FACTSHEET

Upstands/Boxing below new windows where the windowsill is lowered

This fact sheet explains the construction of the new window upstands.

Appearance of new upstand and sill

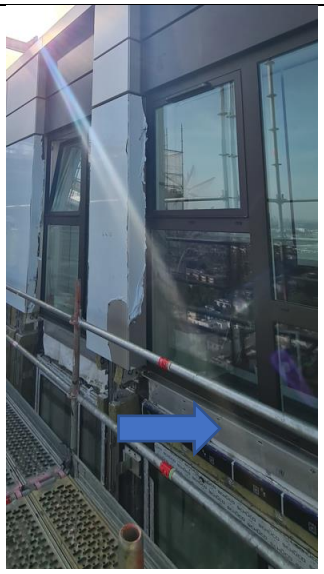
Where the window sill is lowered, the new upstand is about 22cm high from the floor compared to the previous window sill, which was about 80cm from the floor. Please note that the measurements will vary from flat to flat and from window to window.

	Lounge	Bedroom
New upstand and sill below the new window		
Previous upstand and sill below the previous windows		

23 Nov 2023

Base for the new upstand/boxes and sill

The new upstand/boxing is secured to the concrete floor of each flat. For the individual window replacement, the new windows are secured within each concrete opening with heavy duty metal brackets, including a long galvanised metal cassette/frame at the bottom, two full length metal brackets to each side, and two large metal brackets to the top and bottom of the new window.

Base of new window (Internal view) • Concrete slab • Metal cassette/frame	
Base of new window (External view) (Please note the protective film near the scaffolding is still attached to the panels to prevent scratches as work takes place in the area.)	
Full window surround with brackets, fire stopping and metallic vapour control layer	

Each window sits within the concrete walls, floor, and ceiling of its opening, sealing it completely with the building. This, in addition to the full firestopping around each window, makes them secure and fire safe.

This setup prevents any access from the outside or neighbouring flats. The new upstand/boxing and sill are similar to a kitchen cabinet with worktop in terms of intent and safety.

Please note *that the previous upstand was built with bricks or breeze blocks on the concrete floor to cover from the inside the external spandrel panel below the window as there was a gap between the concrete slab and the spandrel panel. The previous upvc window sill was fitted to the top of the upstand and the window frame. The internal part was plastered and fitted with a radiator. This upstand had no structural purpose.*

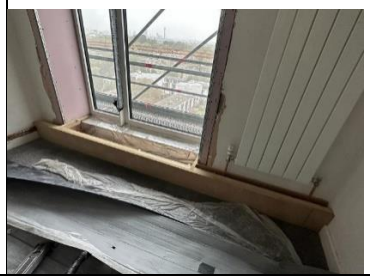
The build up of the upstand/boxing and window sill

The purpose of the upstand/boxing is to:

- Create the base for the new lowered window sill
- House the trench heater if this is the radiator option chosen for the room
- Help hide pipework and cables to enhance the overall appearance and provide flexibility to position new radiators either side of the new window

The step-by-step construction of the new upstand/boxing when the floor is carpeted is as follows:

Step 1	The carpet does not exceed into the recess and remains about 2cm away from the corners of the reveals. The ground batten of the boxing is screwed through the carpet into the concrete floor structure. If the carpet was cut shorter than the batten, carpet grip would need to be installed, which may cause damage or tear the carpet further, particularly if the carpet is older. The carpet remains protected throughout the installation. The carpet can be removed/replaced any time by cutting it along the upstand.	
Step 2	The boxing ground batten and carpet are sealed with fireproof mastic. The metallic vapour control layer can be seen within the space, covering the metal cassette/frame and bracket, as well as the concrete slab/floor between the reveals.	
Step 3	The studwork frame is completed.	

Step 4	The boxing is braced back to the metal cassette/frame, concrete base and reveals.	
Step 5	MDF is attached to the front of the studwork. The wall around pipework leading to the next room is sealed. The new window sill is placed on top of the boxing. All edges along the window box and sill are then sealed with mastic. For access, the sill on top can be removed.	

The materials used for the upstand/boxing and sill

All materials used to build the upstands are suitable for their intended purpose.

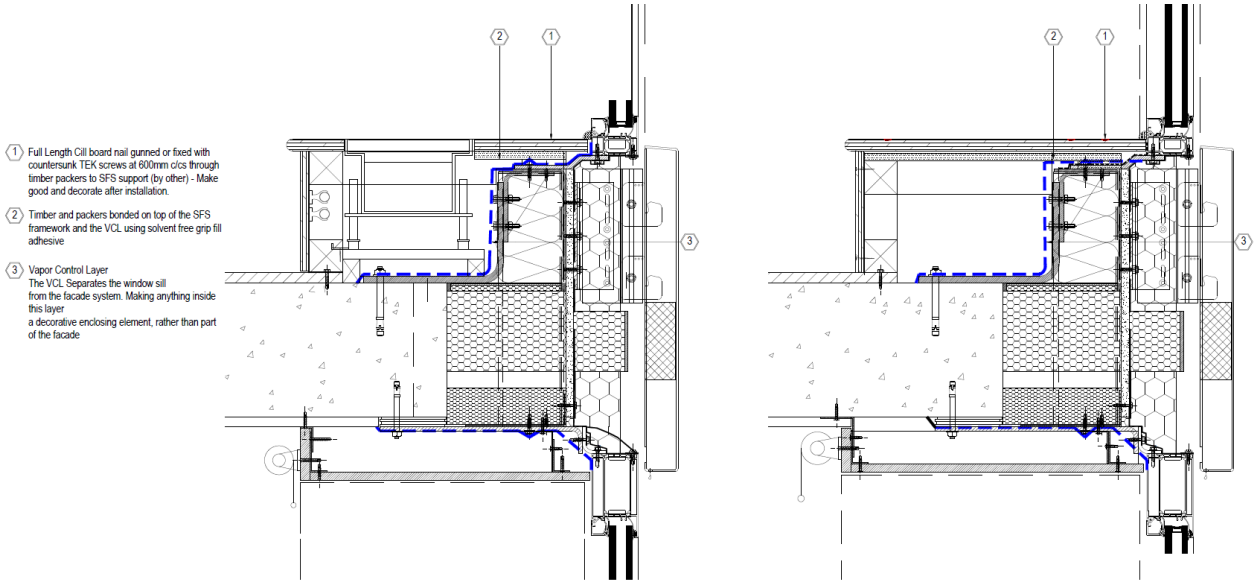
We use Medium Density Fibreboard (MDF) to create the boxing around the trench heater, as it is the most suitable material. It is easy to work with and fit, making it a commonly used choice for similar construction projects. To ensure the boxing is protected from water damage, we install an Ethylene Propylene Diene Monomer (EPDM) waterproof membrane on the outside, and Vapour Control Layer (VCL) on the inside, ensuring protection all around the boxing. We also install insulation in the window sill, behind the trench heater. In addition, the MDF sills are painted with eggshell paint to protect from water damage.

Specific considerations include:

Questions	Answer
1. ***How is it protected from water damage from every/any angle?***	This product is a standard MDF. The one-piece large sills are factory primed with paint for additional protection. Additionally, flexible sealant is applied to perimeter joints at the window and reveals.
2. ***What happens if two pieces of MDF have been installed rather than one?***	The instruction to McLaren is to install the sill as a single piece unless there is a valid reason for not doing so. Sills are to be produced in a single piece (no joints) of MDF with flexible sealant to perimeter joints at window and reveals. Sills exceeding 2440mm (standard MDF sheet lengths) are to be factory cut from a large format board to avoid joints. As we were progressing and improving our approach through learning, early installations may have sills in two parts. There should be no issue and we will check if there are any concerns and replace with a single piece sill as relevant.
3. ***Why is this type of MDF being used?***	The MDF product specified by McLaren is a standard and commonly used material known for its dimensional stability. It is compatible with trench heaters. A silicone-based flexible sealant is applied to the perimeter joint between the trench heater and the sill to mitigate contractions and expansions. Timber & Packers are bonded on top of the SFS framework and the VCL using solvent free grip fill.

Fire Safety Considerations

Simplified Drawing / Sketch



WINDOW CILL WITH TRENCH HEATER

WINDOW CILL WITHOUT TRENCH HEATER

The VCL is the fire protection line (blue line), anything on the left side of the VCL is essentially a decorative enclosing element rather than part of the façade fire system.

Fire safety considerations for the MDF used

- The MDF sill is not part of the external façade system. Even if the sill element was removed, the building would remain waterproof, as it is not part of the external structure. The upstand and sill are essentially part of the internal furnishings and fittings
- In terms of fire safety, the MDF sill acts as a floor upstand. From a fire risk perspective, the MDF sill is similar to having a laminate floor. The VCL separates the Window sill from the façade system, making the timber packers and MDF boards essentially a decorative enclosing element, rather than part of the façade
- The fire separation between the apartments is achieved through the concrete floor and the cladding fire barrier
- When considering the choice of MDF product, whether standard or ‘pink’, it’s important to consider flame spread rates. Pink MDF burns more slowly due to the addition of fire retardants, but it also produces toxic fumes.
- As we cannot mechanically fix through the VCL without compromising its integrity, we have to glue the timber to the back of the concrete above the VCL using a solvent free adhesive. To seal any gaps, we use Blue 60 foam, a high quality Polyurethane (PU) foam recommended for sealing applications where fire resistance is required.

Confirmation provided by independent Fire Engineer:

‘We are happy with the details you sent through, for these low level trench heater areas.’