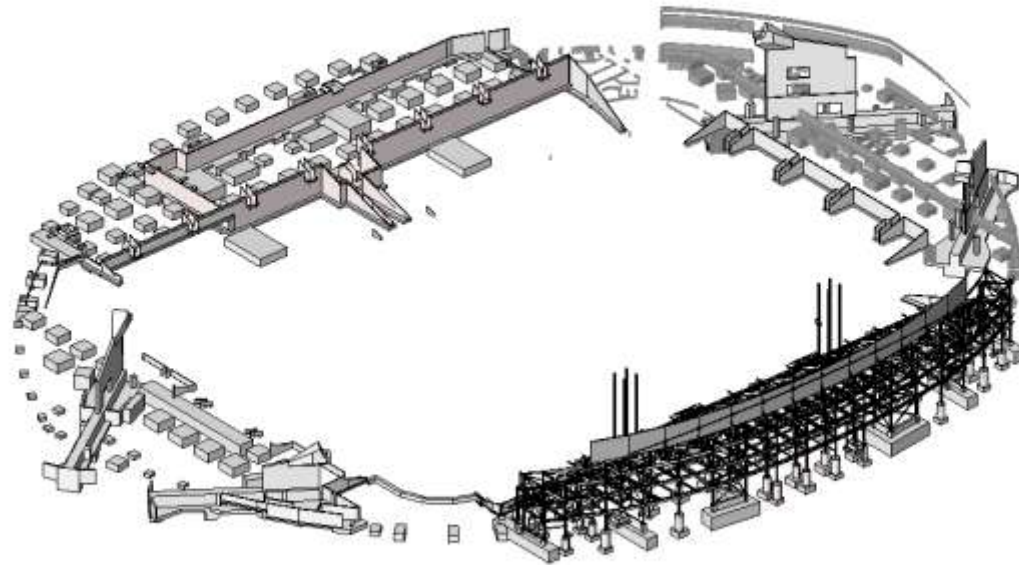
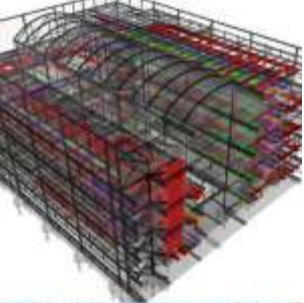
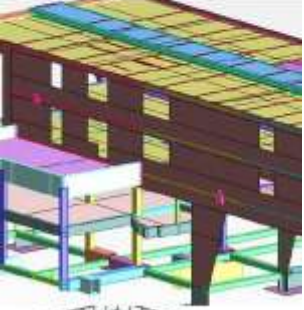
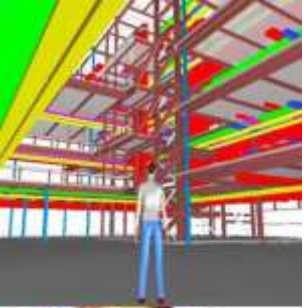
Design -Brighton and Hove FC – BIM overview - substructure



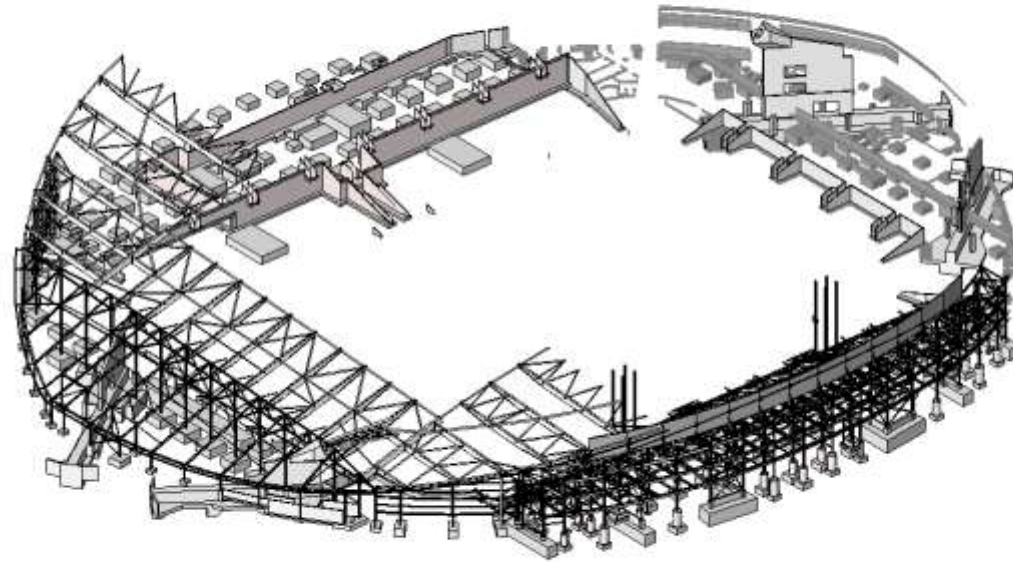
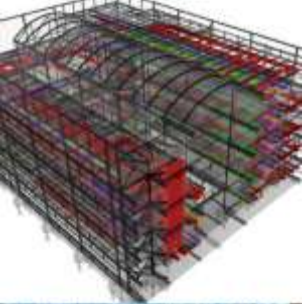
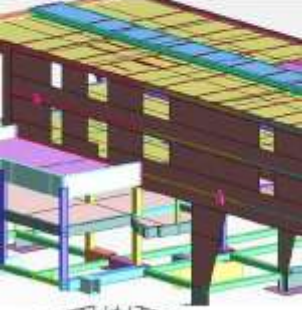
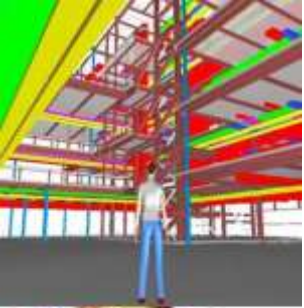
Design - Brighton and Hove FC – BIM overview - groundworks



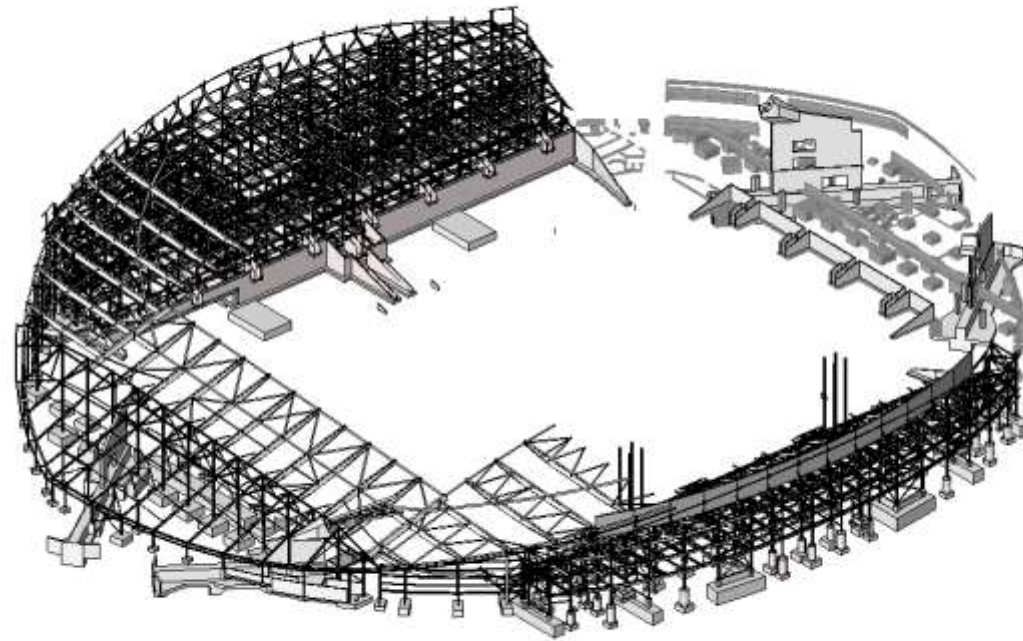
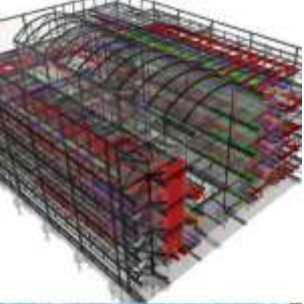
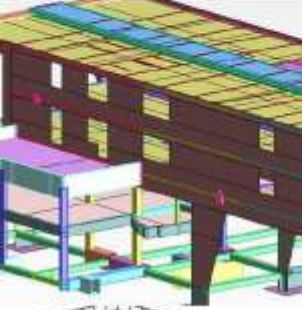
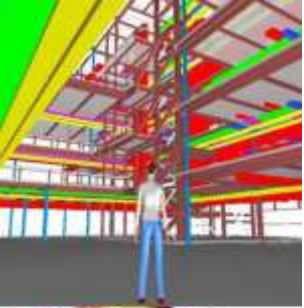
Design - Brighton and Hove FC – BIM overview - stands



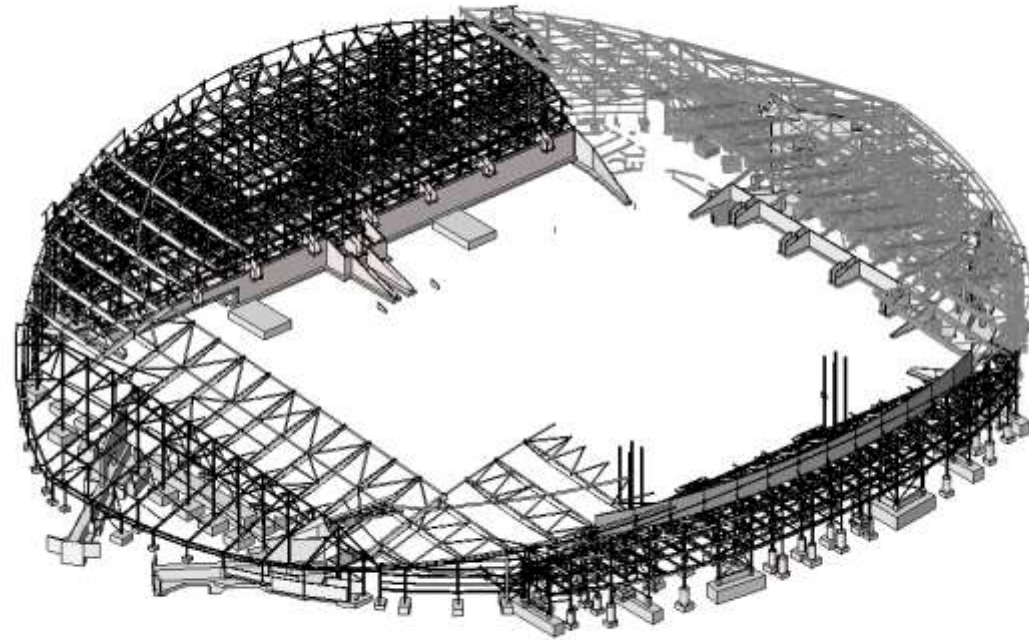
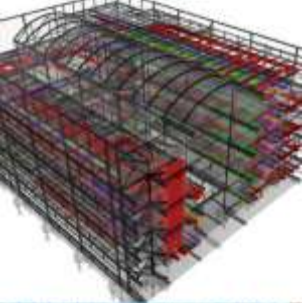
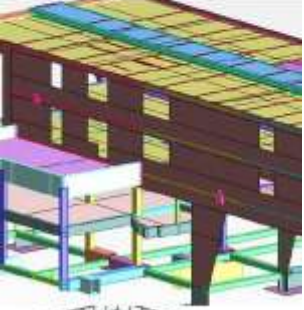
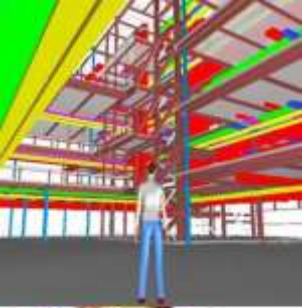
Design - Brighton and Hove FC – BIM overview



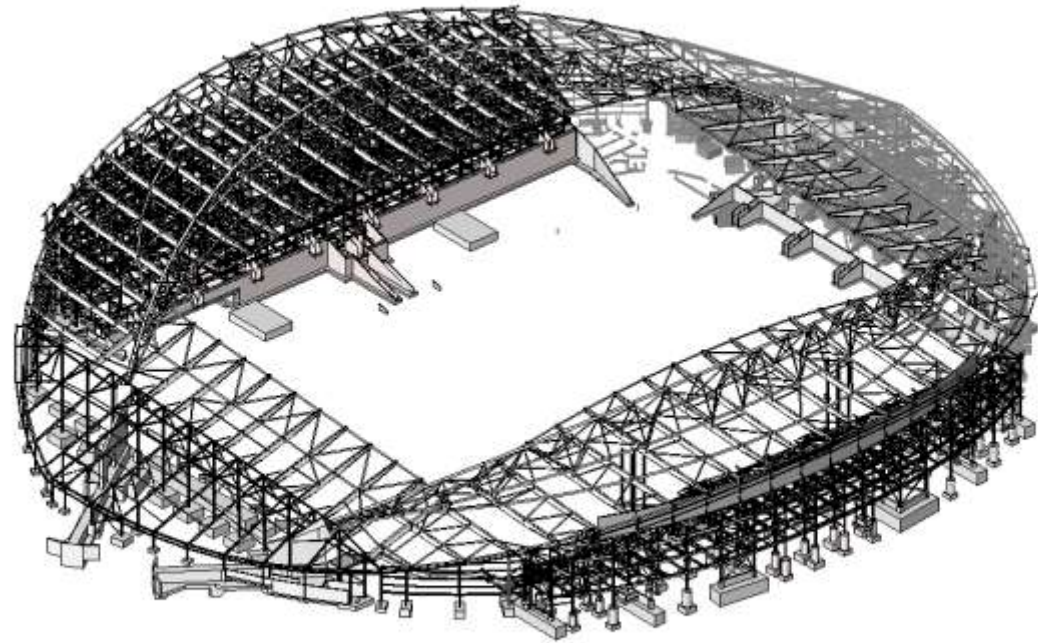
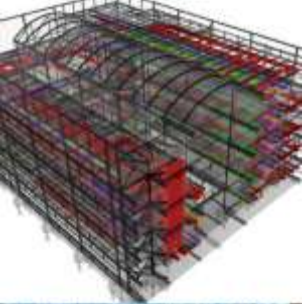
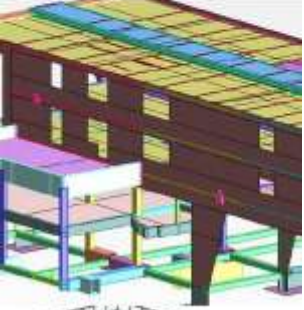
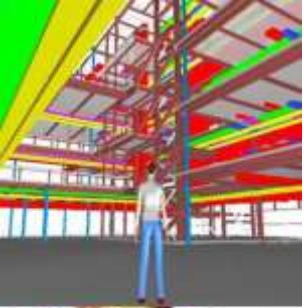
Design - Brighton and Hove FC – BIM overview



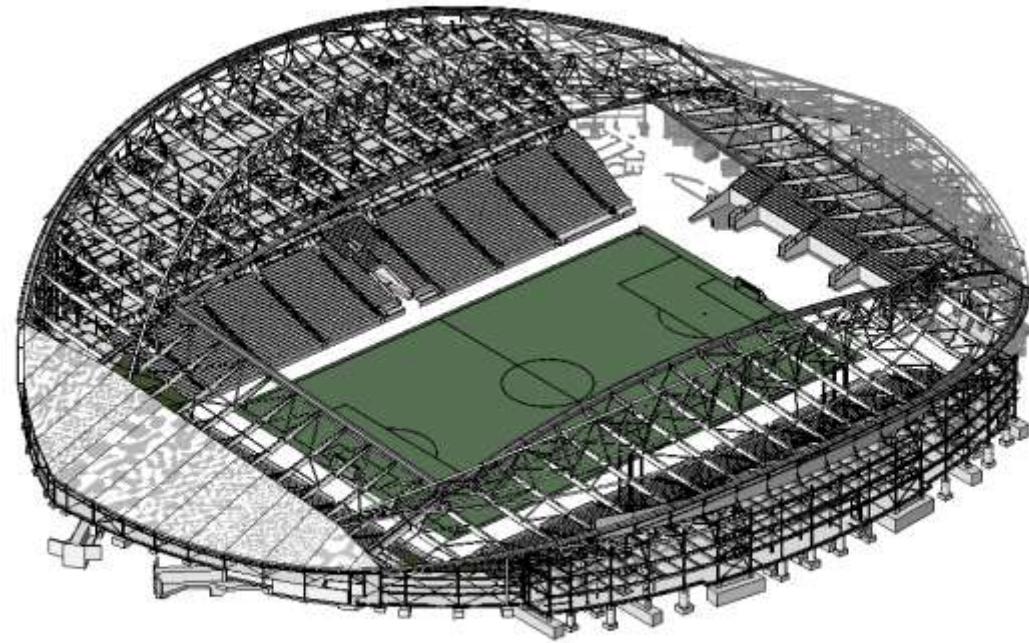
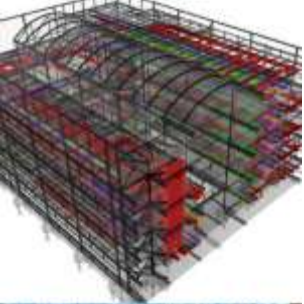
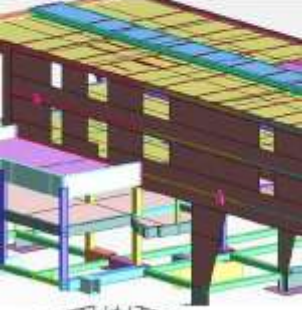
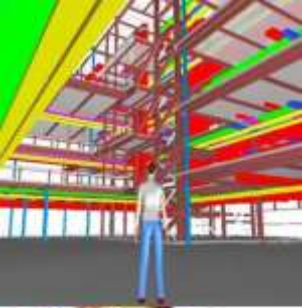
Design - Brighton and Hove FC – BIM overview



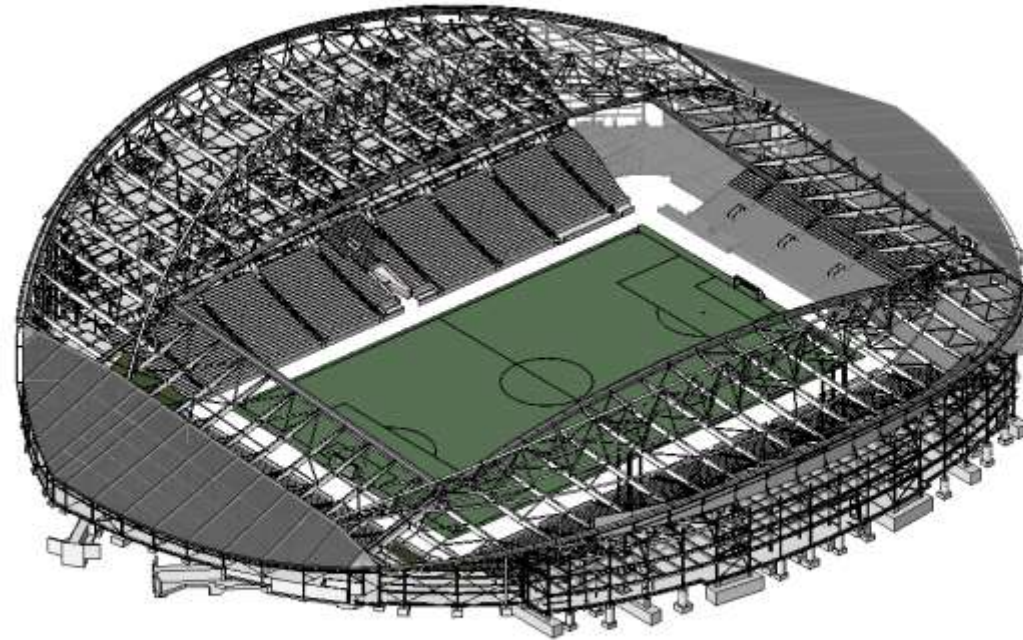
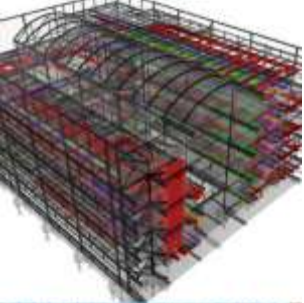
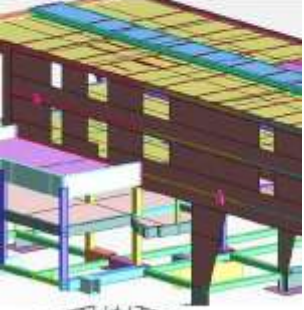
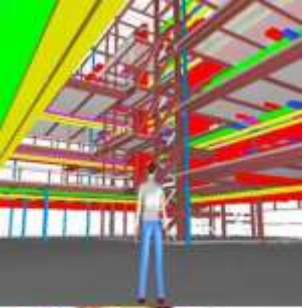
Design - Brighton and Hove FC – BIM overview roofs



Design - Brighton and Hove FC – BIM overview pitch and seating

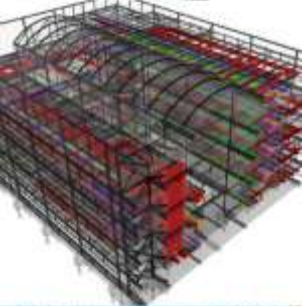
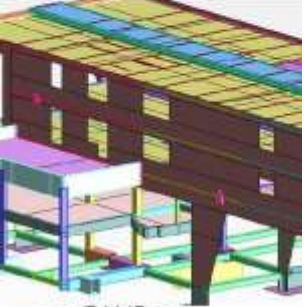
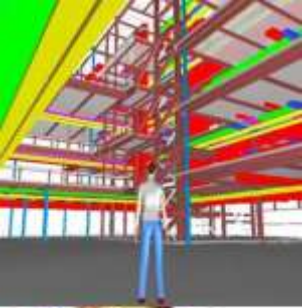


Design - Brighton and Hove FC – BIM overview – fit out



Summary

- Cost savings
- Programme improvements
- Green buildings



Questions

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