

Welcome to

CPD on Modern Methods  
of Construction (MMC)

Whitecode Consulting



**WHITECODE**  
CONSULTING

# Agenda

2

- ▶ MMC for Building Services – Off-site prefabrication
  - PUCs
  - Plant Rooms
  - Risers
  - Drainage
  - Bathroom Pods
- ▶ MMC for Building Services – On-site options

# Introduction to MMC in Building Services

- ▶ What are modern methods of construction in building services?
  - In a nutshell they are “**Intelligent Solutions for Off-site Manufacturing**”
- ▶ Why Off-site?
  - Improved programme – controlled/non-staggered works
  - Improved quality - factory environment
  - Skilled labour retention – location/consistency
  - Improved health and safety – reduced site hot works and working at height
  - Site waste reduction – specific lengths used in factory
- ▶ Generally considered for ‘high workload’ areas

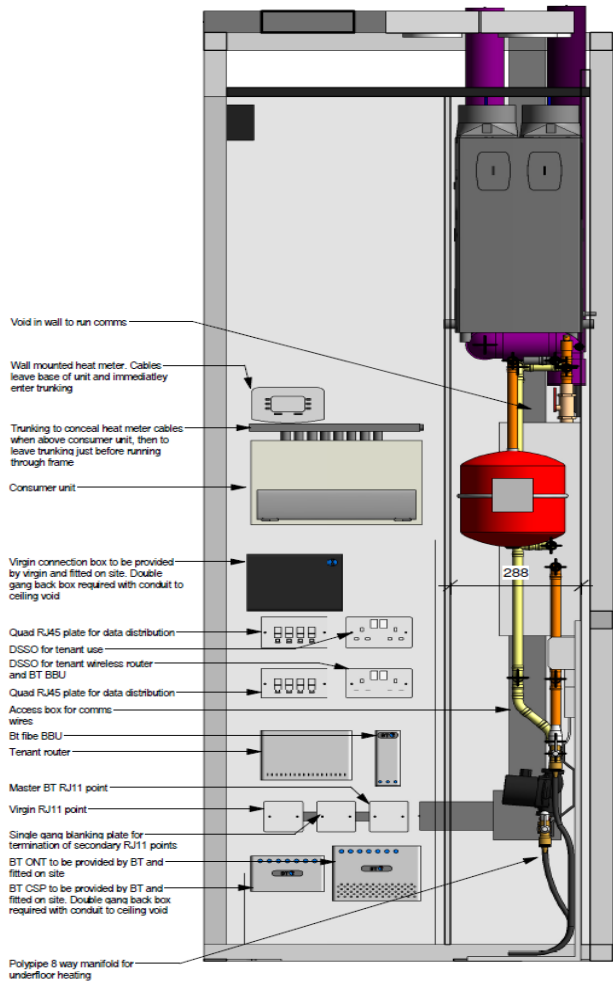


# Pre-fabricated Utility Cupboard (PUC)

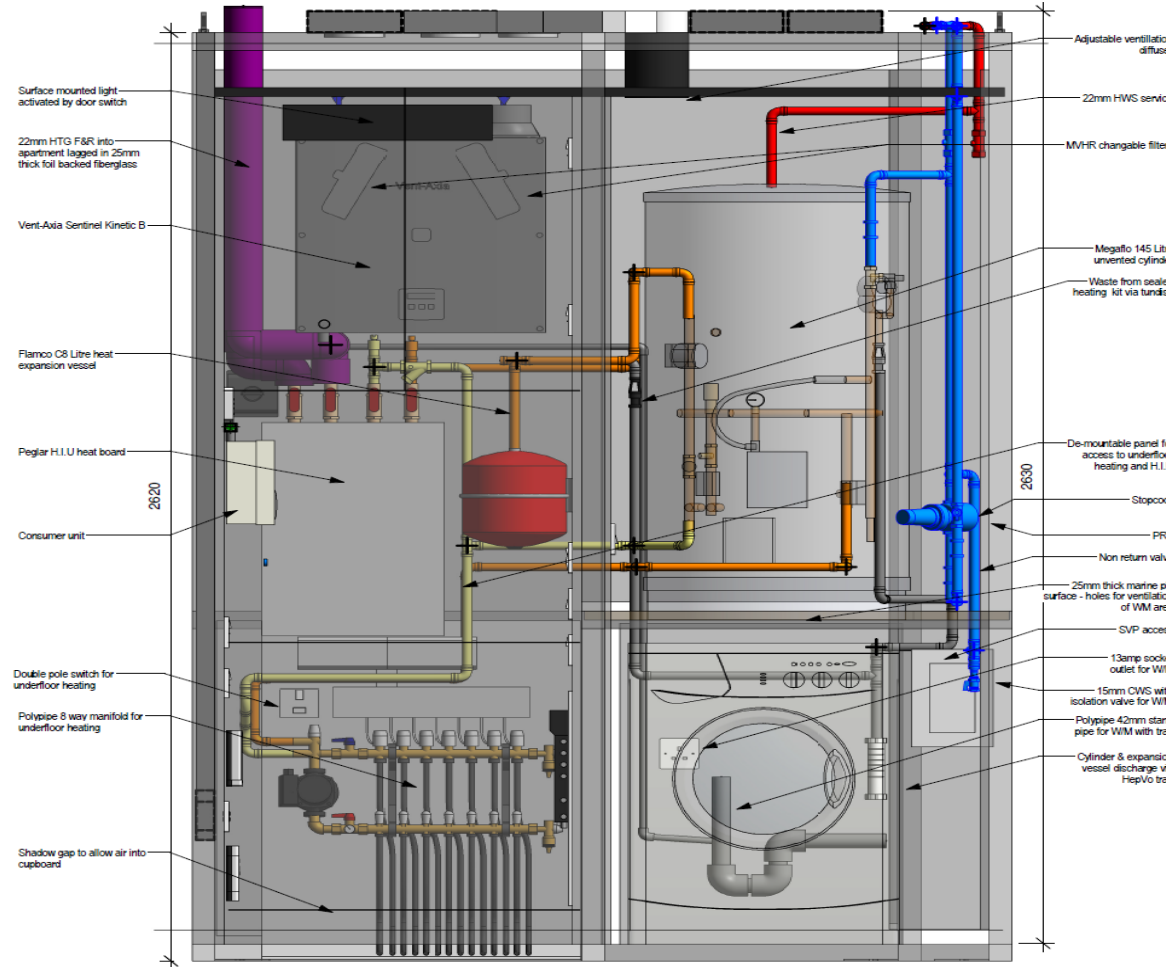
- ▶ Utility cupboards are often compact and complicated
- ▶ Uniform design removes on-site issues, then opening up feasibility for prefab:
  - ▶ Repetition of frame
  - ▶ Internal specification choice
  - ▶ Mirrored PUCs & internal products
- ▶ PUCs in manufacture while slabs still being cast, etc. - would be delivered prior to internal walls being built and screed being poured
- ▶ Delivery path on each level



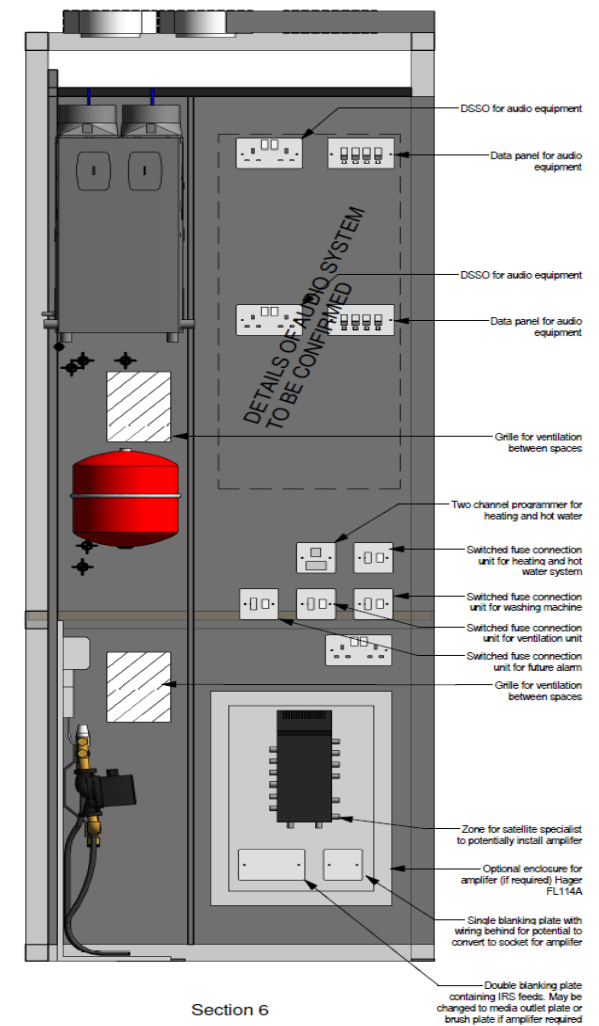
# Pre-fabricated Utility Cupboard (PUC)



Section 3



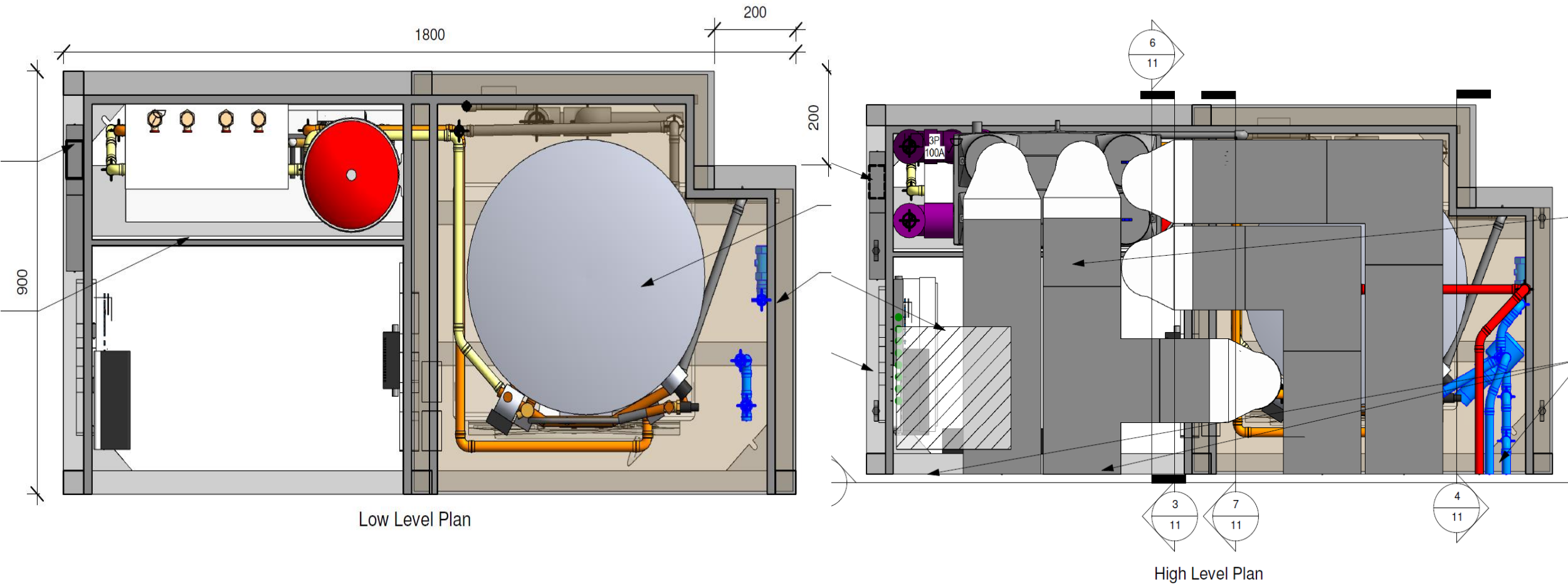
Section 1



Section 6

# Pre-fabricated Utility Cupboard (PUC)

6



# Pre-fabricated Plant Rooms

7

- ▶ Plant rooms often take long periods to fit out on site, plus testing
- ▶ Pre-fabrication of plant rooms mean the installation time is drastically reduced
- ▶ Bespoke/non-repetitive
- ▶ Initial test in the factory; final handover test once delivered to site
- ▶ Can be delivered in weather tight enclosures for external use or framed for location within a room on site
- ▶ Modular/sectional options available, although delivery path needs to be considered on a case-by-case basis



# Pre-fabricated Boiler Rooms

- ▶ Modular Construction in Skids



- ▶ Assembled off-site for testing before delivery





# Pre-fabricated Boiler Rooms

- ▶ Skids of varying shapes/sizes



- ▶ Flanged connections for ease on site



# Pre-fabricated Corridor Ceilings/Risers

10

- ▶ Ceiling voids in corridors/service risers are often very tight
- ▶ Trades may compete for space, based on who is first to install
- ▶ Pre-fabricated sections simply bolt together, to ensure a consistent install
- ▶ Time-saving not as drastic as utility cupboards or plant rooms



# Pre-fabricated Soil Stacks

- ▶ Soil stacks take time to install due to number of connections to be made
- ▶ Stacks can be made off site and slotted into place, reducing number of joints made on site



# Pre-fabricated Horizontal Drainage

- ▶ Horizontal drainage can involve a large number of connections with pipework at high level
- ▶ Pre-fabrication would reduce time spent at high level, although increase the size/weight of components
- ▶ Cast-in elements – single length sections can be formed off site and tested to ensure no leaks once a drainage run is cast-in



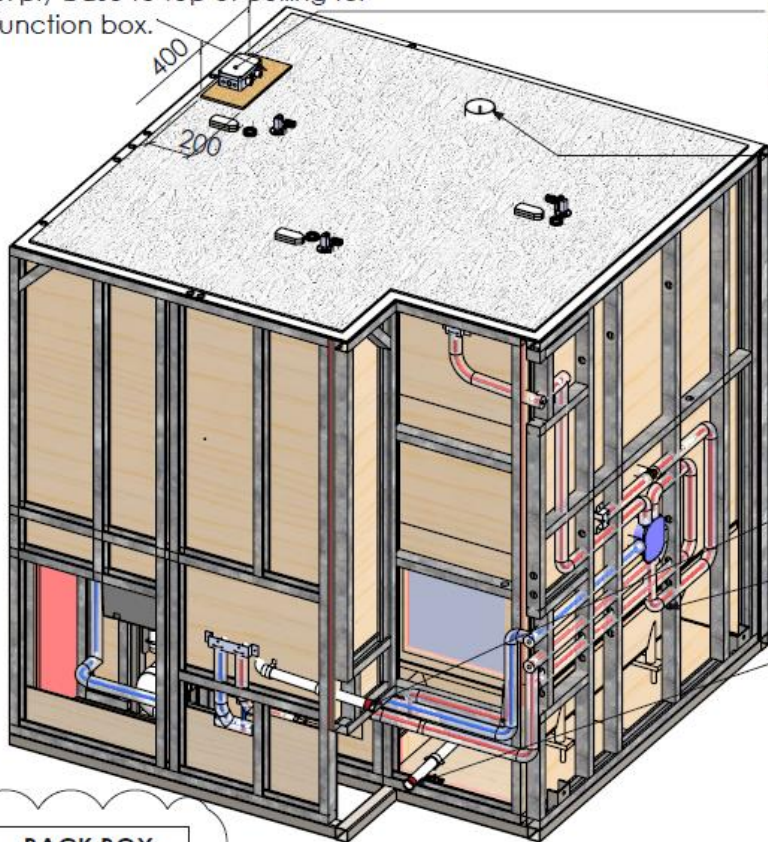
# Bathroom Pods

- ▶ Bathroom pods are not a new concept
- ▶ 'Pod Walls' are available that consist of only the 'complex' wall
- ▶ Repetition is not so difficult to achieve
- ▶ Consider:
  - Grout/tile issues – on site QC
  - Future access to SVP
  - Restriction on outside of pod wall
  - Point of service connection



# Bathroom Pods

fix ply base to top of ceiling for Junction box.



Electrics terminated here with Junction Box -Note Junction box to be temp fitted as per drawing 2077/2827/1 and fix on top of pod on site by others

Ventilation terminated here with Air extract valve  $\varnothing$  125mm

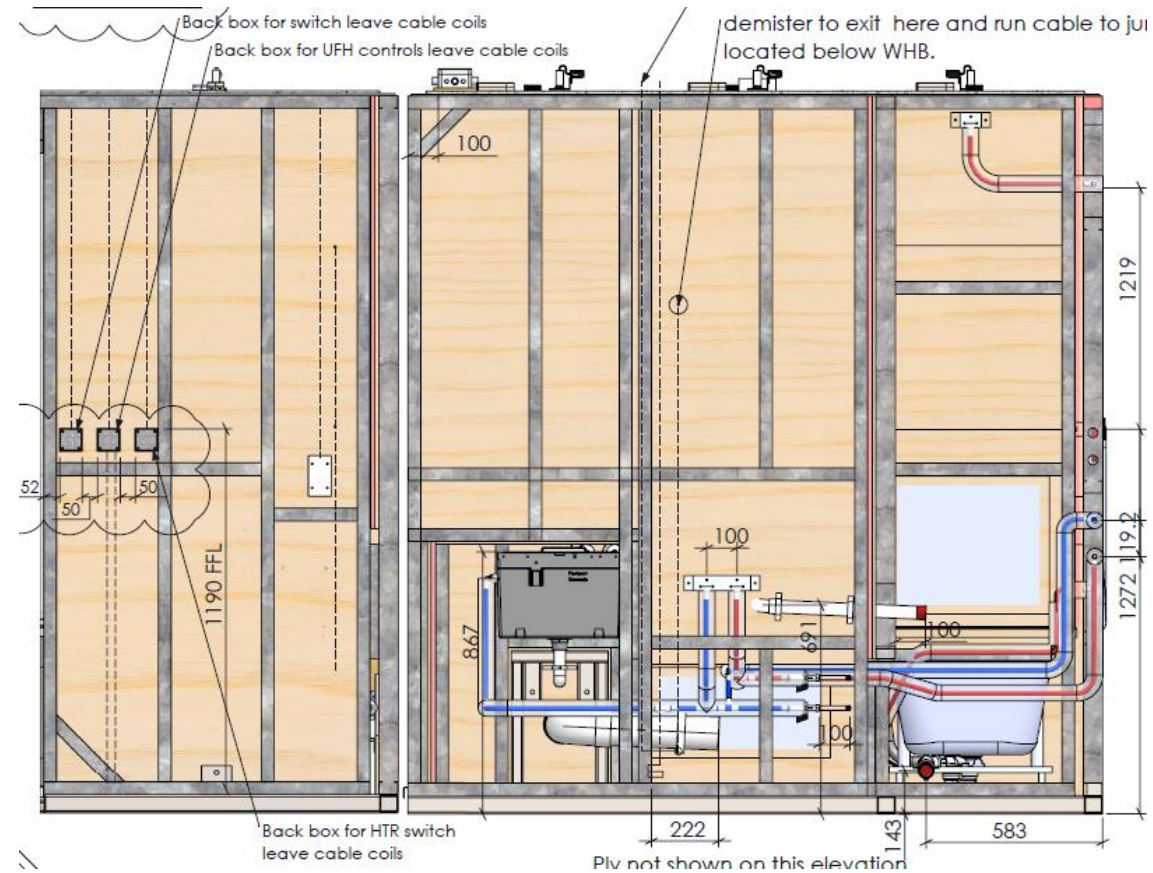
Access panel pod type A2-A

Basin waste terminated here with 40mm ABS pipe -

Uponor pipes to be insulated with 19mm Armaflex self-adhesive pipe insulation

Bath waste terminated here with bare end 40mm pipe.

BACK BOX



# 'Non' Pre-fabricated MMC

'Non' off-site pre-fabrication topics that could be considered 'modern':

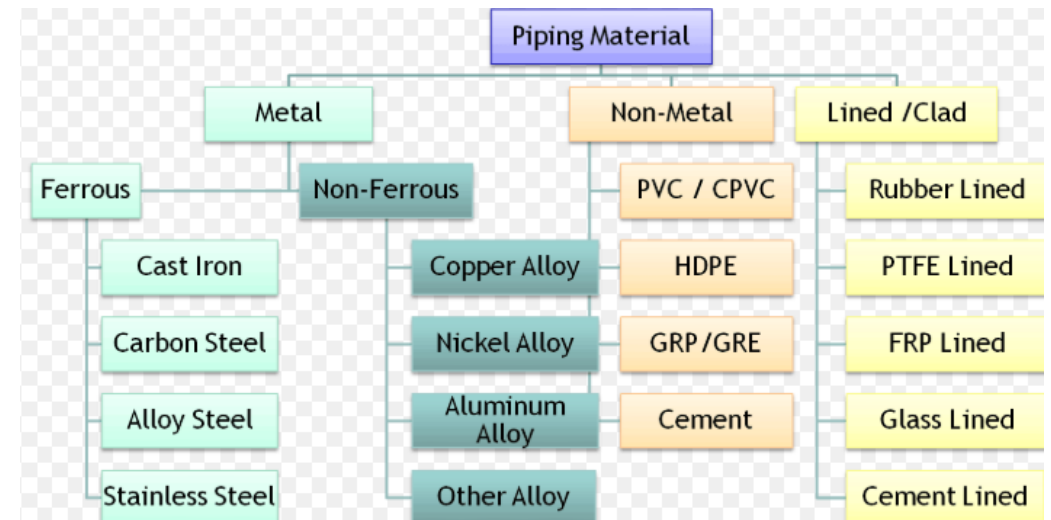
- ▶ Self-seal ventilation ductwork – reducing time per joint
- ▶ Pre-insulated ventilation ductwork – reducing time and materials on site



**No more taping or sealant with ducting**

# 'Non' Pre-fabricated MMC

- ▶ Choice of pipework material – reducing hot works on site:
  - 'Miners Rule' – temperature and pressure effect lifespan (check warranty)
  - Push-fit - catastrophic leaks
  - Thin wall - corrosion issues
- ▶ DPCVs/PICVs – simplify commissioning, reducing issues and time on site
- ▶ BIM/Revit:
  - Certainly beneficial in congested areas
  - Consider if it is beneficial in all areas of the site





Thank You for Listening

Any Questions?