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LIFTING STATIONS: ENABLING DESIGN FLEXIBILITY WITH EFFICIENT AND RELIABLE WASTEWATER MANAGEMENT

1. Define what a lift station is.

A lift station is a system that pumps wastewater from a lower elevation to a higher elevation.

2. Name at least two scenarios where conventional gravity wastewater systems will not work and an alternative plumbing solution is required.

- Large catchments, steep or relatively flat terrain and other variations in the local landscape may preclude or limit the viability of a gravity system.
- Wastewater will not naturally flow due to gravity if your sink, laundry room, or bathroom is located below the main sewer line.
- In areas with high water tables, the main sewer line might be submerged.

3. What are the architectural design limitations associated with conventional gravity systems?

Gravitational plumbing cannot be easily relocated, limiting design flexibility. There may be constraints due to physical barriers such as core drilling post-tensioned slabs or inaccessibility to pipework hidden behind walls, under floor boards or tiles.

4. What is the difference between a Grey Water Lifting Station and a Combination Lifting Station?

Grey Water Lifting Stations can accept wastewater from sinks, basins, showers, urinals, laundries and kitchens. Combination units can accept both black wastewater from toilets together with grey wastewater from sinks, basins, showers, urinals, laundries and kitchens.

5. What is the key benefit of using a lifting station in a heritage or adaptive reuse scenario?

In renovation projects, especially in older buildings, lifting stations allow for the addition of new plumbing systems without the need to overhaul existing infrastructure. This is particularly useful in heritage buildings where structural changes need to be minimised.

6. Explain how lifting stations can help reduce construction costs.

By reducing the need for extensive excavation to achieve the necessary slope for traditional gravity systems or other structural changes, lifting stations can lower construction costs and minimise disruption during the building process.