

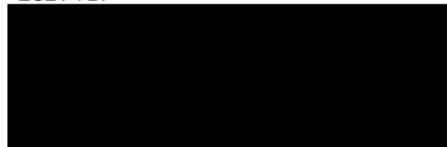


**BNP PARIBAS
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Your Ref:
Our Ref: JXF/DGC/stx/

11 July 2017

Dear Max,

CHESTER TERRACE FORECOURT BALUSTRADE WALL, REGENTS PARK, LONDON NW1 CONDITION REPORT

In accordance with your instructions via Paul Gardner, we carried out a review of the inspection undertaken in 2013 to establish the current condition of the balustrade along Chester Terrace, and update your budgets.

Our inspection involved physically checking the fixing of each bottle, and coping, and we have set these out on tables for each section of the balustrade.

Principal Findings & Observations:

We enclose our schedule of defects showing the condition along the balustrade wall of Chester terrace, but summarise the key findings below;

1. We believe it is already appreciated that the balustrade has suffered from a lack of provision for thermal movement. Lack of movement joints has caused expansion and contraction to open vertical joints in the coping and ratcheting the copings apart. We estimate over two thirds of the joints between copings are open, and around 27 movement joints would be required (approximately one every other di block) each needing the copings on both side and di block to be removed.
2. Suspected corroded dowels and fixings arising from the water penetration through the open joints. We have identified 216 loose or slightly loose bottles where the dowels between adjacent copings, and those connecting each bottle into the plinth below and coping above are loose. Of 721 bottles, this represents around 30% of the total.
3. 59-60 spalled and defective bottles require replacement. This compares with 55 bottles identified previously or about 8% increase, but we note that 44 of these were taken in the rebuilding of length 5, so the deterioration is greater.
4. In addition to length 5 which is currently shored by scaffold, we have identified further localised area of loose balustrade on lengths 7, 6, 4 and 3 which require rebuilding. The loose sections are a result where the dowels have deteriorated to reduce the restraint and

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rigidity the wall, leaving the sections relying on self weight for stability. Overall we consider that 27 copings demonstrate slight or significant lateral movement compared with 24 noted previously.

5. Cracking in the retaining wall was visible beneath ends of lengths 7 and 5. Such movement in the retaining wall beneath the balustrade has combined with the thermal movement to further distort the wall. Investigations are required to establish the cause of the ground movement before repairs are undertaken to the balustrade. This will involve heavy cutting back of ivy and vegetation to inspect the sections of retaining wall which were not accessible or visible. There also remains length 1 which has subsided albeit does not appear to have moved recently.
6. A review of the general condition of the bottle balustrades suggest they are in variable condition with minor cosmetic defects from casting, and hairline cracks which although do not warrant attention currently, are likely to allow moisture ingress and accelerated deterioration of the bottles in the short to medium term.

We have photographed each section of the balustrade and retained these on file should you require copies.

Conclusions & Recommendations;

In conclusion, we have identified ongoing deterioration in the balustrade since the 2013 inspection which raises concerns over the stability of the balustrade. Owing to the self weight of the sections there remains some inherent stability however the failure of the dowel connections between copings means the cohesive rigidity between sections enabling it to act as a single structure has been diminished.

We have identified three progressive options for the remedial works to the balustrade, with budgets provided by PAYE Stonework;

Option 1; Making Good: This option involves forming new movement joints in the balustrade on every other di block, rebuilding the unstable sections highlighted filling joints and refixing and replacing loose bottles. This will prevent further water penetration but not tackle the corroding dowels where the wall is not rebuilt.

Budget Estimate: £175,000 excl VAT, professional fees and contingency

Option 2; Rebuilding: Rebuilding will involve forming the movement joints as in Option 1, but include dismantling the complete balustrade, rebuilding the unstable sections and also replacing the dowels for new stainless steel to restore the integrity of the balustrade.

Budget Estimate: £233,000 excl VAT, professional fees and contingency

Option 3; Replacement: Noting Option 1 and 2 will leave a poor appearance, and not tackle the longer term deterioration of the bottles, Option 3 would involve replacing the balustrade in the same manner as Cumberland Terrace.

Budget Estimate: £483,000 excl VAT, professional fees and contingency

We comment below on the practical aspects of the works;

1. The making good and rebuilding options will result in a patchy appearance with new and old bottles shown adjacent each other.
2. All options will involve major disruption to the landscaped area.
3. All options will require careful consideration of sequencing of the works as road closures and scaffold cages will be required to handle the removal and replacing of deteriorated sections. Early discussions will therefore be needed with residents. Any sequencing which

affects the efficient completion of the works to accommodate tenants may lead to an increase in costs.

4. There remains a risk of damage being caused during the works as copings are lifted, and where sections will need temporary restraint.
5. You should make provision of a contingency when planning the remedial works, and undertake investigation works or pilots to derisk the operation as far as practical.

I trust our report meets your requirements but should you have any queries, please let me know.

Yours sincerely

David Chisnell – Associate Director
Building Consultancy

cc P Gardner Esq

