

DESIGN & SPECIFICATION CONSIDERATIONS THE USE OF CLAY BRICKWORK IN LANDSCAPING SITUATIONS

Clay facing bricks have been used with great success and longevity in buildings. Survival of the older buildings is down to numerous factors including location, design and workmanship and avoidance of instances of damage or dereliction.

Moisture is the biggest enemy of construction materials. Successful construction is focused around the prevention of its entrance into the buildings fabric.

Design detailing plays an important role in shedding rainfall away from the walling and minimising permanent saturation. However, when the walling is subjected to rainfall, individual bricks are only being wetted from one side (or 1 stretcher and 1 header in the case of corners).

Historically, depending on location, various building materials have been used that were readily available and suitable for keeping the weather out. Slate, stone, thatch, brick, wood, lime mortar etc. In conjunction with design detailing they lasted many years. Today these materials are still used along with newer material developments. However, perception and expectation of the performance of the more traditional materials is increasingly under scrutiny from the Consumer.

Because these materials have been seen to seemingly survive for so long, the expectation is that they can be used in any manner for any effect, not only in buildings but increasingly in landscaping situations, and still withstand the elements.

Clay facing brick can be used with great success in garden and boundary walling if associated materials and the design are appropriate to the geographical location and exposure to weathering.

Bricks in landscaping situations will not perform durability-wise in the same manner as if they were used in a building. They are in a much harsher environment subjected to saturation from rainfall and groundwater which can contain numerous impurities that could be harmful to brickwork. They are rarely constructed with this in mind. Often house-owners will construct half brick thick walls (100mm) as a cost saving boundary or edging solution.

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1. PREVENT PERMANENT SATURATION OF FACING BRICKWORK

Brickwork garden walling should be a minimum 215mm wide for stability. At least 4 courses of Engineering quality bricks should be at ground level (2 courses below and 2 course above) to minimise the upward rise of moisture by capillary action. The downward flow of water through the jointed coping/capping can be prevented by inserting a high bond DPC under the capping or coping course. Moisture will also attack from the rear in retaining wall situations therefore **for improved durability the faces of retaining brickwork in contact with all soils and clays must be protected with a minimum 2 coats of bitumen or self adhesive membrane before backfilling.**

Consideration is also needed regarding the type of material that will be placed next to the brickwork. Its proximity may cause increased water run-off directed towards the brickwork (i.e tarmac).

The mortar joint is the path water will take through the brickwork courses. As it drains down it can cause free lime present in the mortar to be released. This can cause unsightly staining (pictured) which needs removal or it will harden and remain visible. Excess moisture can also cause efflorescence to appear.

A strong mortar mix is necessary for the durability of the brickwork. Do not recess mortar joints. Consider whether brickwork will be adjacent roadways where de-icing salts will regularly be used.



Lime stains emanating from mortar. No damp proof membrane has been incorporated under the brick edge capping.

2. ALLOW FOR MOVEMENT OF BRICKWORK AND SURROUNDING MATERIALS

Brickwork will move due to thermal expansion and contraction on a daily basis. For coping and capping courses a compressible movement joint must be provided every 2.5 to 3m. If not stresses may be set up leading to cracking and eventually to frost attack. Paving materials such as concrete blocks, pavers or in-situ concrete tend to expand and contract even more than brickwork. Along any abutting areas of differing materials, consideration should be made for the accommodation of any movement.

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3. STEP SITUATIONS

Brick risers in step situations are always at high risk of failure. They are often sandwiched in mortar between concrete treads and subjected to saturation and thermal expansion and contraction. Clay facing bricks should not be used or it should be expected that brickwork may need more frequent replacement if used in this situation. The mixing of different materials in the same structure should be avoided. Proprietary concrete risers or pavers should be used in this application.



RKBI does not offer a durability warranty for facing bricks used in steps, ramps & paths. To prolong the life of your garden walling always;

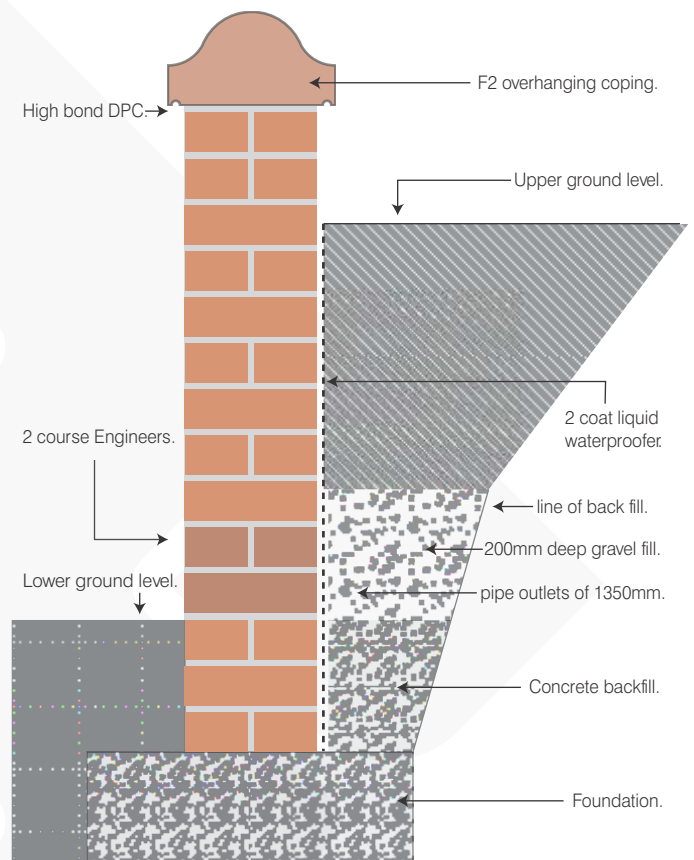
- Ensure the use of F2 (frost resistant) bricks.
- Carefully consider the mortar mix and mortar joint profile.
- Prevent movement of water through brickwork. Use correct damp proof detailing.
- Allow for thermal and differential movement of materials.
- Use overhanging copings in preference to cappings in garden walling where possible.
- Use proprietary clay pavers and fittings in pathway construction rather than facing bricks.



Chailey Multi Stock Paver
Henley-on-Thames



Swanage Handmade Multi
Milton Keynes



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For further information please contact

R.K. House, Opp. Power House, Godhra. 389001. India. | T : +91 2672 260261 / 262854 | M: +91 98250 48755 | +91 98254 22020
E : jagdish.katiya@gmail.com | info@radhakrishnabricks.com | W : www.radhakrishnabricks.com