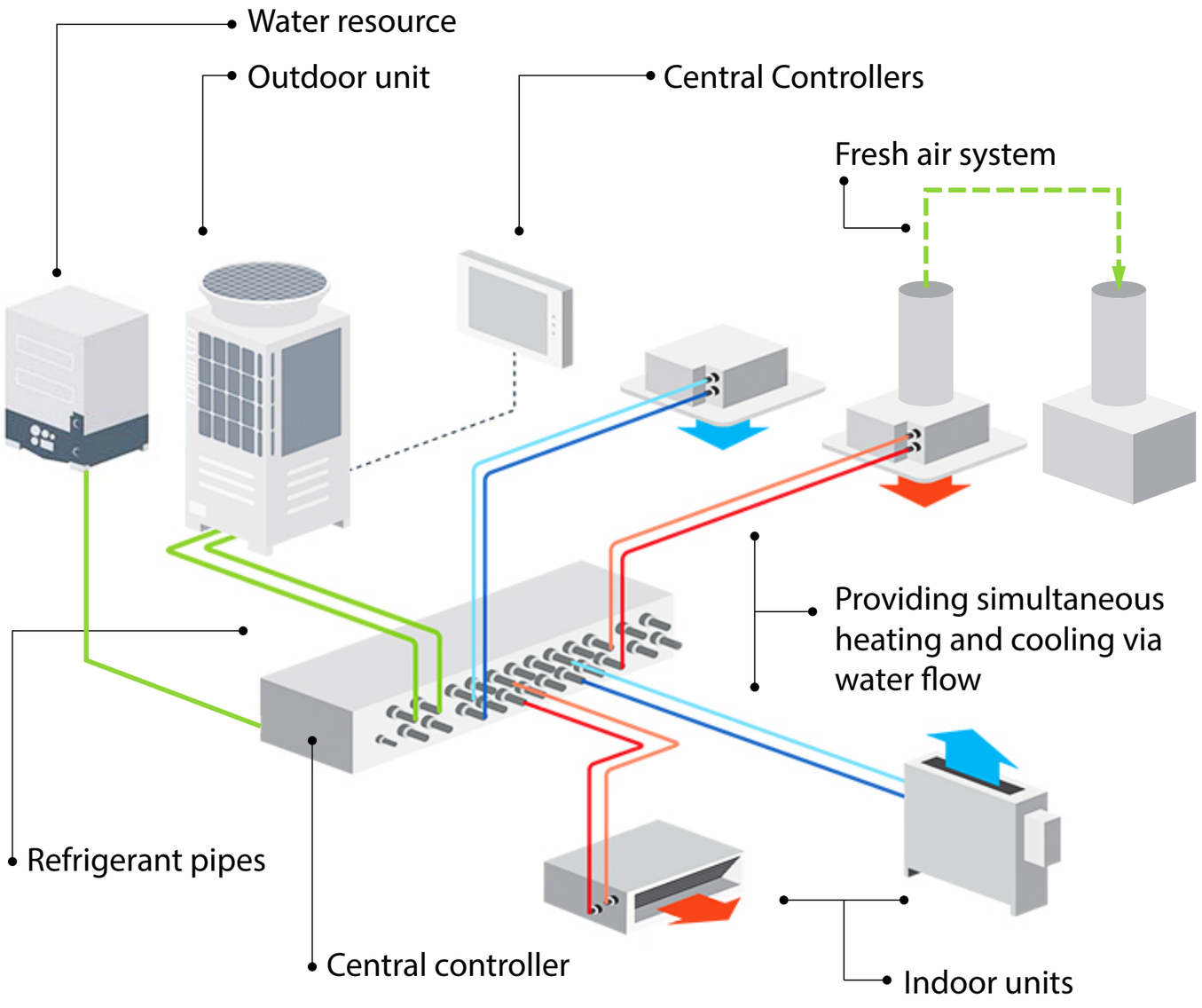
HVRF system



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Design Impact of Environmental Systems

Integrated Systems Design Summary

The residential building has the Hybrid Variable Refrigerant system, which is very similar to a VRF system where warm and cold refrigerant come from an outdoor unit to a central controller, and sent towards the units, however, in an HVRF system, water replaces the refrigerants at the central controller; therefore, temprerature is carried towards the units via water, this will reduce cost, and elongate maintainance periods.

This system includes the following
- Main outdoor unit
- Water source
- Central controller
- Fresh air unit
- Indoor unit controller

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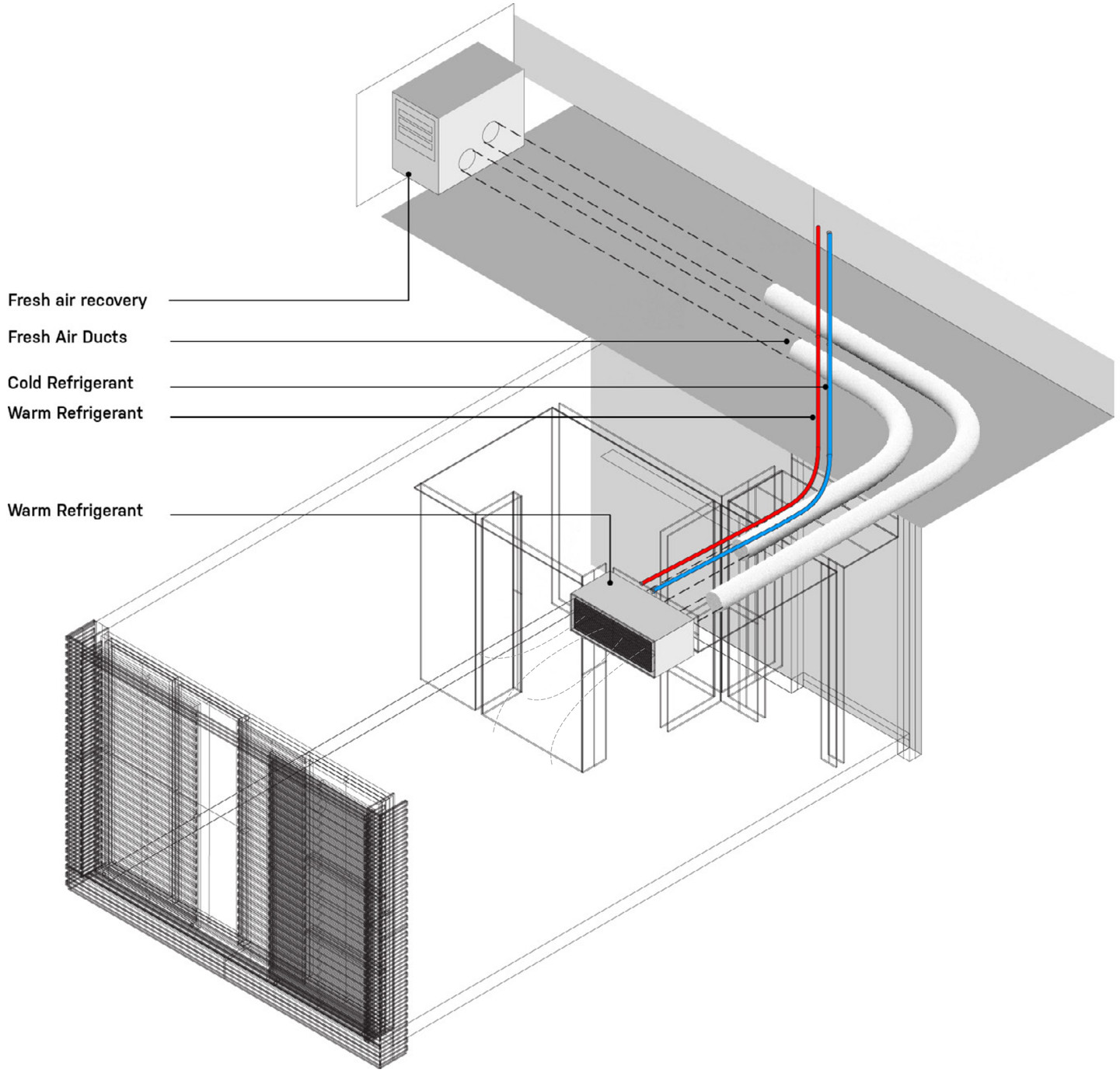
Design Impact of Environmental Systems

Energy Conversion

Heating and Cooling system:

The heating and cooling pipes come from the roof towards each unit, and through a drop ceiling in the corridor and the unit, they get connected to the indoor unit controller



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Design Impact of Environmental Systems

Mechanical Ventilation Design Summary

The fresh air ducts connecting to a central fresh air unit in each floor allows for returning indoor air to outside and exchanging it with fresh air, which is the most cost effective system compatible with the HVRF system