



City of Westminster

PLEASE NOTE

The Unitary Development Plan (UDP) policies and planning, building control and other legislation and regulations referred to in the text of this guide were current at the time of publication. Because this guidance is an electronic version of the printed guidance as approved and adopted, these references have NOT been changed. For ease of contact; names, telephone numbers and locations have been regarded as non-material editorial changes and have been updated.

As UDP policies and government legislation may have changed over time, before carrying out any work, it is recommended that you consult the current UDP

<http://www.westminster.gov.uk/planningandlicensing/udp/index.cfm> for policy revisions and you may wish to check with planning and/or building control officers about your proposals.

A Guide to Care and Maintenance - STUCCO



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1. Introduction

The City of Westminster contains an unrivalled number and variety of stuccoed buildings. These include the great urban developments of John Nash around Regent's Park and of Thomas Cubitt in Belgravia and Pimlico; also, many examples of the pioneering use of stucco by architects such as James Wyatt, James Adam and Decimus Burton, are found in Westminster.

Many of these buildings are listed as of special architectural or historic interest and many are included in designated Conservation Areas.

Westminster's Unitary Development Plan contains special policies for the protection of the City's architectural heritage. This Guide is one of a series produced by the Department of Planning and City Development, aiming to explain those policies and to give detailed technical advice for their implementation.

Furthermore, the Council's conservation officers will be pleased to discuss with you any specific points concerning repair and maintenance of stucco on individual buildings or, if necessary, to refer you to the specialist officers of English Heritage.

2. Planning Consents

The finest stucco buildings in the City are listed as being of special architectural or historic interest, and many others are included within designated Conservation Areas. Listed Building Consent is necessary before any works are commenced which materially affect either the external or internal character of a listed building, whilst many external alterations to unlisted buildings need Planning Permission. Nevertheless, even minor alterations on non-listed buildings, which may not require consent, can be detrimental, and poor repairs or garish repainting can easily destroy the unified character of areas within the City Council is keen to conserve.

3. History

For many centuries the term 'stucco' was used generally to cover any form of internal or external rendering which not only protected the wall but was finished in such a way as to decorate it and to enhance the architectural qualities of a building. In this country it was not until the end of the 18th century that 'stucco' specifically came to signify exterior rendering of masonry to imitate fine stonework.

Large areas of the City of Westminster were built during the 19th century when the use of stucco was common. Today its repair and restoration can pose problems,



particularly where the facades of buildings are enriched with elaborate moulded details. Originally stucco was used as a cheap substitute for stone and was either left unpainted or was colour-washed to resemble Bath stone. It is now rare to find unpainted examples, but many houses still retain the incised lines intended to simulate stone blocks.

Gradually stucco was recognised as a material with its own particular qualities in architecture, and it was painted to enhance its architectural effect. Whole areas of stucco buildings in Pimlico, Bayswater, Belgravia and Regent's Park were planned as monumental sequences of squares, terraces and crescents and the individuality of each house was subordinated to the overall design. In some areas such as Belgravia or Maida Vale, private estate control has maintained this architectural unity. In other areas where such control does not exist (such as Bayswater or Westbourne) piecemeal alterations and unsympathetic painting have eroded this unity and spoilt the character of individual buildings and terraces.

***Portland Place:
Example of fine
stuccowork on the
central pair of 1770's
terrace by
James Adam (top) and***



*detail of restored
half-frieze and gable
(bottom).*



Portman Square: Excellent example of 18th Century building by James Adam, with subtle use of stucco to produce elegant decoration and details.



Grove House, Regent's Park: Stuccoed classical mansion by Decimus Burton, 1824.



Waterloo Place: 'Athenaeum', by Decimus Burton, 1830, with classical stucco decoration of exceptional quality.



Belgravia: Robust stuccoed classical terraces by Thomas Cubitt/Thomas Cundy, laid out in the 1820s.



Westbourne, Chepstow Road: Mid 19th Century stucco properties, stucco Corinthian detail.



St. Martin's Lane: Late classical stucco work by

4. Types of Stucco

The constituent materials of historic stucco varied considerably. However, between 1775 and 1850 when stucco was most popular, there were four principle types, with many variations within each type:

- a. **Lime/sand stucco:** Lime and sand mixes have been used for many centuries for exterior rendering. One of the earliest examples in Westminster is at Inigo Jones's Queen's Chapel (1623-25) at St. James's Place. This type was the most readily available throughout the 18th and 19th centuries.
- b. **Oil based stucco:** This type includes many variations, patented and used in the 18th and the 19th centuries. One of the best known variations - Liardet's mix - was produced and used by the Adam brothers, for example in Portland Place, Westminster. The critical constituent of this mix, boiled linseed oil, was used instead of water to make the mixture workable.
- c. **Roman cement stucco:** This type dates from the late 18th century and was a mix of naturally hydraulic lime mixed with sand. In Westminster it was used, for example, by John Nash in the building of Park Crescent and in many other buildings in the Crown Estate. Its use became very popular throughout the first half of the 19th century. Some buildings in Westminster still retain Roman cement stuccos, which are characterised by their rich brown colour.
- d. **Portland cement stucco:** Portland cement is a hydraulic binder produced by firing a mix of clay and limestone. It was not widely available until the 1850's, when stucco was falling out of fashion; it was however used extensively by developers, for stucco cornices, window surroundings and other stucco decoration.

5. Repair

Stucco was always made as a combination of a 'base' material (varying from sand to powdered marble and pulverised glass) mixed with a bonding substance (from egg-white to lime or artificial cement) and oil or water. Often reinforcing materials were added such as hair, straw and wire-mesh. Each type of mix produced stucco particular texture, colour, strength, structural compatibility with other building materials, water resistance, etc. Many of these types of mix can be produced and used today to repair old stucco.

In modern times many artificial bonding materials and emulsifying additives have become available for use in rendering and stucco work. In repairing old stucco, these should be used with extreme caution and never without expert specifications and confirmation that they can be used in a way which is compatible with the old materials.

If you wish to repair stucco, it is very important to establish the type of the original mix. use of an incompatible type is likely to result in 'patches' which look different to the rest of the facade and may cause cracks and serious deterioration.

The Council's conservation officers or English Heritage experts will be pleased to advise you; their telephone numbers are given at the end of this Guide under Contacts.

The following two pages give information and explain repair procedures for two types of stucco (Lime/Cement Stucco and Oil Mastic Stucco) which are appropriate for many, but not all, buildings in Westminster. This information has been extracted from J. and N. Ashurst's book 'Practical Building Conservation (*)

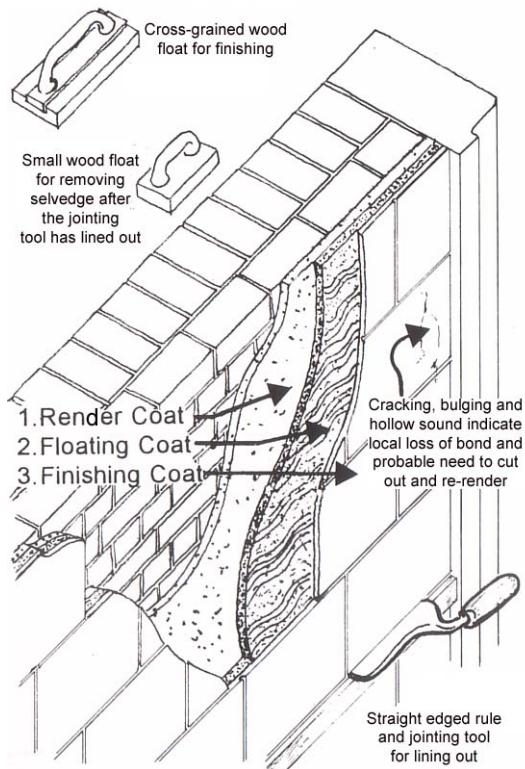
However, it is emphasised again that this information should not be used indiscriminately without a specialist's approval in respect of a specific stucco building.



Chepstow Road: Identical properties shown as 'Before' and 'After' complete restoration of stucco work.

(*) John and Nicola Ashurst: *Practical Building Conservation; Vol. 3, Mortars, Plasters and Renders.* English Heritage Technical Publications/Gower, Aldershot, 1998, pp 24, 25

LIME AND CEMENT STUCCO



Typical lime-stucco, Roman or Portland cement stucco will appear as above rendered on brickwork and lined out in imitation of stone ashlar.

1. The render coat may be ruled flat and comb-scratched.
2. The floating coat will be ruled level and comb-scratched.
3. The finishing coat may be finished with a cross-grained wood float and jointed.

MIX TYPES A, B, C are suitable for repairing Roman and Portland cement stucco.

Types B and C are useful for unpainted Roman cement, to allow the aggregate to provide colour without lime, which tends to lighten the appearance too much.

MIX TYPES D, E are suitable for lime stucco, especially where the background is only moderately strong. Type E should not be used in severe exposures, and even in less demanding environments is best limewashed.

(After J. & N. Ashurst, see reference above).

LIME AND CEMENT STUCCO- MIX TYPES AND PROPORTIONS

<i>MIX TYPE A (Cement/Lime/Sand) ('Compo')</i>			
	<i>Cement</i>	<i>Lime</i>	<i>Sand</i>
1. <i>Render Coat</i>	1	1	5
2. <i>Floating Coat</i>	1	1	6
3. <i>Finishing Coat</i>	1	2	9
1. <i>Render Coat</i>	1	2	9
2. <i>Floating Coat</i>	1	2	9
3. <i>Finishing Coat</i>	1	3	12

<i>MIX TYPE B (Cement/Sand/Plasticiser)</i>			
	<i>Cement</i>		<i>Sand</i>
1. <i>Render Coat</i>	1	<i>Plasticiser</i>	7 to 8
2. <i>Floating Coat</i>	1	<i>Plasticiser</i>	7 to 8
3. <i>Finishing Coat</i>	1	<i>Plasticiser</i>	8

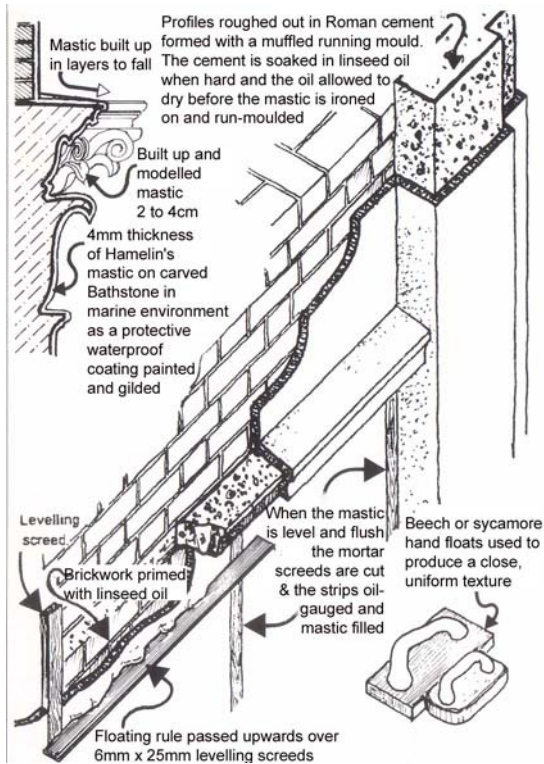
<i>MIX TYPE C (Masonry Cement/Sand)</i>			
	<i>M.Cement</i>		<i>Sand</i>
1. <i>Render Coat</i>	1	-	5½
2. <i>Floating Coat</i>	1	-	5½
3. <i>Finishing Coat</i>	1	-	6½

<i>MIX TYPE D (Hydraulic Cement/Sand)</i>			
		<i>Hydraulic Lime</i>	<i>Sand</i>
1. <i>Render Coat</i>	-	2	5
2. <i>Floating Coat</i>	-	2	5
3. <i>Finishing Coat</i>	-	1	3

<i>MIX TYPE E (White Lime/Sand)</i>			
		<i>White Lime</i>	<i>Sand</i>
1. <i>Render Coat</i>		2	5
2. <i>Floating Coat</i>		2	5
3. <i>Finishing Coat</i>		1	3

<i>THICKNESSES</i>		
1. <i>Render Coat</i>	2. <i>Floating Coat</i>	3. <i>Finishing Coat</i>
9mm	9mm	6mm

OIL MASTIC STUCCO



RECOMMENDED REPAIR

PROCEDURE: Cut out defective areas back to brickwork, slightly undercutting on all but the bottom edge. Wire brush the brick face and clean out the joints to provide a minimum 15mm key. Saturate the brick surface with boiled linseed oil, allowing it to soak into the joints. Leave to dry.

REPAIR MIX:

A basic proportion of one part litharge (a drying medium, a form of lead monoxide obtained as a heavy yellow and highly toxic powder) to ten parts of aggregate, gauged with linseed oil just before use to a smooth, uniform and stiff paste and ironed hard onto the wall. Small areas may be pressed on with a laying-on trowel. Large areas should be ruled in as shown above between 25mm wide levelling mortar screeds. The thickness of the mastic, which is applied in one coat only, is 6 to 8mm.

SUBSTITUTE MIX:

Cement: Lime: Sand compo as 1 : 1 : 6 or 1 : 2 : 9 has been used to repair mastic, but because the backing is water repellent, a mechanical key (hacking or EML) must be provided. Shrinkage around the repair must be mastic filled. Painting is essential.

(After J. & N. Ashurst, see reference above)

OIL MASTIC STUCCO- EXAMPLES OF TRADITIONAL OIL MASTIC SPECIFICATIONS

'LONDON MASTIC'	Proportion
Litharge	1
Limestone dust	6½
Silver sand	3½
Red lead (*)	1
(*) sometimes included 'for extra tenacity'	

'SCOTCH MASTIC'	Proportion
Litharge	1
Yellow or white sand	14
Whiting:	3

'HAMELIN'S MASTIC'	Proportion
Sand	6)
Powered pottery	6) Aggregates (*)
Limestone dust	8)
(*) Aggregates:	11

<i>Litharge:</i>	1
<i>Red lead, pulverised glass, grey lead oxide</i>	1/8

<i>Whilst any of the above mastics may be mixed without too much difficulty, a simple repair mix may be used as follows:</i>	<i>Proportion</i>
<i>Litharge:</i>	1
<i>Fine sand:</i>	5
<i>Whiting (pulverised chalk):</i>	5
 <i>NB. All constituents of all the mixes given must be thoroughly dried, if necessary by gentle heating, and thoroughly mixed. Aggregates should be as fine as possible. Gauging with oil to form the paste, immediately precedes application.</i>	

6. General Maintenance

Regular maintenance of the building is vital as stucco deteriorates rapidly once the surface is broken or if lack of repair enables water to damage the structure. As a general rule, repair works should be carried out to match the original works and where possible, missing details should be reinstated.



Example of badly deteriorating mid 19th C stucco in the Westbourne area (photo 1988)

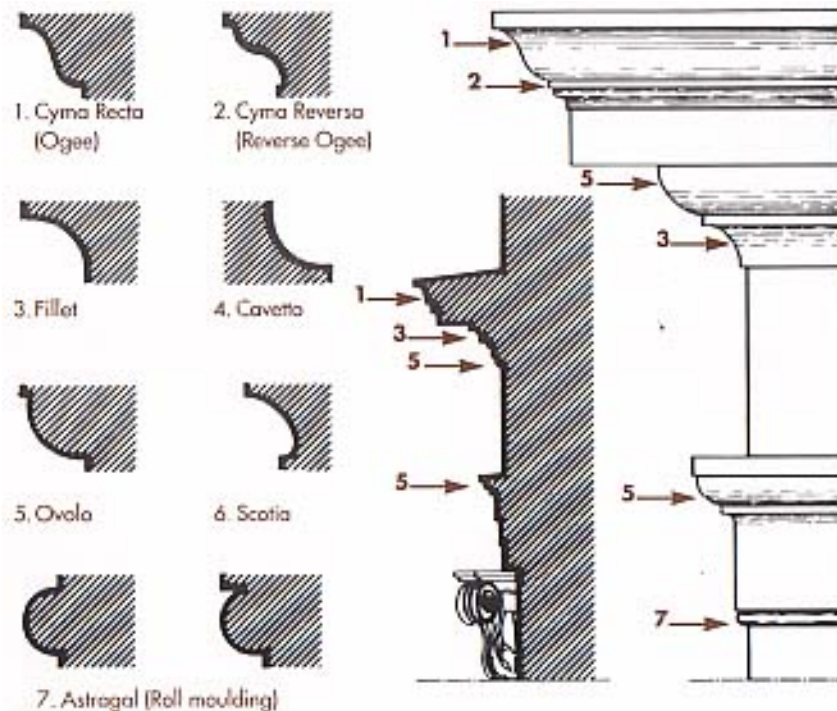


Middleton Buildings: Successfully detailed and finished reinstatement of band-rusticated stucco.

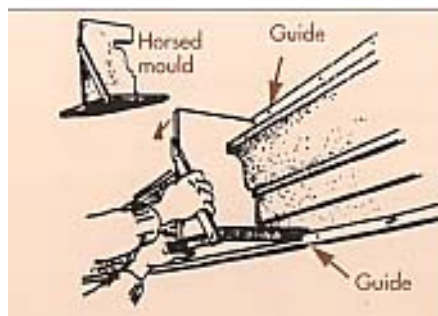
7. Stucco Mouldings and Other Details

Where moulded decoration has deteriorated, it should be repaired rather than removed. The reinstatement of missing stucco details such as balustrades and cornices is very important in building conservation and is becoming increasingly popular as it improves the appearance and value of a property. Occasionally, these details can be reproduced in modern materials but the use of traditional materials is favoured and may be required on listed buildings. In reproducing mouldings in original materials, it is very important to use the traditional method of 'running' mouldings in situ, using a 'horse mould'. i.e. a stencil with the profile of the moulding carefully cut out; this is mounted firmly in a frame which is run between guides fixed on either side of the cornice (see below).

This method is strongly recommended not only for reproducing whole missing cornices and architraves but also for the repair of small parts of these features. Unless the damaged part of the mould is very small (say 50mm long), even a very experienced plasterer would find it difficult to repair it satisfactorily by hand using a filing knife or similar general-purpose equipment.



Left: Elements of classical mouldings.
Right: Entablature cornice incorporating classical elements.
Centre: Section through roof-level cornice of mid 19th Century stuccoed property in Formosa Street, incorporating a number of classical moulding elements.



'Running' a cornice, using a 'horse-mould'.

Examples of rusticated stucco walls in Westminster:



Ashlar

Chamfer-banded

Vermiculated quoins on banded wall



Plain banded



Chamfer bands with vermiculated quoins



Plain banded with chamfered quoins



Block rustication

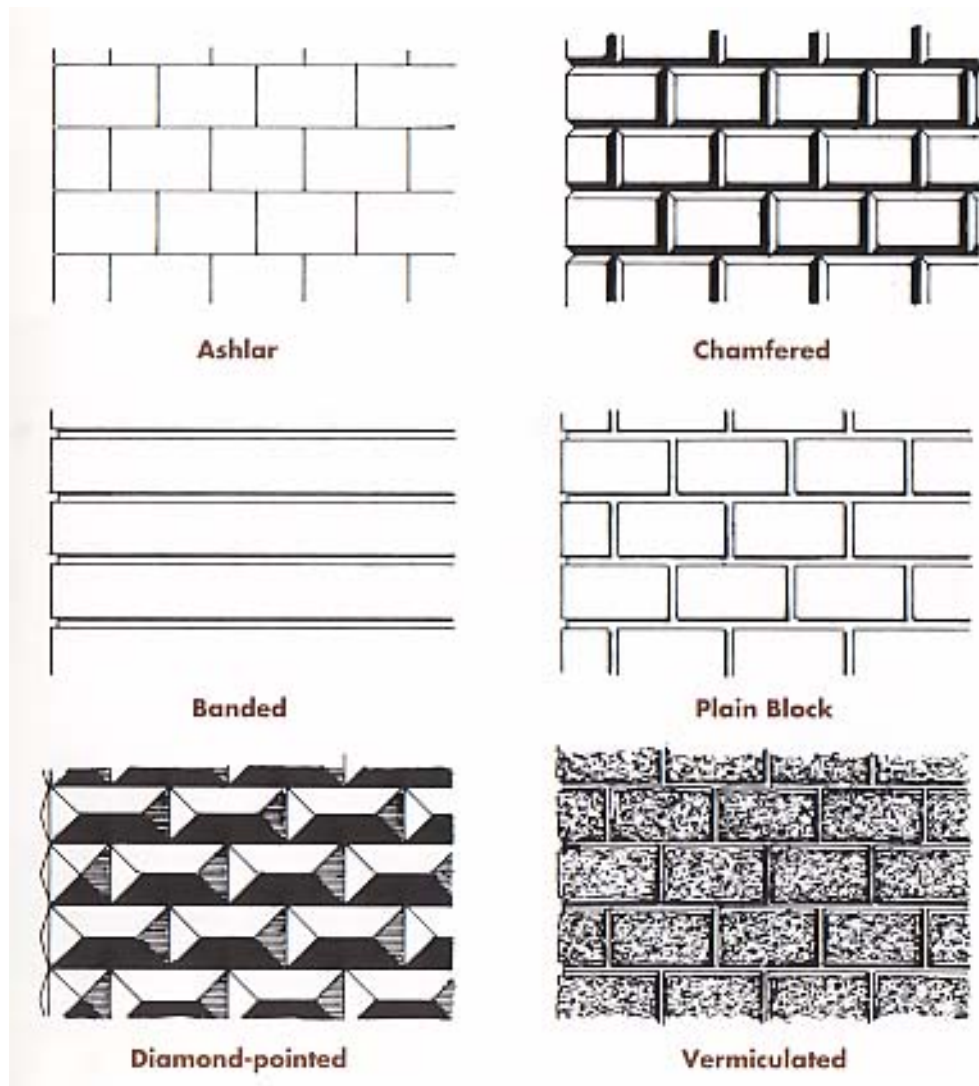


Combined plain and vermiculated blocks

8. Stucco Walls

The original purpose in the use of stucco was to resemble the appearance of distinguished traditional forms of stone masonry, often by imitating intricately cut and wrought stone blocks.

The following are examples of such type of stuccowork; their names are usually derived from corresponding forms of stone masonry. Repairs of each type requires application of different techniques, and the use of experienced plasterers and specialist advisers is highly recommended.



9. Painting of Stucco

Stucco buildings need regular repainting to preserve their appearance and weather resistance. Buildings that form part of a unified group should always be painted in the established colour. The generally recommended colours for external stucco (under British Standards No. BS 4800) are BS10B15, BSO8B17 and BSO8B15, the choice depending on the predominant shade of a particular group or terrace. Landowners of extensive estates in Westminster exercise satisfactorily control over stucco painting of their buildings. For example, stucco buildings owned by the Georgian Estate within Belgravia are consistently painted in 'Magnolia'.

Generally 'Brilliant White' should be avoided, except where this is the established colour for the terrace. The paint finish should be gloss or eggshell, never a textured paint, and excessively glossy finishes should be avoided. Moulded stucco details should not be highlighted in different colours, as this can upset the balance or continuity of the group. Fairface brickwork should never be painted and timber door and window frames should be painted to match the prevailing pattern, generally gloss white or on some buildings black. Any original stucco which has not been painted in the past, should, subject to its general condition, remain unpainted.

Heavily textured paints, whether applied by brush, roller or spray gun should not be used. These finishes completely alter the character of a building by obscuring fine detail and by changing the smooth surface. The textured finish rapidly accumulates dirt in the urban atmosphere, leading to an expensive cleaning operation if the building is not to appear drab. For these reasons, on listed buildings the City Council may take enforcement action to secure the removal of unauthorised heavily textured paint. If you are in doubt, please contact the City Council prior to starting work. Similarly, enforcement action may be taken if a listed building is painted in an appropriate colour.

Attention is drawn to health hazards involved in the removal or finishing (especially mechanical standing) of lead based paints, as well as to existing legal restrictions on the use of such paints.



Recently restored balustrade and classical details to porch of stucco property in Bayswater.



Inappropriate replacement of 'bottle' balusters with railings and crude simplification of stucco detail.

10. Boundary Walls and Balustrades

The setting of many stucco terraces and villas is completed by the front boundary. Houses with basement areas adjoining the pavement, generally retain their cast iron railings. These should be repaired, if damaged and painted black. Some terraces and villas have front boundary walls, or balustrades with 'bottle' shaped balustrades. These should be retained or reinstated to achieve a unified treatment to complement the character of stucco buildings, terraces and streets.



Examples of different types of balustrades on stucco buildings in Westminster.

11. Further Advice

These guidelines are based on the Council's policies for conservation of buildings. They supplement these policies, and the aims and reasons that precede them. The policies are set out in Chapter 9 of the City of Westminster Unitary Development Plan. Advice on planning requirements, and technical aspects of restoration of stucco can be obtained from one of the City Council's conservation officers in Development Planning Services (see Contacts).

The City Council has produced a series of Design and other Planning Guides, some of which may relate to stucco buildings. They can be obtained from the Council's One-Stop Services (see Contacts).

12. Contacts

For information on Planning Permission and on Listed Building or Conservation Area Consent:

CLICK HERE FOR LINK TO
WESTMINSTER CITY COUNCIL
CONTACTS LIST

For additional specialist advice on legislation and on architectural, historic and technical aspects;
English Heritage
London Region

23 Savile Row
London W1X 1AB
Tel: (020) 7973 3000

13. Further Reading

'Mortars, Plasters and Renders in Conservation', John Ashurst, EASA 1983.
'Practical Building Conservation', John and Nicola Ashurst, English Heritage/Gower, 1988.
'Render, Stucco and Plaster', Guide No. 5, The Georgian Group.
'Stucco', Frank Kelsall, in 'Good and Proper Materials', London Topographical Society, 1989.
'Georgian Town House and their Details', Dan Cruickshank and Peter Wyld, 1990.

Department of Planning and City Development, Development Planning Services, March 1994