

THE RESTORATION OF PORTSMOUTH DOCKYARD BLOCK MILLS (BUILT 1803), 2006-8 Coats, A. (July 2009). *Dockyards*, 14(1), 14-18.

Report on the meeting of the Portsmouth Society, 3 June 2009 St. George's Building, University of Portsmouth

Malcolm Ives, Defence Estates Portsmouth Andy Lumsden, Debut Services South West Ltd (placed all works) Steve Barrett, WYG Management Services

Malcolm Ives outlined the national rôle of Defence Estates. Nationally they are one of the UK's largest landowners, owning 1% of UK land which contains 793 Listed Buildings and 720 Scheduled Ancient Monuments, holding the government's largest heritage portfolio. Their remit is to maintain them sustainably, find the best use and 'whenever possible open them to the general public.' Inevitably there are conflicts between military and heritage priorities. Eighty per cent of MOD buildings and 89% of the Scheduled Ancient Monuments/Listed Buildings are in a 'good' or 'fair' condition. Twenty-eight of their buildings are on English Heritage's Buildings at Risk Register (BARR), but DE have appointed a BARR Officer. Four other structures within Portsmouth Naval Base remain on BARR: No.6 Dock, 2-8 The Parade, the Iron and Brass Foundry and No.25 Store. Defence Estates' annual outlay in the south of England is £40m, so Block Mills - estimated at £1-2m - was not a 'large' project. Up to £2m was allocated by Defence Estates in 2007, with further funds for internal works at the beginning of 2008.

English Heritage and its predecessors had been concerned about the Block Mills since the 1960s. A Scheduled Ancient Monument and Grade I Listed Building, it had been classed as a Building at Risk since the Register began in 1998. Chairman Sir Neil Cossons visited the building in 2003 and 2005 and the Chief Executive in January 2006. It published Jonathan Coad's book on the Block Mills in 2005.

Steve Barrett began by saying that the building was unexceptional amongst late Georgian industrial buildings, but its activities were highly exceptional. He summarised WYG's restoration approach, overseen by English Heritage. For historical evidence they were guided by Coad, J.G. (2005) *The Portsmouth Block Mills: Bentham, Brunel and the start of the Royal Navy's Industrial Revolution* (Swindon: English Heritage), and surveys made by English Heritage and Wessex Archaeology. English Heritage advised their approach through much pre-application discussion. Scheduled Monument Clearance was agreed in March 2006, and the discharge of conditions by frequent site-visits and other channels by Dr Rory O'Donnell, Inspector, and Mr Alan Johnson, Architect of the EH, GHEU branch in London.

There were no other records available of changes made to the building since 1805. Steve described the layout simply: north and south ranges running west-east three storeys high, with a single storey range infilling the middle space. The first floor corridor crosses the middle range north-south. The main hazard throughout Block Mills' life has been damp rising from the Reservoir over which it was built. Ironically, open windows, roofs and doors, while letting in rain (sometimes in torrents), also produced an air flow which had ventilated the building fairly well since blockmaking ceased in 1983. Without it, internal timbers would have been ravaged by rot. WYG is confident there is only one original 1803 window: in the North Range stairwell, hence preserved from weathering. The rest had been replaced throughout the building's history. It is thought that the North Range roof was flat originally to accommodate a water tank of approximately 200 tons: Bentham's fire risk management in a building containing a steam engine, coal, vast amounts of timber and friction. The South

Range had a late C19 hipped roof similar to the original design; the North Range had a beautiful Belfast truss frame thought to date from WWI.

WYG's project brief in 2006 was to carry out an option survey with the aim of removing Block Mills' category C 'poor' BARR classification. Their construction brief:

- Restore to wind and watertight condition
- Replace North Range roof to match South Range roof
- Reslate South Range roof
- Restore fabric and windows (replace/repoint brickwork; replace/repair windows)
- Improve rainwater dispersal from the roof
- Improve fireproof access inside South Range
- Remove rotten wood
- Remove asbestos from electrical control boxes
- Install fire alarm and lightning conductor systems
- Avoid intrusive cabling etc
- Scaffolding to be freestanding, not attached to the building

The core principle was to repair/replace what was there, not restore to the 1805 state: 'Block Mills is a wonderful building to read for what has happened over the years.' Conservation was to be minimally invasive, but with no attempt to hide the repairs, so the building would continue to be read. Steve illustrated the process with 'before and after' slides.

Work began at end of 2006, with the erection of scaffolding. By January 2007 the North Range roof was extremely fragile, with missing slates, ridge lead flashing ripped away and lead guttering in the valleys worn to almost nothing. 'It was at the end of its life.' One enigma was a disappearing course of bricks running from east-west in the North Range south-facing wall, below the top range of windows. It meant that window frames and sills were misaligned. This was corrected, the whole top section of the wall and roof parapet being rebuilt with mostly new bricks by Cathedral Works. Lambs Bricks & Arches supplied them. The new imperial bricks look much brighter than the 200 year-old grimed bricks, but were colour-matched to the inside of the originals. Where possible originals were retained, including glazed headers. The roof is now the same height as the south roof, but with a slightly different pitch, and without the west-facing roof light of the south roof. This could be inserted later. Steel trusses were used to support the roof, as 11m spans of timber were unavailable. Timber rafters topped them, then sarking boards (75% were retained) to take the slates. Portland stone was used for the coping stones.

All window frames were taken out and rebuilt individually by joiners who set up their woodwork shop inside Block Mills for a year. Sound wood was retained and frames remade according to the existing pattern, testimony to changes made over 200 years. They were pivoted in the existing manner. All woodwork was painted. Rubbed brick arches over doors and windows were replaced by Cathedral Works. Bricks were repointed. A large piece of concrete between two doors on the south front between the first and second floors was faced by new brickwork.

Cement mortar could not be replaced throughout due to cost restraints, but in the worst areas it was replaced with lime mortar, carefully tested to match the original composition.

The ships' timbers used in the north-south first floor corridor were rotten, as lead flashings had perished. Windows were replaced to the same design and lead flashings applied in very

difficult positions. English Heritage approved the use of lead to replace the shallow pitched slate roof.

The lead-lined roof gutter on the South Range was worn and its shallow pitch had allowed water to rise by capillary action, therefore a steeper pitch was designed. Richardson Roofing did all the leadwork. Festiniog slates were used for the roof.

A major change to the building's appearance was removal of the C20 fire escapes from the south front. In all 400 pieces of iron (brackets, nails etc) were removed, as rusting was pushing apart the brickwork.

In the central ground floor range lights were remade with cedar, replicating the existing pattern. Where rain had penetrated from the crossing corridor, roof-mounted machinery had to be carefully surveyed and taken down to replace the cross beams, incorporating a very complex scarp joint. Wall plates of 3m in the south-facing north wall had to be replaced by reclaimed timber from France. Andy Lumsden commented that the skilled craftsmen of Green Oak Carpentry enjoyed decoding this intriguing building.

Inside the North Range ground floor timbers, badly rotted from the water below, were replaced, with a damp proof membrane added. Wessex Archaeology recorded them as they were removed. The final cost of the restoration was £2.5m and from the April 2006 survey to completion in August 2008 represents a major achievement for Defence Estates. Budget constraints and removal of the fire escapes will restrict large scale public access, so future use as a museum would involve installation of more fire escapes.

There is also no disabled access to the first or second floors.

The building itself was almost certainly not intended to last 200 years, but is unquestionably an historic building, for it signifies the Royal Navy's technological innovation of mass-producing blocks using steam power. Crucially, restoration has now removed Block Mills from the *Buildings at Risk Register*, the primary aim. The quality of the work was recognized by a Georgian Group award in 2008. English Heritage has agreed a Conservation Management Plan with the Naval Base, which now has responsibility for making regular external and internal site inspections, attending to defects and finding an appropriate long-term use.

The audience was impressed by the care and attention demonstrated by all engaged in this restoration. While visitors in 1805 were awed by the innovatory technology, the surveyors and craftsmen of 2008 were tracing the work of former craftsmen to ensure that this building will stand for another 200 years. They have become part of the Block Mills' continuation.

Ann Coats

This report was compiled from notes taken at the meeting and shown to the speakers, with additional information from Dr Roderick O'Donnell FSA, Inspector of Ancient Monuments and Historic Buildings, Government Historic Estates, who together with Alan Johnson, English Heritage Architect, was responsible for overseeing the Block Mills restoration 2006-8.

Further reading:

Riley, R. (Ed.). (2006). *Transactions of the Naval Dockyards Society, Volume 1, Portsmouth Dockyard in the Age of Nelson*. Portsmouth: Naval Dockyards Society. ISBN 978-0-9553711-0-3