Granite Cottage April 2004

Advice to limewash it

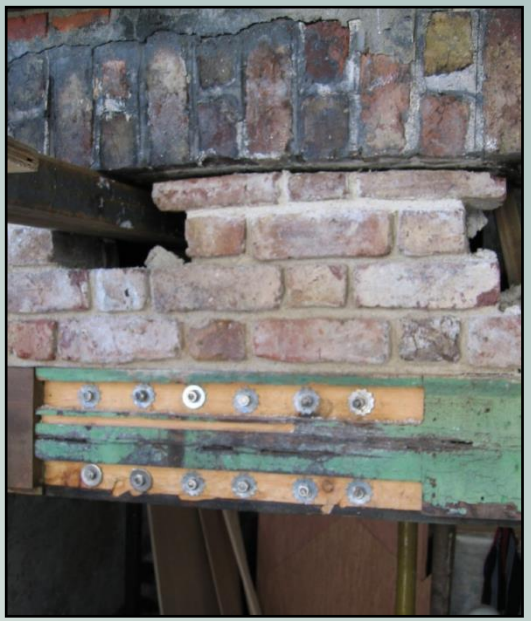
Lime Putty

2004 Merrion Sq Mews

followed Architects requirements for lime putty mix for wall rebuild and wall plate reseating

Lime Putty exchanged for Hydraulic Mortars

2004 Merrion Sq Mews



Lime Putty

2004 Merrion Sq Mews
followed Architects requirements for lime putty mix for all repairs

Lime Mortar Specification

A Specification is a detailed description of the design and materials used to make something.
This could be considered quite prescriptive saying exactly what must happen and giving an instruction and making rules.

Do we want rules for something that should be considered traditional?
And what's wrong with doing something in a traditional way that's continued for a long time?
But do we know what the traditional ingredients and methods were?

Lime Mortar Specification

Building Limes Forum Journal 2005
"Specification writing – a question of Standards"
Stafford Holmes

Unlike many in the building industry who focus on new construction those who repair existing buildings are concerned with the care of well-weathered , often traditional materials.

.....

The compatibility of adjacent materials , particularly where they are subject to external weathering , is important if building Fabric is to be avoided or at least minimised.

Not only the present Standards for building limes but all current standards need to be treated with extreme caution for those concerned with the care and repair of old buildings and sustainable materials. .....

Should a Specification rather be considered as a framework within which the thing (mortars) can be made and applied to a building repair.

C15th tower house
Shanganagh Shankhill,

Drimnagh Castle +
Building Limes Forum
Ireland + Pat McAfee

Specification of lime mortars
Key points

There is no such thing as a ‘standard mix’ for conservation and repair work.

To produce a successful mortar specification, it is vital to consider the background first and foremost.

Detailing, environment, location, season and exposure are secondary considerations but still vital to the final outcome.

Mortars can, and should, be designed to be ‘fit for purpose’.

The current perceived success of a job is whether it survives, but it may not tell the whole story.

Don’t expect a good job without employing good tradespeople – no matter how good the specification is!

Uses for lime in building

Mortar for Building and Pointing
Fills gaps and binds

Mortars for Harling and Rendering
Covers & weathers surfaces

Plaster Internal surfaces
walls & ceilings

Decoration / Limewashing
White & coloured, external + internal

Also more specialist conservation such as
Grouting / Rough racking
Surface stone repairs
Limewater consolidation

Rathfarnham Castle
Rough cast harl render.

Why Lime

- Natural material
- Breathability
- Flexibility
- Environmental friendly
- Recyclable
- Aesthetically pleasing
- Use in sustainable new build

Clare Island
Limewash over stone

Aggregates

Building Sand

Sharp Sand

Silica Sand

Shell Sand

- Our natural geology provides a wide range of aggregates (in terms of colour, grading and mineralogy) – many ideal for building, pointing, rendering and plasterwork.

- River bed, beach and 'as dug' sand was commonly used – whatever was available locally – commonly the same materials were used throughout the build – for building, pointing harling and plastering processes.

- Soft, building sands (commonly used in cement work) are rarely used in lime mortars – they require more water and are more liable to shrinkage cracking.

- Sharp, well graded sands are preferred due to their angular, interlocking nature. Most sands considered for lime mortar and renders will be sharp, well graded

Hot lime mortars

Advantages.....

Improved workability
Cheap to produce relative to NHL and matured putty mixes
Fast initial stiffening due to high temperature created by slaking
(depends on mixing regime)
No 'swimming' of low suction masonry
Improved bond to the masonry
Better replication of historic mortars

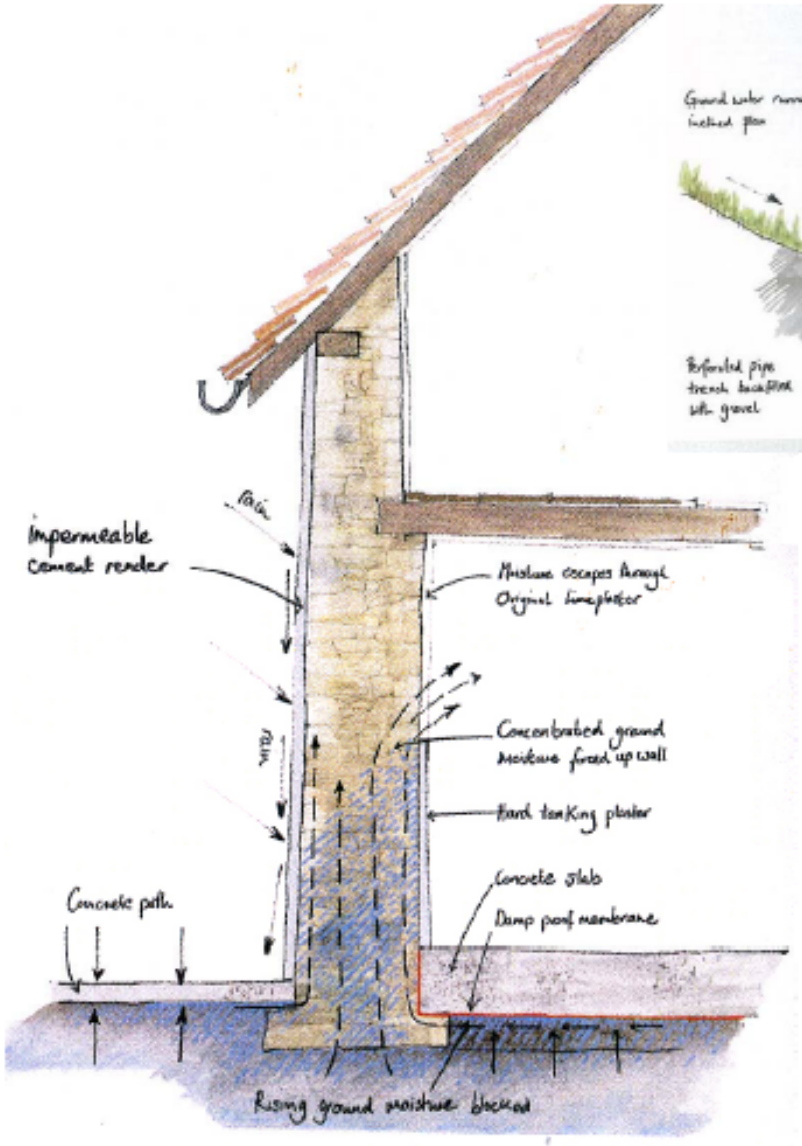
Disadvantages.....

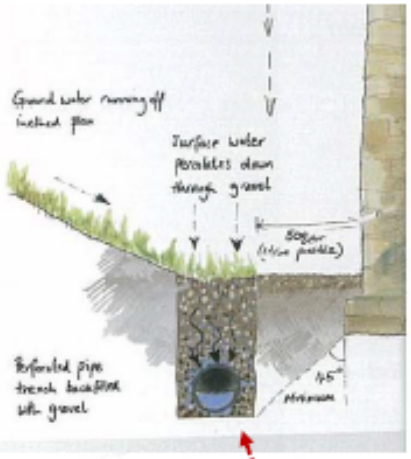
Increased work in the mixing process
Unknown performance characteristics (other than practical experience)
Health & safety concerns (only an excuse)

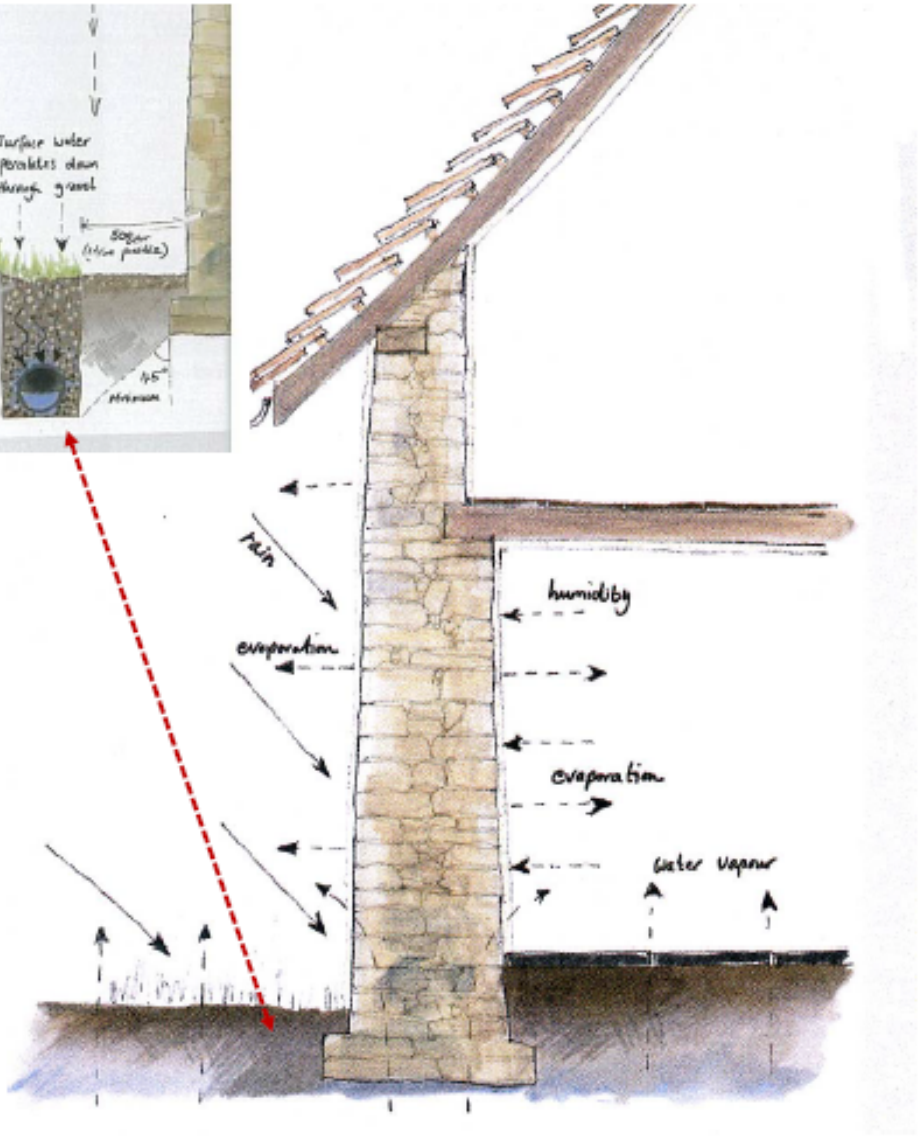
Specification of lime mortars

Performance requirement checklist: mortars need to…..

1. Have characteristics which are compatible with the host masonry.
2. Have adequate bond strength.
3. Have a degree of flexibility (Modulus of Elasticity).
4. Be vapour permeable.
5. Be durable.
6. Be capable of being finished to achieve the desired visual appearance.
7. Remain workable long enough to allow details to be fashioned.
8. Provide the correct colour and texture.
9. Absorb water sufficiently in wetting and drying periods to match masonry.
10. They must always be reversible, never becoming so strong as to make repair by removal and replacement impossible without permanently damaging the host substrate.







Traditional solid wall construction – poorly repaired

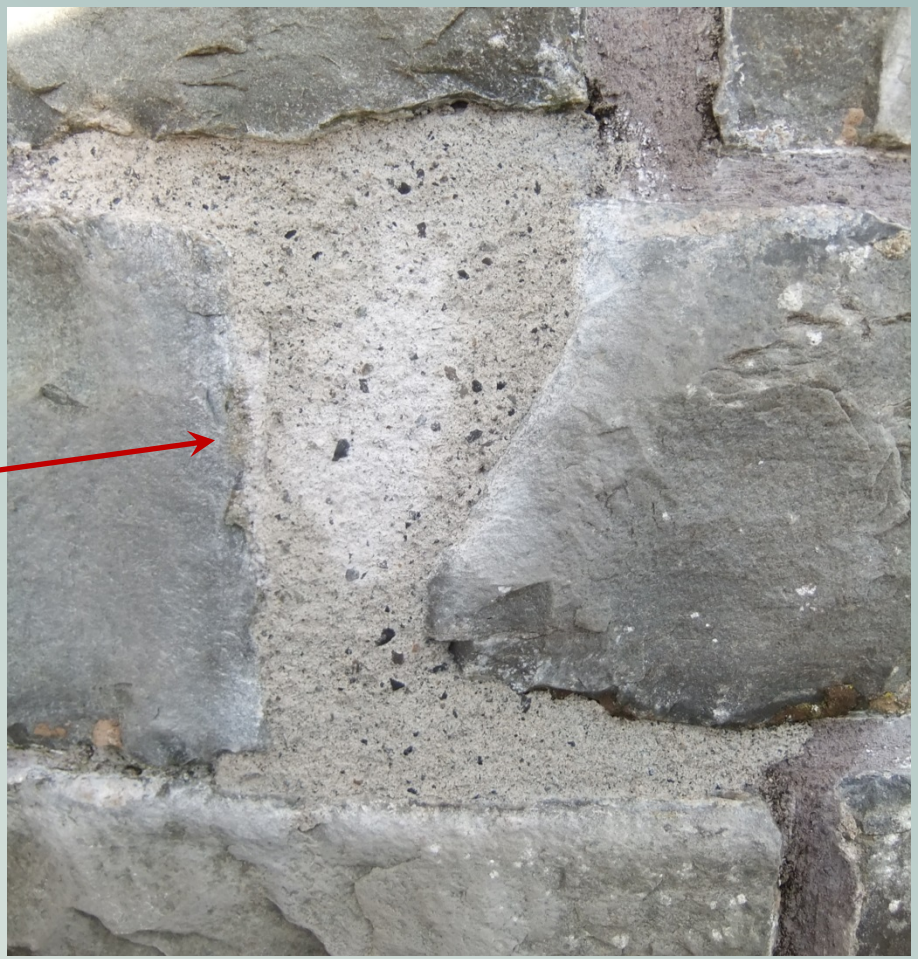
Traditional solid wall construction – maintained as designed

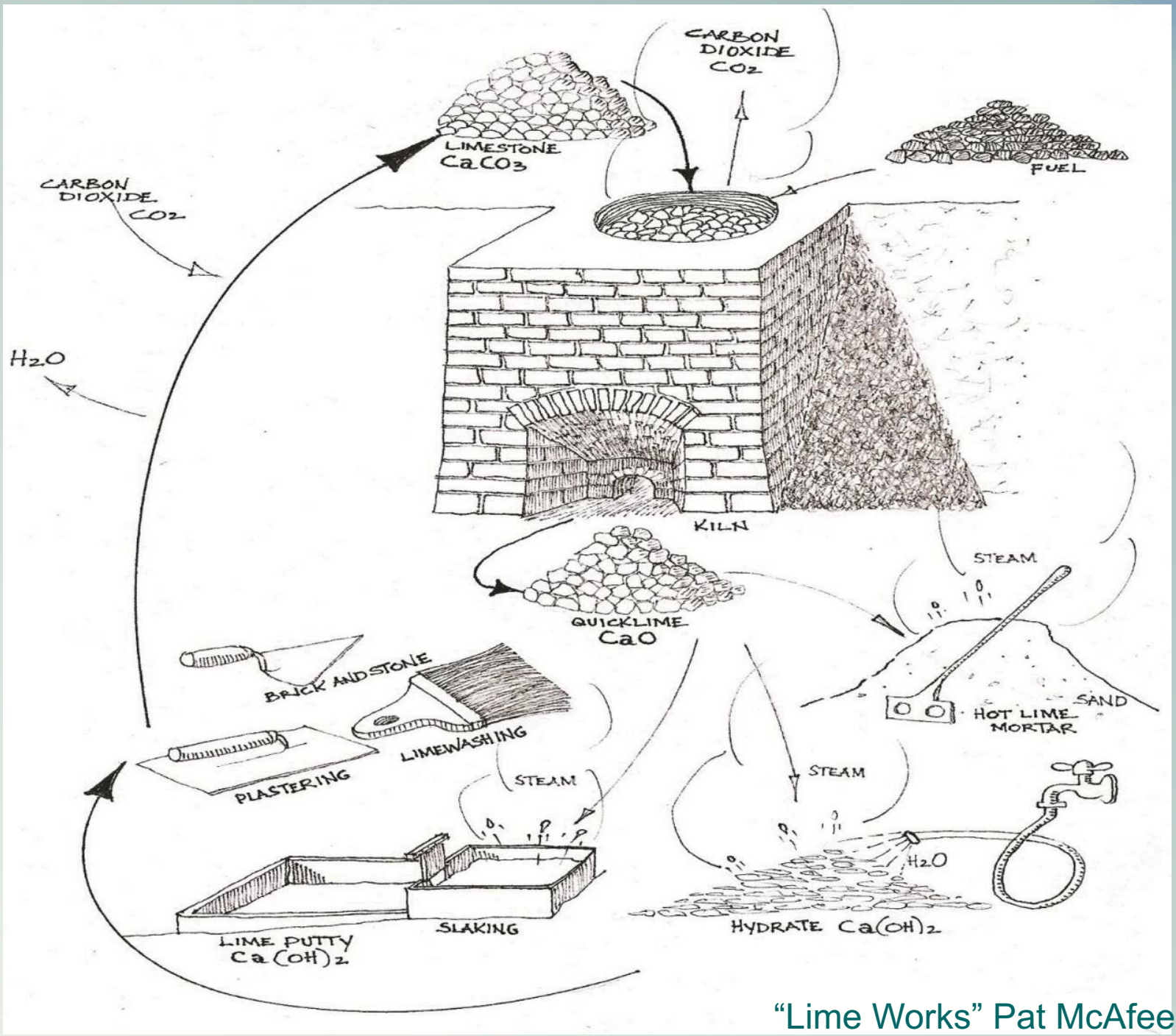
Source – Old House Handbook, Roger Hunt & Marianne Suhr

Issues with the pointing and/or voids in the wall?

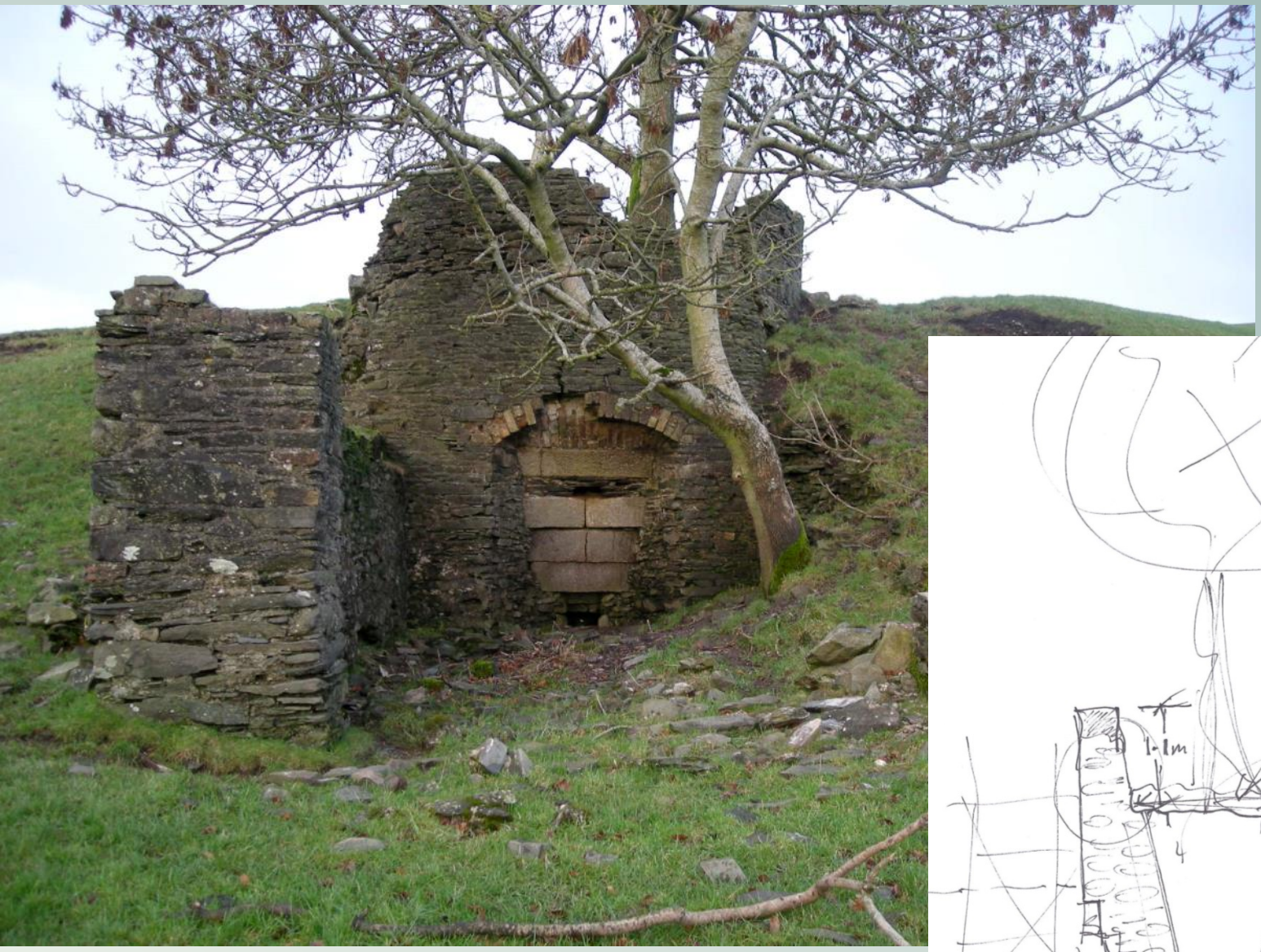

The water is trapped behind the pointing as experienced when a sample of pointing removed for analysis

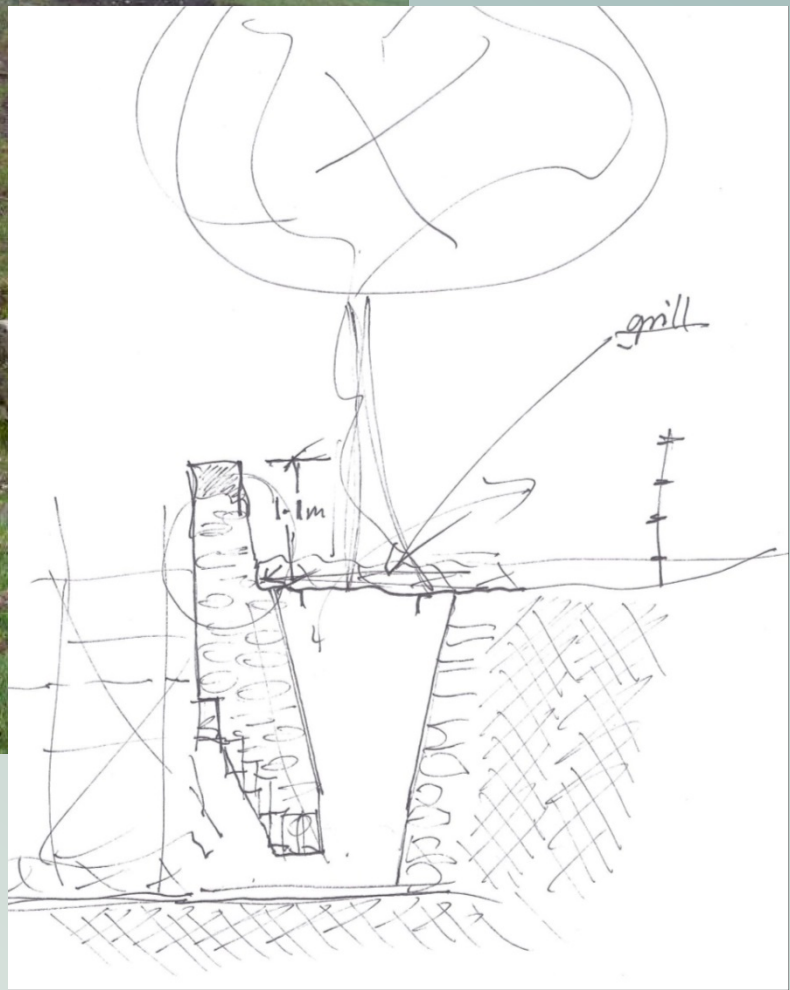
A new piece of pointing (inserted where samples removed) – has characteristics that lets water wick out and evaporate from surface





"Lime Works" Pat McAfee




grill
1.1m