

# CASE STUDY

## W R Dunn & Co Ltd.

CHARTERED BUILDING SURVEYORS AND ARCHITECTS



### External Repairs to Wings and Links including Replacement of Central Section of Roof, Harewood House, Leeds

Project Value: £2.4m

Contractor: William Anelay Ltd

W R Dunn & Co Ltd. (Conservation Consultants)



#### W R DUNN & CO LTD. ROLE

W R Dunn & Co Ltd. act as Agent for Harewood House Trust Ltd, responsible for all building matters for Harewood House and Stable Block (Grade I Listed), plus the Gate Lodge and Pill Boxes (Grade II\*), and a number of other Grade II\* and II Listed buildings.

Following a structural survey in 1986 further investigations were sanctioned in 1988 identifying substantial timber decay to the semi-concealed roof trusses in the main roof void to the central section of the house.

Thereafter, a design team was set up with W R Dunn & Co Ltd. providing specialist conservation consultancy services, plus Architecture, Building Surveying, Quantity Surveying and Project Management, with sub-consultancy support as detailed above.

Following satisfactory completion of the re-roofing to the central section of Harewood House (Grade I Listed) in 1993 - 1994, W R Dunn & Co Ltd. were instructed to lead a team to repair the external fabric of the wings and links of the main house constructed between 1759 – 1771 by Robert Adam and John Carr.

Our role in the project as Conservation Consultants involved a complete re-design of the flat roof coverings, as a result of design errors made by Sir Charles Barry during the 1843 alterations.

Our role included identifying the source of ongoing roof leaks, following the trail of the defects identified and resolving the problem to ensure a 100-year design life on completion.



Furthermore, we were required to interpret the appropriate elements of The Society for the Protection of Ancient Buildings (SPAB) philosophy, English Heritage constraints and maintain tight financial control.

#### OUTLINE OF PROJECT SIZE AND COMPLEXITY

The work required a substantial access scaffold and temporary roof over the three and four storey wings and links. Once in place, re-roofing work commenced to remove defective 20 mm thick slate slabs, 1200 x 600 mm in size, installed by Sir Charles Barry. In lieu of same we specified new softwood decking, insulation, ventilation and 70 tonnes of continuously cast lead roof coverings.

As a result of rainwater penetration, severe timber decay was uncovered requiring repairs to 5 No. large truss beams.

Stone repairs were carried out to replace severely eroded and fractured millstone grit ashlar, and to make good damage caused by corroding iron cramps. Similarly, specialist cleaning was sanctioned to remove a damaging silicone waterproofing application from the surface of the stone. Approximately 40 tonnes of new stone was supplied by Hill House Edge Quarry to match the original West Yorkshire sandstone. Other works included the provision of improved maintenance access, a mansafe system, lightning conductor and trace heating installations, and remote moisture monitoring.