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Method Statement
Basement Stairs: 22, 23 Mecklenburgh Square
Goodenough College
1st September 2017

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Method statement for temporary removal/ refurbishment and reinstatement of timber handrails, treads, risers and vertical balusters to Basement Staircases to houses 22, and 23:

Research:

- Carefully protect areas, and carry out load tests to each handrail as method statement prepared by Kiwa.
- Work to be protected including carpet, walls, and balustrade.
- Manage the tests with the Hotel, to ensure that the fire exits, and circulation routes are not affected/ alternatives offered. Manage the Guests expectations with suitable advice notes.
- Record/ identify findings on existing drawings for each balustrade length, where the handrail fails the load test.

Strategy to be adopted for basement timber staircases, both stairs located over existing storerooms:

- Loose/ uneven treads, risers, strings, balusters/ handrails to be identified to be repaired on site.
- Protect the area of work. Principal Contractors method statements and Risk Assessments to be prepared and agreed prior to work being carried out.
- Carefully remove modern plasterboard and skim soffits to stores, to expose the existing soffit of the staircase and reveal existing construction.
- Supply and fix timber seasoned bearers/ carriers using PVA or PU (wood glues), hangars and wood screw fixings to treads, landings and strings to reinforce locally.
- Carefully take away, any split/ damaged and broken tread/ risers/ kite winders and replace with seasoned timber, with PVA or PU wood glue, with timber screw fixings.
- Where risers and treads require making equal, either add seasoned timber/ plywood to the face/ tread, glue and wood screw down, or replace the tread/ rise as the above strategy to ensure regular consistent dimension to both tread/ rise.
- Add extra screw fixings, PVA/ PU wood glue to risers and treads to reinforce as required.
- Where the tread/ rise/ kite winders are loose/ unstable, supply and fix centre carriers/ string with seasoned timber support blocks/ wood screw fixings were required in conjunction with the above if replacement required of localised timber.
- All screw fixings to be countersunk.
- Carefully lightly rub down, (subject to Lead review) prime, undercoat and paint timber to match existing finish colour to be confirmed.
- The balusters should be glued using a PVA/ PU wood adhesive, wood screw fixings in conjunction with the adopted fixing techniques into the stair which can then be filled before redecorating.
- The pieces will be removed either by hand or by small hand power tools (it will depend on the accessibility/ease of removing the individual piece and which method with will give the best result - our experienced craftsmen will make that decision at the time of the work being carried out)

Repair to existing Timber Handrail and balustrade:

- Carefully remove existing localised paint from the balustrade, at the head, (where the balusters are fitted to the handrail), and Feet (where the balusters are fitted into the string/ stairs tread) and establish existing fixing techniques. **NOTE:** carry out test for Lead contained in the layers of paint.
- The pieces will be removed either by hand or by small hand power tools (it will depend on the accessibility/ease of removing the individual piece and which method will give the best end result - our experienced craftsmen will make that decision at the time of the work being carried out)
- It is anticipated that the balusters and Newel Posts will be fitted into an existing/ new formed rebate, and reinforced with PVA or PU (wood glues) and screw fixings.
- Reinforce the rebate fixing with new seasoned timber spaces/ wedges/ packs, and secret wood screw fixings into the handrail/ string/ tread.
- Should the baluster be required to be removed and replaced, this should be eased from handrail head/ rebated feet by hand/ small hand power tool, with the existing screw/ nail fixings carefully removed, and the balusters carefully loosened so not to enlarge the mortice within the tread/ string. Carefully clean out the mortice to receive existing/ new rebated baluster.
- Where new balusters are to be installed to replace existing gaps. Form new balusters to match existing, expose the original rebate and fix into with seasoned timber spaces/ wedges/ packs/ secret screw fixings and glue. All wood screw fixings to be countersunk.
- Carefully lightly rub down, (subject to Lead review) prime, undercoat and paint all timber work to match existing finish/ colour to be confirmed.
- The timber balusters should be glued using a PVA or PU (wood glues) adhesive in conjunction with the adopted wood screw fixing techniques into the stair which can then be filled before redecorating.
- Install new timber handrail to wall side, details as attached drawings.

Samples:

- New handrail/ bracket sample, to match existing to be set up on site for Conservation Officer review
- New stair nosing style/ sample to be agreed with Conservation Officer

Reuse of existing Historic fabric/ materials:

- Where possible, any existing historic fabric such as timber/ handrail/ newel posts/ balusters where removed, is to be re-used within the overall refurbishment strategy.

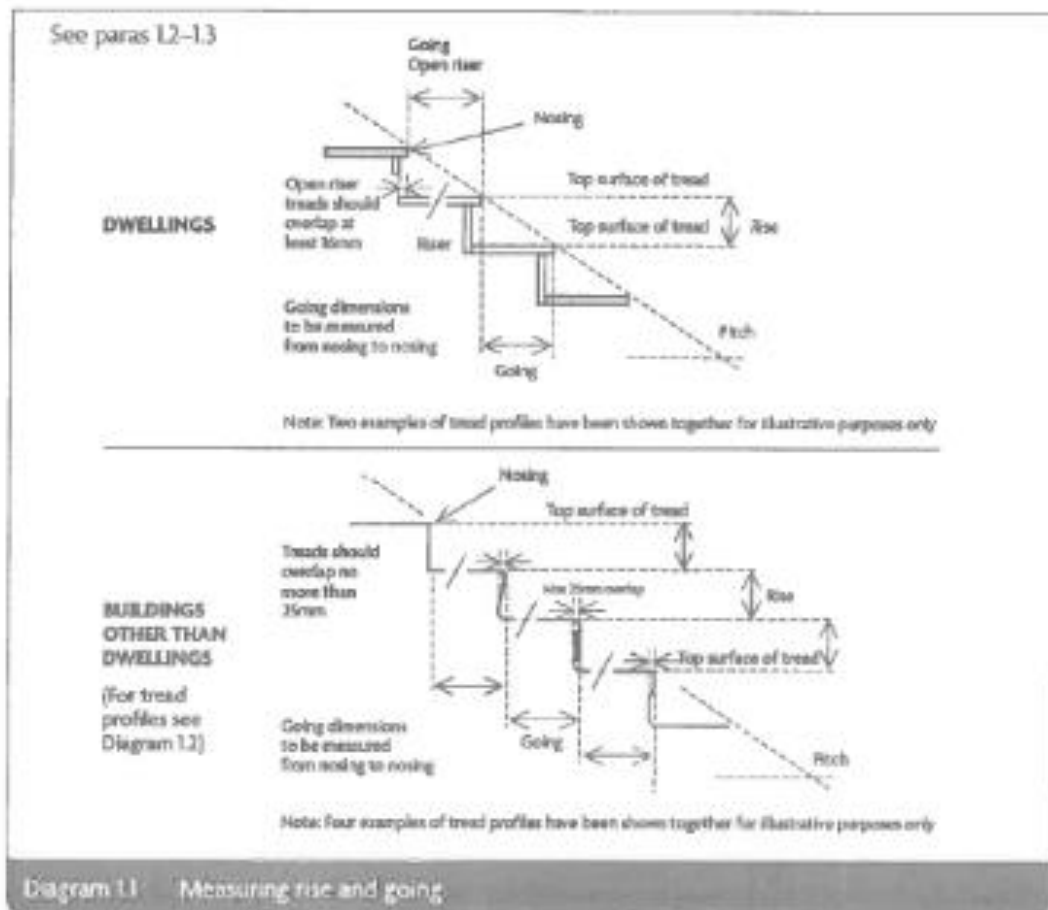
Section 1: Stairs and ladders

Scope

- 1.1** The guidance provided in this document covers internal and external steps and stairs when they are part of the building. Additional guidance is provided in Approved Document M when external stepped access also forms part of the principal entrances and alternative accessible entrances, and when they form part of the access route to the building from the boundary of the site and car parking. See Approved Document M Section 1 (for buildings other than dwellings) and Section 6 (for dwellings).

Steepness of stairs – rise and going

- 1.2** Measure the rise and going as shown in Diagram 1.1. (For steps with tapered treads, see also paragraphs 1.25–1.27.)



Requirement K1: Stairs, ladders and ramps

This approved document deals with the following requirement from Part K of Schedule 1 to the Building Regulations 2010.

Requirements	
<i>Requirement</i>	<i>Limits on application</i>
Stairs, ladders and ramps	
K1. Stairs, ladders and ramps shall be so designed, constructed and installed as to be safe for people moving between different levels in or about the building	Requirement K1 applies only to stairs, ladders and ramps which form part of the building

Performance

In the Secretary of State's view, you can meet requirement K1 by ensuring that the steepness, rise and going, handrails, headroom, length and width of any stairs, ladders and ramps between levels are appropriate to afford reasonable safety to people gaining access to and moving about buildings. The standard of provision needed to give an acceptable level of safety for access and use depends on the circumstances.

- The standard of provision may need to be higher in a public building than in a dwelling, because people may not be familiar with the building and there may be more users.
- A lower standard of provision may be acceptable where access is required only for maintenance, because greater care can be expected from the people requiring to gain access.

K1

Stairs and ladders

ONLINE VERSION

Handrails for stairs

For all buildings

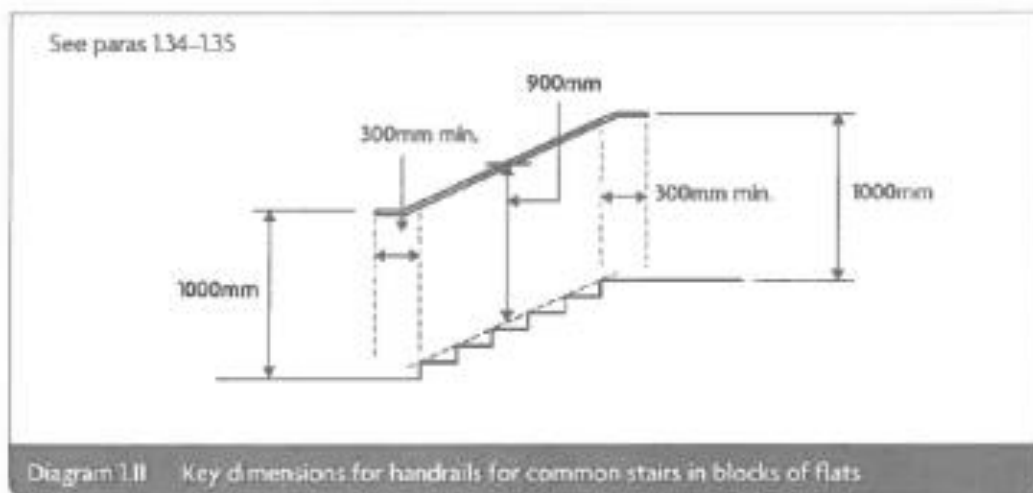
1.34 Provide handrails in accordance with all of the following.

- Position the top of the handrail 900mm to 1000mm from the pitch line or floor.
- The handrail may form the top of a guarding if you can match the heights.
- If the stairs are 1000mm or wider: provide a handrail on both sides.

For buildings other than dwellings and for common access areas in buildings that contain flats and do not have passenger lifts

1.35 Provide suitable continuous handrails, as dimensioned in Diagram 1.11 (for blocks of flats) and Diagram 1.12 (for buildings other than dwellings), in accordance with both of the following.

- On each side of the flights.
- On each side of the landings.



For buildings other than dwellings

1.36 Provide handrails in accordance with all of the following (in addition to paragraph 1.34).

- Where there is full-height structural guarding, if you provide a second (lower) handrail, the vertical height from the pitch line of the steps (or the surface of the ramp) to the top of the second (lower) handrail should be 600mm.
- Use a continuous handrail along the flights and landings of a ramped or stepped flight.
- Ensure that handrails do not project into an access route.
- Ensure that the handrail will contrast visually with the background against which it is seen, without being highly reflective.

Kiwa CMT



Inspection and Testing of Crush Barriers and Handrails

Several serious crowd - related accidents have occurred in sports grounds in recent years which has led to increased awareness of the need for instructive controls and guidelines to improve crowd safety.

It is the responsibility of Clubs and Stadia officials to ensure that the recommendations of the HMSO publication 'Guidance to Safety in Sports Grounds' (Green Guide) are Implemented.

Using techniques, equipment and experience gained and developed over the past 40 years, Kiwa CMT Structural Investigation Division provide a service from initial consultation and planning to inspection and testing of crush barriers and handrails, and will advise on any necessary maintenance and work.

Our service is tailored to particular needs of every client, and includes:

- ▣ Risk assessment and corresponding test schedules in line with current (Green Guide) recommendations.
- ▣ Efficient and unobtrusive site testing using specialised equipment.
- ▣ Inspection and assessment of other safety related installations.
- ▣ Comprehensive reporting including interpretation, recommendations and conclusions.
- ▣ Prompt assistance and advice on re-testing and additional works.
- ▣ Fully co-operative closed season working to minimise disruption to planned event.

Our additional structural investigation resources provide for the inspection and testing of other concrete and steel components, installations and structures, complementing and enhancing the barrier testing service.

For further information about Barrier Testing or to speak to a member of our Structures Department please contact:

T : 01332 383333

E : cmtenquiries@kiwa.co.uk

W : www.kiwa.co.uk/cmt

We are also CHAS accredited and Constructionline registered so you know you can depend on our credentials.



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Test Procedure - ST8

Barrier Testing

General

Structural barriers require periodic inspection and testing to establish their condition and to ascertain whether or not they are adequate to carry out their required function.

Test Description

This procedure lists the equipment and outlines the method for conducting a barrier test in either a sports stadium or a car park.

Standard

"The Guide to Safety at Sports Ground", 2008 - for barriers in sports stadia.

BS 6180 for barriers in and around buildings including car parks.

Equipment

- steel spreaders
- Enerpac RC53 cylinders
- in-line pressure gauge
- hydraulic hoses and oil
- hand operated pump
- calibrated dial gauges and associated stands
- G-clamps
- aluminium or similar adjustable props
- calculator
- tape measure
- camera
- calculation sheets

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Procedure

Uniformly distributed loads are applied along the test length of the barrier using the spreaders and cylinders mounted upon the adjustable props.

Deflection is measured using calibrated dial gauges positioned along the barrier at mid span between uprights i.e. where maximum movement is anticipated. (dials accurate to 0.01mm).

A bedding-in cycle and two proof cycles are applied in increments (usually 5) up to the specified load. When the maximum load is reached it is maintained for a period of 5 minutes before release.

At each increment the deflection is measured and when released the recovery recorded. The data can then be used to assess the barriers compliance.

Calculations

The following calculations are required in conjunction with the above procedure to perform the required testing.

1. Specified Load / m - Is given either in 'The Guide to Safety at Sports Grounds', 1997 (tables 1, 2 and 3 chapter 10) or will be specified by the engineer.
2. Load at X
$$= \frac{\text{Length of barrier under test} \times \text{specified load}}{\text{No of cylinders}}$$
3. Load at X (bar)
$$= \text{Load at X} \times 15.0 \text{ (correction factor for cylinder)}$$
4. Increments of test load - Load at X (bar) / No. of increments (usually 5)
5. Increments of bedding load - Repeat No's 1-4 with specified load for bedding from guide or specified by the engineer

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Results Calculations

6. Max deflection (bedding) - Reading at 5 or 5 mins (whichever is the greater) - First zero reading
7. Residual deflection (bedding) - 1st test off reading - Zero reading (bedding)
8. Max deflection (test) - Reading at 5 or 5 mins (whichever is the greater) - 1st test off reading
9. Recovery (test) - Reading at 5 or 5 mins (whichever is the greater) - Last test off reading
10. Permanent deflection - 1st test off reading - Last test off reading
11. % Recovery - $\frac{\text{Recovery (test)}}{\text{Max deflection (test)}} \times 100$

Reports

The results of the barrier tests will be given in tabulated form accompanied by an individual photograph of each barrier.

