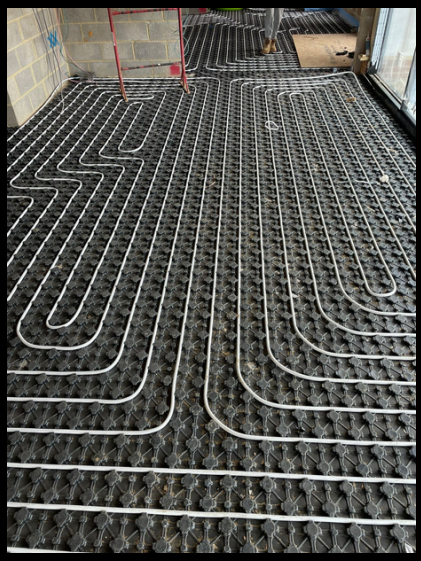
CASE STUDY

Installing domestic hot and cold services with UFH and ceiling cooling

Excelsior Heating Services

Project at a glance

- Executive home
- Ground and second floor
- Combined area 823sqm
- Domestic hot and cold services
- UFH heating system throughout
- Cooling system in ceilings
- Pumpstations



OBJECTIVE

Excelsior Heating Services was asked in 2020, to assist in the complete renovation and build of a new home. Because it is well insulated and has a lot of glass, one of the challenges was the heating in the building. The client's consultant wanted to use cooling via the heat pump system, and the original design for the cooling involved using ceiling panels and wall panels.

Already working with Multipipe for the underfloor heating system and domestic hot and cold services for the build, Excelsior asked if we could also help with the cooling system, as they had no previous experience in it. We suggested it would be better to install the system directly into the fabric of the building and plaster it in to give it a true thermal mass.

SOLUTION

- 5628m installed pipework
- Underfloor Heating:
  - 746m2
  - Solid screed & Fortis PRO
  - Manifolds: 7
  - System run temperature: 38°C
  - Pumpstations: 7
- Cooling:
  - 77m2 (ceiling)
  - Plastered ceiling cooling
  - Manifolds: 1
  - System run temperature: 15°C
  - Pumpstations: 1
- Plumbing:
  - 1100m pre-insulated pipework to reduce losses through the building
  - 1300m of uninsulated paperwork for plumbing services
- Controls:
  - 23 (smart thermostats) inc. 1 for the garage
  - 6 smart relays to control secondary pumps and other system devices
  - Zero system signal repeater thanks to Zigbee network
  - 1 integrated radiant heating and cooling system with an automatic switch

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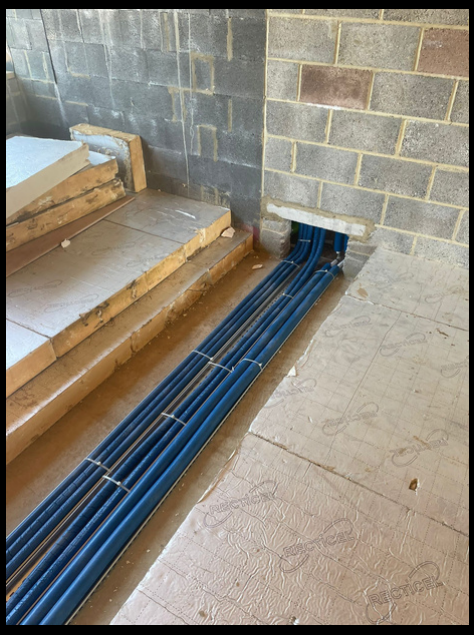
SOLUTION

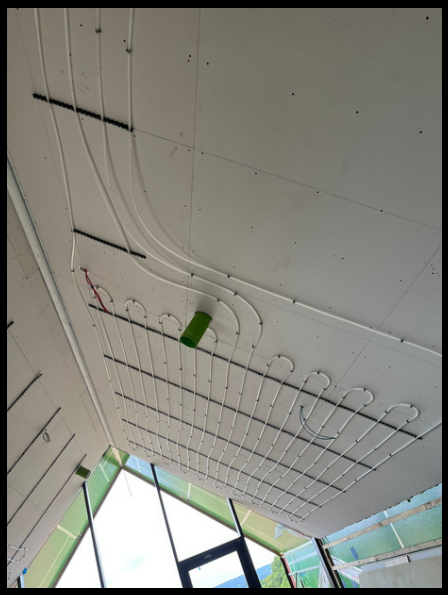
All domestic hot and cold services in this project were Multipipe pipework and fittings, as well as all the feeds to the underfloor cooling manifolds. Using a control system from Salus Controls, Multipipe helped set up and liaise with the client to show them personally how to use it efficiently through their app.

Multipipe Pumpstations were used to have a central pump in the plant room to eliminate any noise within the building. The pumpstations proved very helpful in setting and balancing the system and being able to understand flow and return temperatures, all whilst hidden away in the plant room.

Having this system now effectively gives the client a free cooling system. This is because it's run via the ground source heat pump and the brine collectors in the ground, so they can subtlety cool the building without the use of air conditioning and compressors. Therefore, it's just using a circulating pump and that's the only energy requirement to provide cooling.

This was a very large domestic project, using almost the entire range of Multipipe products. We worked closely with Excelsior Heating Services and the clients' architects to ensure that all the client's needs were met and completed to the timeline set out.





"After working with Multipipe for this project, it has made us far more confident to move forward on other projects, specifically with cooling. The support I've always had through ordering, design, and supply from Multipipe has been amazing."

Matthew Smyth
Excelsior Heating Services Ltd