

Traditional Mortars Symposium York 10,11 & 12 June 2019

Stone Conservation and Repair Projects at Wilton
House, Wiltshire using
hot - mixed lime mortars and sheltercoats.

Hot - mixed limewash and fresco trials at
Elm Grove Studio

Wilton House - Triumphal Arch
C18th (1758-62)

Designed by William Chambers

Moved from original location in
garden in early C19th

Constructed of Chilmark stone





After mortar repairs and shelter coat

Hot-mixed shelter coat for Chilmark stone

Buxton powdered quicklime (Calbux 90) - 2 parts

Shaftsbury Greensand (40s) - 3 parts

Chilmark stone dust (40s) - 2 parts

Portland stone dust (40s) - 1 part

Horton Brown stone dust (80s) - 1/5 part

Raw Umber pigment - 1/25 part

Quicklime : aggregate ratio 1:3

Casein powder - 5% added to undiluted mix on day of application then thinned with water.

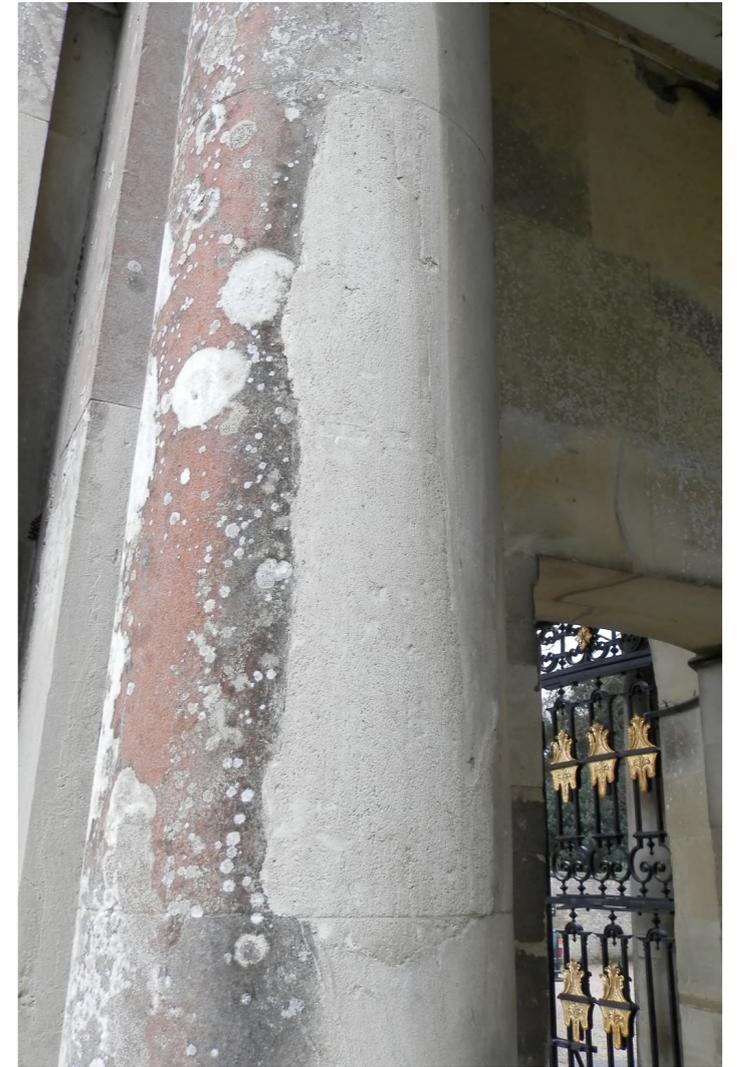
Or casein can be mixed with the dry quicklime and aggregates before producing the hot mix.



Comparative trails of hot mixed lime mortar and hydraulic lime mortar



NHL 2 hydraulic lime: Chilmark stone repair mortar - April 2015



Hot mixed lime: Chilmark stone repair mortar - April 2015

Hot mixed lime trial repair mortar (Chilmark stone)

Singleton Birch powdered quicklime- 2 parts

Wareham washed sand <2.36 - 3 parts

Shaftsbury Greensand - 1 part

Frith End sand - 2 part

Quicklime : aggregate ratio 1:3

Mixing procedure: quicklime and aggregates mixed dry,

1 part water added allowing the mix to dry slake, get hot and produce steam.

More water (about 1 part) gradually added and mixed thoroughly
to desired consistency.

Small scale hot mixed lime mortar.

1 litre measure of Singleton Birch powdered quicklime to 3 litres of aggregate



Hot mixed Chilmark stone repair mortar

1. Mix 1 part quicklime (Singleton Birch micro lime 90 powder) with 3 parts aggregate (graded greensand and calcite sand)
2. Mix in 1 part water
3. Allow to dry slake and reach around 100C
4. Mix in approx 1 measure of water to desired consistency
5. Apply to stone when hot, warm, cold or store for further use

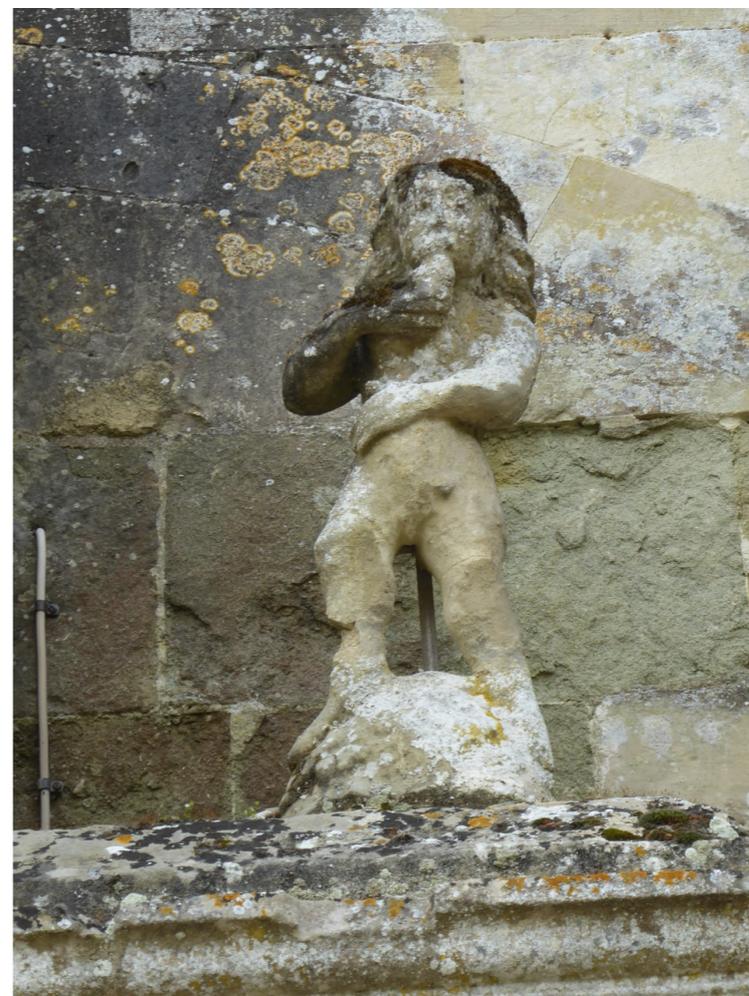
Gothic Tower - Aedicules







Wodewose figures





























































Nicholas Durnan

Stone and Sculpture Conservation

www.nicholasdurnan.co.uk
nicholasdurnan@mac.com

Wilton House - Triumphal Arch
Conservation Team

Contractor: Nicholas Durnan
Conservator: Tom Beattie
Masons: Rob Hawes and Steve Beer
Carvers: Jay Battle and Roger Stephens

Wilton House - Aedicules
Conservation Team

Contractor: Nicholas Durnan
Conservator: Christina Kaye
Conservator: Tom Beattie

Elm Grove Studio

Design: Arthur Lynch
Hot- mixed lime plastering: Peter Gambier
Hot mixed lime wash: Nick Durnan