

- do not scale dimensions from this drawing
- all dimensions to be checked on-site and
discrepancies to be reported to the architects

INTERNAL LIME PLASTERING TO CHURCH WALLS

Preparation of the Wall Surface

- The successful application, bonding and hardening of lime mortars, requires the background to be clean, free from vegetation, free of contaminants and reasonably dry throughout the wall mass. The wall should be structurally sound and the masonry and bedding mortars in good condition.
- The application of various dubbing out coats should not be seen as remedial repair work to the masonry or brickwork background, the replacement of missing or damaged masonry or open joints should be repaired before any plastering of dubbing out coats are applied. Where excessive hollow or unevenness is present the areas should be corrected by use of mortar and stone or brick slips bedded into the mortar, with the aim of presenting a reasonable flat background before plastering commences

Suction Control and Bonding

- Before the application of any new lime coatings, hydraulic or non-hydraulic, it is vitally important to check to the degree of suction within the background. Poor or excessive suction can result in a weak bonding with the substrate caused by rapid de-maturing of the newly applied render, which will result in a weak and powdery interface which will lead to later failure and separation. Where there is little or no suction, further action will be required to help bond the coating to the substrate. In situations where suction needs to be controlled, wetting down will be required. On dense blocks or near impervious masonry, simply dampening the surface with a mist spray may be all that is required. On very porous surfaces such as old brickwork considerable wetting will be required. Wetting the wall by use of a hose, working from the top of the structure, downwards, may need to be carried out the previous day or several times throughout the day before plastering commences.
- The objective of the suction control is to achieve a thoroughly damp surface, but not wet, i.e., the surface must not have running or standing water remaining on the masonry or brick, this will form a barrier between the coating and substrate, also lime mortars adhere and stiffen through a certain amount of suction.
- On dense or near impervious background, it may be necessary to apply a skud coat to the background to act as a mechanical key.

Salt Contamination

- Where new lime coatings are to be applied to masonry which is salt contaminated, the masonry should be allowed to dry fully before applying new renders. This will allow salt to be detected on the masonry and mortar joint surfaces, if excessive salt is identified clay or lime mortar poulticing may be required. Specialist advice should be sought.
- Salt contaminants should never be washed from the surface, as this will result in the crystallised salt returning to a soluble state and retreating back into the pores of the masonry or brick. Where detected on the masonry surface, the salts should be brushed from the surface and cleaned away from the structure
- The techniques employed in the application of hydraulic lime plasters are to ensure a correct bonding with the background while striving to minimise shrinkage and rapid drying, these techniques should be followed throughout the plastering process. Lime plastering is generally applied in 3 coats, but it is common to find 2 coats or even single coat work in vernacular or early structures. In 3 coat work the first coat on masonry or brickwork is generally known as the scratch coat or render coat, this coat is applied in approximately 10mm thickness. This coat can be applied by use of a steel trowel or thrown onto the wall by use of a haling trowel and then flattened in by the steel trowel. When this coat has firmed up but has not gone hard, the plaster is keyed or scratched up to produce a key for the following coats. The keying up is carried out by use of a lath scratcher or similar toothed instrument and care should be taken not to cut through the plaster coat back to the background.
- The keying up is generally in the shape of diamonds of approximately 30mm spacing. This coat should be allowed to harden for 72 hours minimum before further coats of plaster are applied. Before applying the second coat the first coat should be checked for shrinkage cracks, and these should be filled with plaster before proceeding with further coats. Also, before the second coat is applied the first coat should be brushed down to remove any dust which may have blown onto the surface. The first coat should then be damped down to ensure that the second coat is applied to a damp but not wet surface. This second coat is called the floating coat and is the coat which is used to straighten the wall to ensure a flat and even surface, after this coat has been applied, the surface of this coat is scoured up with a timber or polyurethane float.
- The purpose of the scouring is to compact the plaster and counteract shrinkage. This process is generally required to be carried out at least twice, during the scouring up, any small holes should be filled before the finishing coat is applied. This coat should also be allowed to dry and harden for 72 hours before applying the final coat.
- After once again damping down the floating coat, the final coat is applied. This coat known as the setting coat, is applied in two layers, coat on coat, with the trowel. This coat is applied in a way similar to skimming. This material should be of a wet enough consistency to allow an even spread. Once the setting has been applied, it is scoured in a similar manner as the floating, to counter-act shrinkage and then the surface can be left with a rubbed up rendered type finish or polished smooth with a steel trowel.

INSTALLATION OF NEW SHAKER STYLE KITCHENETTE

- What exactly is a Shaker style kitchen? A traditional Shaker kitchen is simple and practical, with a minimalist design and a high level of craftsmanship. Named after the Shaker religious movement, they feature symmetrical cabinets with distinctive framed panel doors
- Base and wall units come in standard sizes, and will form the basis of the kitchenette. But as products can differ, it is important that the installer reads the manufacturer's installation instructions carefully.

Wall preparation

- Remove wall plaque, high level dado rail and radiator from the wall. Existing pipe work to be isolated and removed by a qualified plumber.
- All the solid walls in the room are to be re-plastered using traditional lime & sand plaster. Please refer to **INTERNAL LIME PLASTERING TO CHURCH WALLS** for detailed description.
- Any services such as electrics and water are to be first fixed during the wall preparation stage. Both services are to be installed using qualified professionals.
- Newly plastered walls & ceilings are to receive their first coat of paint.

How to install base cabinets

- Use a spirit level to mark a horizontal guideline on the wall, where the top of the units will go, allowing for the height of the cabinet with legs.
- Move the assembled cabinets into place. Rotate the legs of each unit until they align with the guideline on the wall. Use your spirit level to ensure that the cabinets are all level.
- Clamp adjoining units together. Then drill a pilot hole between the two hinge holes, through one cabinet wall and into (but not completely through) the next (use masking tape around your drill bit as a guide.) Then, screw the units together. For a more secure fixing you can use cabinet connector bolts (sold separately).
- Once all the cabinets are connected, secure them with brackets on the wall for each unit. Mark the drill positions in pencil on the wall. Installer to check for pipes or cables before drilling into the wall. It is important to use wall fixings that are suitable for solid walls. Installer to angle the screws downwards slightly so that they remain easy to access over the back edge of the cabinet.
- It is essential that the gap left for the under counter fridge be 600mm deep and 600mm wide. A fridge unit is to be purchased prior to the kitchen installation so that the required height of the underside of the work surface is determined.
- Once the base units are in place a template can be scribed for the worktop and then the top can be cut to fit over the base units. The worktop can then be fixed in to place using brackets.
- The tiled splash black can then be installed, grouted and sealed.
- A circular stainless steel sink is to be fitted with mixer tap and plumbed into the existing system.
- Sealant is to be used around the circumference of the sink where it sits on the worktop.

How to hang wall cabinets

- Wall units hook onto brackets that are securely fixed onto the wall beforehand.
- First, measure up from the top of the base unit and mark where you want the bottom of the wall unit (making sure to allow space for the thickness of the worktop.) Use a spirit level to create a horizontal guideline that stretches as far round as your wall cabinets will go. Then, measure and draw another line for the top of the wall cabinets.
- Next, check the manufacturer's instructions to determine the right placement for the wall brackets. Each unit will normally need two – one in each top corner. You can hold the bracket in place and mark the position of the holes, but how you fix them will depend on what type of wall you have. The church has solid masonry walls with lime plaster. It is therefore essential that the installer use the correct fixings to secure the wall brackets to the wall.
- Once your brackets are properly secured, hook the wall cabinets onto them, using the adjustment screws in the top internal corner of the cabinet to align them accurately. Place a spirit level across the top of the cabinet and turn one screw to level it. Then, place the spiit level against the front face, and adjust the other until it's vertically straight and secured properly against the wall. Check to see that the cabinets are level with one another and adjust again if necessary. It is essential that the wall hangers are properly connected and adjusted so follow the cabinet instructions carefully

REMEDIATION TO LIME PLASTER CHURCH CEILING

- Lime plaster is essentially a wet mixture of slaked lime (calcium hydroxide) and fine aggregate. Once dry, the plaster begins to slowly harden through the chemical reaction between lime and carbon dioxide in the air known as 'carbonation'. The result is a tight matrix of aggregate and calcite crystals (calcium carbonate).
- The ceiling in the chapel will need remediation work due to the installation of a loft hatch and localised water damage caused by rain water ingress when the lead was stolen from the roof.
- Because the ceiling is in a listed building then all work will require approval and or guidance from the local conservation officer and any structural changes from a structural engineer
- For restoration and repair work, lime putty should be a minimum of three months old. Historically many different types of sand would have been used – a blend of fine and sharp sand or whatever was available locally. Currently a good quality well-graded sharp washed pit sand is used for fine work. The standard mix is one part lime putty to 2.5 parts sand with the addition of cow, horse or goat hair (2-4kg (4½-9lbs) of hair per cubic metre of mortar). This is scratched after application using a three-pronged lath scratcher.
- The plaster then starts to dry and initial carbonation begins. The timing of subsequent coats depends on temperature and humidity. Generally one month is an average drying time for the first coat. If the first coat has become very dry the surface should be dampened prior to the application of the second coat.
- The second ('floating' or 'straightening') coat uses one part lime putty to three parts sand to a thickness of 10-15mm (3/8"-5/8"). Hair would also have been added but at a lesser quantity than for the first coat. The second coat is ruled flat and scoured using a wooden float to consolidate the surface. A devil float (a wooden float with nail points projecting about 2mm from each corner) is then passed over the surface to give a key for the finish coat. This surface also needs to be dampened to control suction before the application of the finish coat.

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