

## **Living with – and repairing – bungaroush/bungaroosh**

*Before working on Bungaroosh, there is a need to understand how it was originally made and why!*

### **Construct**

Bungaroosh is made principally of lime, gravel, coarse sands and flints, often with some brick snaps/fragments or other deck rubble added. The combination forms a type of wall, of reinforced lime concrete.

Bungaroosh offered an easy and proven way to create a wall that was strong, durable, cheap and was usually designed to be rendered. In Brighton and Hove, it was mainly used for garden walls and the party or rear walls of terraced houses, although it is also found as the infill in front elevations between the sill and head panels of windows.

### **A very short history**

Lime rubble concrete has been around for thousands of years. The Romans used it (along with a lot of volcanic graded ash and nodules\*) to form the massive walls and domed roof of the Pantheon, which is still the largest unsupported lime concrete structure in the world.

It became an important building material during the 19<sup>th</sup> century building boom in Brighton and Hove because it was less expensive and helped to keep brick taxes down.

\* A subject needing its own paper

### **Why build in this stuff?**

To best answer this, you have to put yourself in the time of their constructions from before when I can guess, up to the mid-1800s. Horses and carts were prevalent, and materials were taken from the closest and cheapest source.

Busted, underfired, and bent bricks from the local clamp firing of the day were cheap. Flints from the fields of the Chalk Downs (farmers glad to see the back of them) were also very cheap. Created rubble and dust with dropped lime mortar cost virtually nothing.

## **How they were created**

The deck of the area of working was scraped clean down to virgin chalk base. Timber planking (about 1.5” x 18” – no metric then) was braced into position where the wall was intended to stand. The brick quoined corners were raised to shoulder height, then two or three inches of a lime/rubble mortar was shovelled in, flint, snapped brick and more lime mortar\* was layered on top.

This process was repeated up to a height of about 18 inches. When this section was sufficiently firm, the boards were moved up and the process was repeated. As the wall was raised, horizontal timbers would be inserted to provide fixing points for studs. String courses in brick and, in some cases, also pine noggins were embedded to give fixings to skirting studs. Joisting was laid/embedded onto a brick coursing or on a pre-bedded sole plate of pine as going, and so up they went.

Where windows and doors were to be located, the surrounds were finished in brick, the reasoning being that edges in flint/rubble and lime cannot be used to create viable corners.

Chimneys and flues were also made of brick. Some have their back faces in bungaroosh as it is the wall they are butted up to/with.

\*Another subject needing its own paper

## **Failures**

Bungaroosh walls can become friable and even collapse. The reasons range from poor build quality materials or low lime content, to particle erosion caused by salt infused pebbles and sand from the beach. Water can get behind the cement rendered face of the wall, washing away the trapped surface of the wall, while badly carried out repairs – for example, using incorrect materials such as modern cements – can also lead to collapse.

## **Problems and what to do about them**

Repairing bungaroosh is not a job for amateurs because it involves the use of shuttering and lime. If you are watching what your builder is doing, wear protective clothing and goggles.

HSE stuff: If hot or putty lime\* splashes onto your bare skin or you swallow any, use copious amounts of clean water to reduce its effects and seek medical help.

\*Yet another subject needing its own paper

If the wall is rendered, remove render from the problem area and failed area beyond it. Collect all the bungaroosh material – fallen rubble, sand, gravel, bricks and flints. The 1” sieved gravel and sand should be mixed with either putty or hydraulic lime – hydraulic is better – in a ratio of 2:1 (two parts of washed sand and recovered gravel by volume, to one-part NHL 3.5 lime) i.e. mix the recovered rubble as 2 parts rubble to 1 part plastering sand together, then 2 parts of the R+S mix to 1 part NHL 3.5 lime.

Soak the damaged area with limewater – (the water taken from the top of a bucket of putty lime that has settled for 24 hours) – then wedge a top-gapped plank against it. Now it can be rebuilt, using the recovered and remixed materials in layers, in the same way as it was built originally. Allow the bungaroosh to carbonate and dry for at least two weeks before re-rendering.

### **Spalling or face failure**

When the face of the bungaroosh fails – for example, because water has washed it away or because it is slowly being eroded by salt contamination – you can usually stabilise the area and halt erosion by spraying it with limewater. A grit/sand/lime mortar in a 2:1 ratio should then be flashed/worked wet on to the face of the wall to achieve a stable face. Keep it damp for the first few days with an atomiser. Do it in layers if possible.

### **Hollow render**

On a rendered bungaroush wall, the first sign of trouble is often cracking or hollowness caused by the render coming away from the surface of the bungaroosh beneath it. So, drill 1” holes at 45 degrees angled up, and + 2” apart where lifted area exists and funnel water into the voids until deemed well wetted. Gun into the holes a lime slurry\* bunging up the weep holes as bleed out starts. Fill holes to fair face after one week, or get a trained trades person to do it for you.

\* And another subject needing its own paper.

## **Do**

- Ensure that you identify and deal with anything causing damp or water ingress. It's a good idea to look out for dead pigeons in your hoppers, vertical cracking down the back of your rain pipe, badly maintained or badly fixed gutters, vertical or horizontal cracking to the render, rising damp caused by soil/path levels being raised, ventilation grill blockage or leaks in internal plumbing.
- Call in an expert surveyor and/or company to confirm the cause of any problems and recommend a best course of action. It can be a problem finding someone but persist – there are experts out there and they can help.
- Find the cause of the problem and deal with that first, then call in the experts.
- Remember, symptoms need a cause.

## **Don't**

- Assume that you can work a DIY repair by slapping cement-based sticky plasters onto the wall. It's a bit like gluing a tin plate onto a wet sponge – the sponge stays wet and rots, while the tin plate goes rusty and falls off.
- Believe anyone who tells you bungaroosh cannot be repaired. It can.
- Ignore it. Your walls could become unstable – and then an interesting pile on the floor.

*Written and edited by Neil England and based on more than 50 years of hands-on and material investigations, reading a few very interesting reference books and always asking/watching a few very clever old Master Craftsmen.*