



Urban Cooling

How We Carry Out Our Installations Guide

How We Carry Out Our Installation

Post-2000 New-Build Flats

This guide is designed to answer any questions you may have about how we install our air conditioning systems within your property. If you decide to go ahead with your quotation, our surveyors will walk you through all of this information during the pre-installation survey.

Throughout this guide, many sections include Additional Checks and Advisory Notes specifically relevant to older properties, conversions, and pre-2000 flats or houses. These types of buildings often lack modern construction features such as false ceilings or stud walls. As a result, our installation approach may differ from the methods used in newer post 2000 flats.

To ensure clarity, we have included these advisory points and additional checks to help highlight considerations that may apply to older buildings or converted properties.

Please note that this is a general guidance document divided into several sections, and some parts may not be applicable to your specific type of installation.

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1. Explanation of Air Conditioning

Air conditioning works using the vapour compression cycle. A refrigerant is circulated through a closed circuit, absorbing heat from the room to provide cooling. The heat is then released into either air (in conventional systems) or water (in our water-cooled systems), before the refrigerant repeats the cycle.

When heating is required, the process simply reverses — transferring heat back into the room instead.

Indoor units are used in the room to distribute cooling or heating. Our systems offer a choice of wall-mounted units or ducted units. Wall-mounted units are installed directly in the room that needs conditioning, while ducted units are typically hidden within a bulkhead or above a false ceiling. Please note that ducted units require a ceiling void of at least 280mm if installed within a false ceiling.

The components of the system are connected via refrigerant pipework, usually hidden above false ceilings or within stud walls. Alongside this, communication cables and condensate drains are installed with the pipework.

2. Refrigerant Pipework

Refrigerant pipework is usually run above the false ceiling. To allow this, we cut small access holes of around 300–400mm² at key points so the pipework can be pulled through. All refrigerant pipework is insulated to maintain efficiency and improve the overall energy performance of the system.

We always aim to run the pipework in straight lines as neatly as possible. When connecting to wall-mounted units, the pipework can often be taken down inside the partition wall. This means only the wall-mounted unit is visible, with no exposed pipework.

Additional checks for older/conversion properties:

Our surveyors will need to confirm whether walls and voids are suitable for concealed pipe runs. Many conversions may lack stud walls or false ceilings, so trunking or surface runs may be required.

Advisory notes:

Joists – In older properties, ceiling or floor joists often obstruct pipework routes. Notches may need to be cut so pipework can sit flush and plasterboard can pass over. By regulation, only up to 35mm may be removed from a joist to maintain structural integrity.

Due to joists we will need to cut out long thin sections of plaster board to allow for the pipework route, this is because there is no void space to run the pipework.

3. Wall-Mounted Indoor Units

Wall-mounted units are installed directly in the room that requires cooling or heating. They must be positioned where there is enough clearance — at least 340mm above doors or cupboards — and where airflow can circulate effectively through the room.

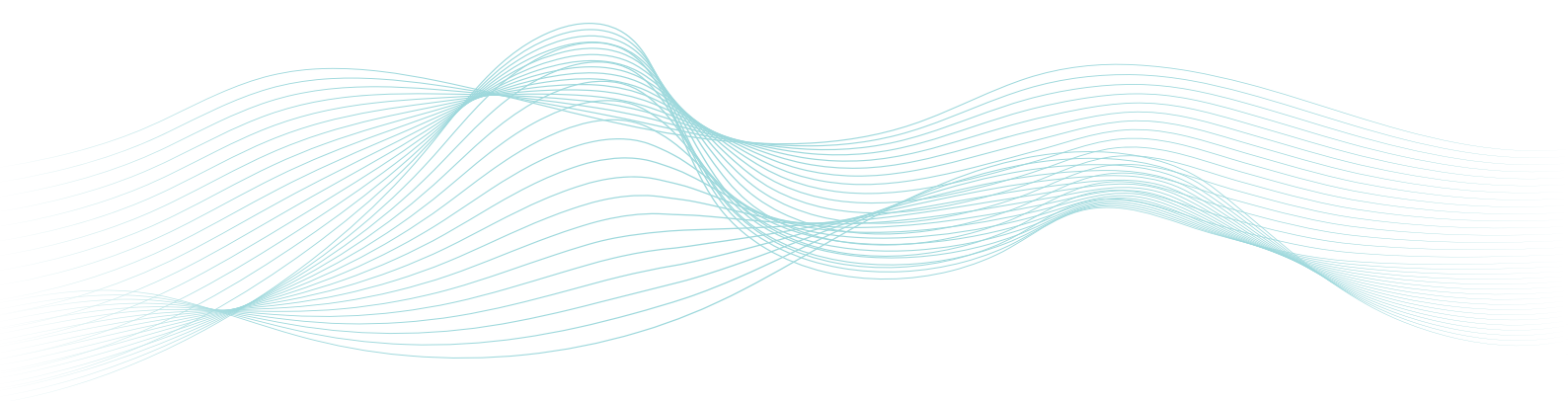
When mounted on stud walls, a small hole is cut behind the unit so the pipework can pass up into the ceiling without leaving surface damage. The wall space must also allow for the chosen unit plus a 40mm margin on each side for maintenance access.

Wall-mounted units are designed to condition only the room in which they are fitted. If two rooms share one unit, performance cannot be guaranteed in the second space, as the system will regulate itself based on the conditions of the main room.

Additional check for older/conversion properties:

Solid masonry or lathe-and-plaster walls may limit the ease of concealing pipework. Our surveyors must assess whether surface trunking will be required if chasing is not possible.

Avoid installing wall-mounted units on wallpapered surfaces unless this is your preferred location. Please note that wallpaper cannot be restored to its original condition if damaged during works.



4. Ducted Indoor Units

Ducted units are typically hidden within a bulkhead or false ceiling, providing a discreet solution. To install these, a minimum ceiling void of 280mm is required for the fan coil, and duct runs should ideally be 2 metres or less.

Ductwork is usually 150mm in diameter, but with insulation the diameter increases to 200mm. The ceiling void must therefore be at least 200mm to avoid damage to the ducts or framework.

Each installation also requires a method for supply and return air, as well as suitable grilles. These must allow for future maintenance access to filters and controls.

Ducted units are designed to serve only the room in which they are installed. If air is shared between rooms, the performance will be determined by the conditions in the main room with the controller and fan coil.

Ducted units should be positioned so that they provide suitable airflow throughout the room.

Additional check for older/conversion properties:

Our surveyor will confirm if the property has sufficient ceiling voids. In many pre-2000 flats and conversions, ceiling voids may not exist, so ducted solutions may be restricted or require bespoke bulkheads.

Advisory notes:

Steels within ceilings – Renovation or extension works often introduce steel beams that obstruct service runs. Options include diverting pipework below the ceiling to pass around the beam, utilising any gaps above, or boxing in pipework if no alternative is possible. It is not always possible to see internal steels, if you have any prior knowledge of any steelwork above the ceiling, please advise our surveyor during the pre-installation survey.

5. Internal Condenser Units

Internal condensers are most commonly installed in utility cupboards, which provide a practical and discreet location. Although designed with noise-reducing materials, they are best avoided in bedrooms where possible.

If a bathroom or shower room is considered, the area must be 100% water- and steam-proof, and the design must meet building regulations. In such cases, specialist enclosures and approvals are required before installation.

Condensers can be mounted on the wall, depending on structural integrity, or placed on the floor with anti-vibration matting. Clearances must follow our guidelines, with at least 100mm space around all sides for access and maintenance.

Additional check for older/conversion properties:

Utility cupboards may not be present in older flats. If you do not have a utility cupboard check for alternative service areas or whether cupboards have been created during refurbishments.

6. External Condenser Units / Incognito

In some cases, external condensers are permitted. It is the customer's responsibility to confirm approval with the building management or relevant authority before installation.

Urban Cooling offers both conventional outdoor units and the Incognito system. Condensers can be mounted on a wall (high or low level), on the floor, or on a flat roof using anti-vibration matting. Incognito coils are vertical wall-mounted only.

Wherever possible, the chosen location should allow safe access for installation and future maintenance.

Pipework penetration from inside to outside is professionally sealed with fire collars or sleeves and finished with intumescent sealant.

7. Water Pressure and Pipework – Water Cooled Condensers

A minimum water pressure of 1.5 bar is required for the system to operate efficiently. Most new-build apartments already exceed this, but we always fit a pressure reducing valve (PRV) to protect against excessive pressure and water waste.

Our water-cooled units are also fitted with internal valves that restrict the flow of water, ensuring the system only uses the minimum amount required.

Water pressure can vary between properties. A simple check is to run the water at the same level, or as close as possible, to the proposed condenser location. If the flow appears weak or restricted, you should arrange for a plumber to test the pressure.

However, our surveyor will perform some basic tests on the water supply during the pre-installation survey to determine water pressure.

Our surveyor will also check if the property's plumbing is run in standard copper pipework. In some cases, special PEX plastic pipe is used, which requires a plumber with specialist tools.

Installations of our water cooled condenser are carried out using copper plumbing pipe, on some occasions plastic pipe is run in voids, but this is always converted back to copper when exiting the void.

Is there any painted pipework? If so, the surface must be cleaned back with wire wool to ensure a clean joint can be made. Our survey will inspect for painted pipework.

All pipework uses soldered or press-fit copper fittings to ensure long-term reliability.

Additional check for older/conversion properties:

The surveyor to establish whether pipework is original or upgraded. Many older conversions may still use galvanised steel, lead, or mixed materials instead of copper.

Painted or corroded pipework should be noted, as it may need replacement before installation.

8. Water Softener

Our water-cooled condensers are designed to run on normal mains water that ranges from soft to hard water.

Has your property got a water softener? If you have a water softener installed at your property, please let our surveyor know. We will need to connect the water supply to our water cooled condensers before the softener. This avoids straining the water softener and using excessive salt.

9. Waste Connection

Our water-cooled condensers are designed to connect onto a 32mm (1¼") waste pipe or larger, ideally positioned as close to the soil and vent pipe as possible.

Boiler or hot water cylinder overflows, as well as condensate drains, must not be used as a waste connection. These services are not always connected to a main drain and can cause water damage if unknowingly connected.

Waste drains are run in copper pipe and then converted back to plastic via a fitting onto the drain.

A suitable drain connection will be located during the pre-installation survey.

Additional check for older/conversion properties:

Older flats and houses may have non-standard or imperial waste systems installed. Confirm waste pipes are suitable and sized correctly (32mm minimum).

10. Stopcock

The property's stopcock must be identified during the survey so that it is clear where the water supply can be isolated when required. The surveyor will be asking the stop cock location, so if you are aware of the location it would be very useful.

Additional check for older/conversion properties:

Stopcocks in older flats are sometimes hidden, seized, or located externally. Confirm location and condition during the survey.

11. Power Supplies

Air conditioning systems require a dedicated power supply, either via a switched spur or direct to a fuse board.

Typically our, 1- and 2-port water-cooled condensers can be connected to the mains using a switched spur, which may be taken from a nearby plug socket. However, our 3-port condensers and larger require a direct power supply from the fuse board, and a spare way within the fuse board must be available.

Have you got spare capacity at the fuseboard? This will be checked during the pre-installation survey. If there is not spare capacity and electrician is always able to add a small sub-board at additional cost.

Additional check for older/conversion properties:

Fuse boards in pre-2000 flats may lack RCD protection or spare capacity. Surveyors should highlight where upgrades may be required.

12. Fire Suppression

Our Surveyors will always check for fire sprinklers, alarms, or suppression systems. If you are aware of any systems within your property it is very helpful if you could advise them accordingly.

13. Condensate Pumps

In cooling mode, the coils within the indoor units produce condensation as warm air passes over the cold surface. This condensate collects in a drip tray inside the unit and must be removed.

Where possible, a gravity drain is used to carry the condensate water away. However, in many locations this is not practical, so condensate pumps are installed instead. We use the quietest pumps available and insulate them behind the indoor units to minimise vibration and noise.

These pumps are third-party products and come with a 12-month warranty. To ensure reliability and longevity, we recommend they are maintained as part of the system's regular servicing.

14. Ceilings

Our systems generally require a false ceiling to run refrigerant pipework, communication cables, and condensate drains. If this is not possible, alternatives such as trunking, boxing in, or chasing walls may be considered. During the pre-installation survey our surveyors will check for void space in the ceilings.

Spotlights, fire suppression caps, or ventilation outlet grilles. Are all signs of voids above a plasterboard ceiling ,Where possible, we will use an inspection camera to look above the ceiling — this can usually be achieved by removing a spotlight.

Additional check for older/conversion properties:

Many conversions lack suspended ceilings. If no void is available, services may need to be surface mounted or boxed in.

Where refurbishments have added ceilings, confirm depth and whether any steelwork from extensions restricts service runs.

Advisory notes:

Joists – Surveyors should expect obstructions from original joists. Where notching is required, building regs allows up to 35mm may be removed . Anything beyond this would compromise the structure and must be avoided.

Steels – Where steel beams are present, consider routing around or beneath, using void gaps above, or boxing in as necessary. Our surveyor will make you aware of any impact this may have on finishes.

15. Walls

Modern apartments usually use aluminium tracking in stud walls, which allows pipework to pass vertically without chasing. A horizontal track may exist at ceiling level, but this can be accessed without issue.

External walls may differ and need to be checked. Our surveyors can do this by removing an electrical socket or switch to see the wall behind it.

Additional check for older/conversion properties:

Pre-2000 flats may use solid masonry, lathe-and-plaster, or mixed structures. Confirm wall type to determine feasibility of chasing or concealed runs.

Extensions or refurbishments may include steel frameworks; confirm if this will restrict drilling or service routes.

House conversions should always be approached with caution, as solid brick/block walls are sometimes finished with dot-and-dab plasterboard or lightweight timber framing. The true wall type must be identified wherever possible. Removing an electrical socket faceplate can often provide a reliable indication of the wall construction.

Advisory notes:

Solid Walls – If the surveyor identifies solid walls, they will either need to be chased out or pipework boxed in. Although dust extraction equipment and protective sheeting are used, surveyors will make you aware that airborne dust will continue to settle for several days after works.

Dot-and-Dab Walls – These can sound hollow and appear to be stud walls, but the void is too shallow for pipework. They must be chased out to accommodate services. Our surveyor will identify during the pre-installation survey.

Timber Frame Walls – These often contain rigid PIR insulation and strengthening cross members. Slots may need to be cut into the timber framework to allow pipework to run, with some insulation removed as necessary. You should be advised that this is more invasive than standard installations.

16. Repair & Decorating

Some making-good will be required after intrusive works. Urban Cooling can recommend trusted decorators:

£300 for up to 5 holes.

£350 for 6–10 holes.

This service is paid directly to the decorator and is separate from the main installation contract. You may also choose to use their own trades if preferred.

Advisory notes:

Older properties will sometimes mean that there is more decorating work to be carried out. The prices above are indicative and only allow for patching holes back up. If there is more involved decorating works additional costs would be incurred.

If you have any other questions regarding how we install our system then please call us on **020 9708 9708** or send us an email **info@urbancooling**.