

Our Ref: SR/gc

18th August 2016

Mr. Neil Smith,
The Committee of Management of Hanover Crescent Enclosure,
20, Hanover Crescent,
Brighton,
East Sussex
BN2 9SB

Dear Mr. Smith,

Condition Report on Brick and Flint Wall at Hanover Crescent, Brighton adjacent to Footway with Lewes Road

Thank you for your instructions in respect of the above. My report follows:-

Client's Brief

I was asked to inspect the wall adjacent to the Lewes Road footway and to comment on its condition. I have been asked to consider the need of future maintenance.

Date of Inspection

My inspections were made on Wednesday, 17th and Thursday, 18th August, 2016.

Description of Wall

A part brick, part flint wall. The original wall is believed to have been constructed at the time that the crescent was built in the early 19th Century.

The wall is within the Valley Gardens Conservation Area and along with the houses in the crescent, is Grade II Listed. The original wall is of yellow brick and the panels in the wall are of tarred cobbles in a lime mortar matrix. There is a cement/sand coping on the head of the wall.

At either end, there are two pairs of brick gate piers with cobble panels. There are also two short sections of wall adjacent to the north and south lodges.

The wall is generally of about 1800mm in height. The top part of the wall is approximately 225mm in width. It is assumed that this is the width for the full height of the wall although I cannot be certain of this, owing to the high ground levels at the back of the wall.

The wall has brick piers of a brick and a half width at about 3.3metre to 3.4 metre intervals. There are courses of brickwork at the base of the wall, two courses of brickwork at mid height in the wall and two courses, plus a rendered capping at the head of the wall. The upper flint panels are about 460mm high and the lower panels

are about 760mm high. One and a half brick length quoins have been built on the piers. The depth of the footing of the wall is not known but it is probably relatively shallow.

On the Hanover Crescent side of the wall, the ground is banked against the face of the wall and there is approximately 900mm of wall which extends above ground level.

Orientation

For ease of reference and for the purpose of this report, the Lewes Road elevation of the wall has been deemed to face due west. All other references to orientation should be construed accordingly.

The bays in the wall have been numbered from the northern end.

Circumstances of Inspection

The weather was dry and mostly sunny at the time of inspection.

Some of the Hanover Crescent side of the wall could not be seen owing to plants and shrubs growing in front of the wall.

Extent of Inspection

A visual inspection of the wall was made. A spirit level and tape was used to measure the lean of the wall in various locations.

Limitations

This report is provided for your sole use and no liability to any third party is accepted.

Description and Condition of Wall

Section of Wall and Pier adjacent to North Lodge

This is a section of brick and flint wall at the front of North Lodge of approximately 1600mm height. The wall has a brick on edge coping at the junction with the footway in Lewes Road. The wall is distorted out of shape a certain amount and has been the subject of previous repairs.

Some re-pointing to the open mortar joints is needed on the west face of the wall and approximately 0.25m² of the wall needing re-pointing. The base of the wall immediately adjacent to the pavement is somewhat eroded and the wall material needs making good with a lime mortar mix at this point. Part of the wall at this point is hidden by a telecommunications box.

There is a return wall back to the front elevation of No.1 Hanover Place which is finished with rendering on the north side and is of brickwork on the south side. This section of wall needs some localised pointing on the brick piers on the wall on the south side. There are also a couple of areas of capping on the head of this wall which need re-pointing.

There is a large Prunus tree growing in the garden at the front of North Lodge which is quite close to the wall. The ground level on the garden side of the wall is

approximately 600mm above the external pavement. The growth of the tree does not appear to have put the wall under significant pressure at the moment, but could do so in future and the size of the tree and its effect on the wall will need to be monitored over time.

Pier to North Side of Vehicular Entrance

This is a brick and flint pier measuring approximately 750mm by 600mm. The pier is about 2 metres high. There is a large rendered capping on the head of the pier. The bricks are a light coloured stock brick. The bricks, particularly on the south side of the pier, are somewhat eroded and weathered and approximately half a dozen badly weathered bricks ought to be replaced in the next few years.

There is an old iron gate hook in the head of the pier just underneath the capping. This is corroding and is lifting the top course of brickwork and the capping on the south side of the pier. This iron hook should be removed from the masonry and the brickwork on the south side will need to be bedded back in place. If left, further cracking will occur in the capping.

The pier is out of upright with a lean that has developed towards the south. This has left a gap of about 25mm at the head of the pier on the northern section of the wall between the pier and the wall. This has previously been made good with mortar but the gap has re-opened by approximately 7mm. The degree of movement is relatively slow and the pier should be satisfactory for the foreseeable future.

Piers to the Centre of Northern Vehicular Access

There are two piers either side of the access road which have at some point been rebuilt. These piers are generally in a serviceable condition. The mortar pointing to the northern pier is somewhat eroded, especially on the south side and this eroded pointing needs to be renewed. The area affected is about 1m².

The northern pier has a rendered capping on it which may have been salvaged off of the original pier. The southern pier has a more modern concrete capping.

Pier to South Side of North Entrance

This is an old pier and forms the northern end of the main run of wall. The pier measures approximately 780mm across its western face and is 660mm on its northern face. The pier is about 2.1m high.

There is a substantial Elm tree which is growing directly against the back of this pier. Although the tree has been pollarded, the trunk is still of considerable size. Some slight curling to the leaves on the trunk of this tree was noted at the time of inspection and the health of the tree should be monitored.

The pier has rotated towards the west as a result of pressure at the base of the pier from the root growth of the tree. The pier leans by approximately 50mm.

The brickwork on the pier is somewhat eroded. There are a number of missing mortar joints on the pier. Although the bricks are quite heavily eroded, there is probably little structural benefit in replacing bricks at this point in time as any repairs would be largely cosmetic. In coming years some individual bricks will need to be replaced.

The capping on the head of the pier is formed of render and tiles. The capping is breaking up on its head and the rendering is loose. Some of the rendering has fallen off of the edge of the moulding to the underside of the pier. The pier needs attention from a rendering specialist and the damaged rendering needs to be made good.

Bay 1

The wall at this point is about 1760mm high. There are seven or eight flint cobbles missing from the wall. New cobbles need to be pieced in place.

The wall leans out slightly towards the northern end. This is probably the result of movement of the end pier caused by the growth of the Elm tree. Towards the southern end the wall is reasonably upright. The overall thickness of the wall is about 235-250mm as measured across the head of the rendered capping on the wall. The upper part of the wall appears to be of a one brick thickness.

Bay 2

This section of wall is reasonably upright in spite of the growth of a large Sycamore tree in the ground approximately 1m away from the southern pier of this bay. The Sycamore tree is growing rapidly and has potential in the future to affect the wall. This tree should be managed and reduced in size.

There about five to six flint cobbles missing from the lower section of the wall. Some of the lime mortar around the flint cobbles was a little eroded.

Above the southern pier, there is one frost damaged brick, the face of which needs repair.

Bay 3

This bay is reasonably well upright. The length of the bay is about 3.3m. The flint work to the wall is intact and is in a satisfactory condition.

Bay 4

The mortar pointing between the bricks at the base of the wall is a little eroded. Some minor re-pointing is needed otherwise the pointing to the flint cobbles is in an adequate condition.

Bay 5

This panel is reasonably upright. The lower flint panel on this wall has suffered a fair amount of erosion and approximately a dozen flint cobbles are missing. A number of the other flint cobbles are quite loose and area approximately 1m² on this flint panel should be repaired.

The horizontal brick course between the two piers has lifted and it would seem likely that there is some embedded root growth in the wall at this point. The centre brick courses need to be taken out and any root growth removed and the wall reinstated at this point. Approximately 2 linear metres of the centre brick course is affected.

Bay 6

There is some missing flint work to the upper part of this bay and an area approximately 0.5m² needs to be reinstated. There are one or two missing flint cobbles on the lower panel. The centre brick course has lifted slightly and on this panel, the upper part of the wall above the centre brickwork is leaning back towards the Hanover Crescent by approximately 50mm.

The middle brick course needs to be re-built and the upper panel of flints will probably need to be replaced in conjunction with this work.

Bay 7

There are several missing flint cobbles on the lower panel. About six cobbles need to be placed back in position. Some brickwork repairs have previously been carried out to the centre and upper part of this panel.

The panel leans towards Hanover Crescent, particularly on the upper half of the wall.

Bay 8

The upper part of the wall on this bay leans back towards Hanover Crescent. The centre and base brickwork is quite eroded. Although mostly serviceable, there is a fair amount of moss growth on the base of the upper panel of this wall.

The brickwork to the head of the upper panel is coming loose and approximately 1.5m of the capping needs to be taken off and re-bedded on the head of the wall.

Bay 9

The upper part of this bay has a slight lean towards Hanover Crescent. The upper courses of brickwork and the capping are in poor condition towards the northern half of this bay and approximately 1 linear metre of the capping needs to be re-bedded and re-constructed.

Bay 10

The capping on this section of bay has been partly over rendered in the past. The newer layer of render has not been properly keyed to the base coat and has come away. The top layer of render needs to be renewed on this section over a length of approximately 3 linear metres.

The flint cobbles are generally in a reasonable condition. There is some erosion to the brickwork but although the brickwork is quite heavily weathered, it does not appear to have been affected structurally. One missing cobble was noted to the upper panel.

Bay 11

The upper part of the brickwork and part of the pier to the south of this panel has been re-built. This section of wall is reasonably upright and the flint cobbles are all in place.

Bay 12

This section of wall is reasonably upright. The brickwork and the pier to the head of the wall has been replaced at some point in the recent past. The capping has been over rendered. The thin render coat used on the capping is coming loose and the head of the wall here will need to be re-rendered.

Bay 13 (adjacent to Road Sign)

This bay has been partly re-built on the upper part. The flint work and brickwork on the wall is mostly in a reasonable condition. The older flint work and brickwork on the lower part of the wall is somewhat eroded, although this does not need re-pointing at the present time.

Bay 14

The wall at this point is reasonably upright. The upper part of the wall has been re-constructed at some point in the recent past. The skim coat of render on the capping of the wall has come off, mainly on the head of the wall and will need to be replaced in due course.

Bay 15

The wall here is also upright. The upper half of the wall has been re-constructed. The sand and cement render capping on the head of the wall has come loose.

Bay 16

The wall is reasonably upright at this point. The upper part of the wall has been re-constructed in the relatively recent past.

Bay 17

This bay is reasonably upright. There is some spalling of the surface rendering on the head of the wall at this point. The lower section of wall leans out towards the footway slightly at this point. This is largely due to the pressure of the ground levels and quite substantial shrubs growing at the back of this wall. Consideration should be given to removing this shrub and planting a smaller shrub behind the wall at this point.

Bay 18

The wall is reasonably upright although the northern section of the base part of the wall has moved towards the pavement slightly over time. The movement appears to be fairly long standing origin and there was little sign of recent movement to this.

Bay 19

As with the previous few bays, the upper part of the wall on this bay has been re-built. The lower part of the wall leans out slightly towards the pavement. The movement on the wall appears to be of long standing origin. There is some slight lifting of the mortar joints on the pier at the south end of this bay.

Bay 20

The upper part of this bay has some newer brickwork which has been replaced. The brick cobbles are generally in a fair condition. The pier to the southern side of this bay bulges somewhat in the centre. The does not appear to have been much recent movement to this area.

The brickwork on the south pier is old and has not been replaced in recent times.

Bay 21

This bay and the following two bays are the bays on the wall which show the most lean towards Lewes Road. Given that the footway is heavily used adjacent to this wall, this section of wall should be considered the main priority in terms of repair.

The lower part of the wall leans towards the pavement, particularly towards the southern pier. Some re-pointing is needed to the brickwork at the base of the southern pier.

There is a single cobble missing on the lower panel. The brickwork in the centre of the wall is somewhat eroded at this point and would benefit from re-building.

The upper flint cobble panel is in reasonable order but the brickwork over the head of the top cobble panel is in rather poor order and heavily eroded. Some of the brickwork and the capping is loose and this upper section of the wall should be re-built.

Bay 22

This bay is in a similar condition to bay 21. There are a couple of missing cobbles to the wall and some fairly heavily eroded pointing to the cobbles at the bottom of the wall.

The brickwork at the head of the wall is loose and the mortar pointing is in poor condition. The upper part of this wall would benefit from being re-constructed.

Bay 23

The southern part of this wall appears to have been partly re-constructed at some point in the recent past. The northern part of the bay is older. The wall has bulged a certain amount, particularly at the centre line of the wall, although the movement appears to be of relatively long standing origin. It is considered that there would be some benefit of renewing the northern part of this wall and tying it in with the repaired section of wall to the south and the previously repaired section of the wall to the north of Bay 21.

An Elm tree sapling is growing behind the wall at this point and also some shrubs. The vegetation ought to be cut back to ensure that there is no undue pressure on this section of wall.

Bay 24

The upper part of the wall to this bay has been re-built. There are a couple of missing cobbles on this section of the wall. The wall here is reasonably upright.

Bay 25

The condition of bay 25 is similar to bay 24. There are a few isolated cobbles which need replacing in the lower section of the wall.

The upper part of the wall has been re-built at some point.

Bay 26

Some re-pointing is needed to the lower part of the brick piers either end of this bay. A few cobbles need placing back in position on the lower panel. The upper panel of the wall has been re-built in relatively modern times.

Bay 27

The condition of this is similar to bay 26. Some re-pointing of brickwork at the base of the bay is needed and a number of cobbles need placing back in place on the lower section of the wall.

The upper section of the wall has been re-built in relatively modern times. The centre brickwork course on the wall is rather heavily eroded and would benefit from being re-built in due course, although this is not urgent.

Bay 28

This is similar to bay 26 although the repairs to the upper part of the wall stop at this point.

The cobbles in this section all appear to be all in place.

Bay 29

The wall leans quite sharply towards the Hanover Crescent gardens at this point. The lower part of the wall retaining ground also appears to lean backwards.

The brickwork on the head of the wall has lifted a little and the top few courses of brickwork should ideally be re-built and bedded in place. Some render repairs are needed to the capping on this area.

Bay 30

There are approximately fifteen cobbles missing from the lower panel and three or four cobbles missing from the upper panel. These need to be bedded back in place.

The capping and the brickwork at the head of the wall has lifted slightly and this will eventually need to be re-built.

Bay 31

There are two or three cobbles missing from the lower panel of the wall and also some missing pointing on the upper panel, otherwise the brickwork on this section of wall appears to be in reasonable order.

The wall leans back towards the Hanover Crescent side.

Bay 32

There are a couple of cobbles missing from the bottom panel of the flint wall. The brickwork is mostly in reasonable order, although there is some minor re-pointing needed to the base of the panel.

Part of the rendered capping to the head of the wall is missing on the southern pier.

Bay 33

Several cobbles are missing from the panel at the bottom of the wall in this location. The upper part of the wall leans towards Hanover Crescent.

Bay 34

The wall still has a lean towards the Hanover Crescent side. There are a couple of cobbles missing from the panel at the bottom of the wall.

Bay 35

The upper part of the wall has a fairly pronounced lean towards the Hanover Crescent side. Some localised re-pointing is needed to the brickwork. The cobbles on these panels appears to be in place.

Bay 36

The panels appear to be mostly in a serviceable condition. There are a couple of cobbles missing to the lower panel. The upper part of the wall leans back towards Hanover Crescent.

Bay 37

The upper part of the wall leans quite markedly towards Hanover Crescent. The flint cobbles are in place and the brickwork, although somewhat eroded at the base, does not show signs of recent movement.

Bay 38

A cobble is missing from the lower panel and some of the pointing to the cobbles on the upper panel is rather heavily eroded and would benefit from being re-pointed.

The brickwork on the head of the upper panel is leaning back noticeably towards the Hanover Crescent side and there is a fracture in the brickwork at the southern pier.

The brickwork on the head of this panel needs to be re-built and tied in with the newer brickwork on the panel towards the south.

Bay 39

The brickwork to the upper part of this panel has been re-built at some point. There is a rendered capping on the head of the wall. The wall leans back quite noticeably towards the Hanover Crescent side.

There is some missing pointing on the pier to the south section of this wall. There is also a line of cobbles missing in the upper panel. The cobbles need to be replaced and the open joints in the brickwork on the pier need to be re-pointed.

Bay 40

There is some localised pointing needed to the centre section of the bay section of brickwork on this panel. The upper courses of the wall have been replaced. The cobbles are all mainly in place.

Bay 41

The wall is a little more upright here. There are a few cobbles missing to the lower panel which need to be re-bedded back in position.

The pier to the south section of wall is quite heavily eroded. A little re-pointing is needed to this. The upper part of the pier has been re-built.

Bay 42

The wall is reasonably upright at this point. The course of bricks below the flint panel on this wall is quite heavily eroded and would benefit from new bricks being pieced in at this point.

There are about six cobbles missing from the lower panel.

Bay 43

The course of bricks below the lower flint panel has eroded quite heavily and 2 linear metres of brickwork would benefit from new bricks. The upper part of this bay and the previous bay have been re-built.

The height of the wall here is 1880mm.

Pier at Southern End of the Wall

This pier measures approximately 760mm on its west face and approximately 640mm on its south face. The pier has tended to move over time with a lean of about 50mm towards the south.

There is some eroded mortar pointing on the pier, mainly on the base of the south side which would benefit from re-pointing.

The brickwork on the pier is generally quite heavily eroded but not to an extent that it greatly affects the structure or stability of the pier. There are some bricks on the centre part of the wall where the bricks are eroding quite rapidly and there would be some benefit from replacing these bricks in the next few years. Approximately 30 bricks or so should be replaced and the pointing on the pier should be made good.

The capping appears to be mostly in a serviceable condition.

Piers either side of South Vehicular Access

The pier appears to be of relatively modern date. There are one or two chipped corners to the capping on the piers and the mortar pointing on the head of the flint panel to the southern pier is rather eroded and needs some minor making good.

Section of Wall to Front of South Lodge

There is a section of flint wall with a brick and flint pier at the northern end. There is an embedded steel fixing in the head of the pier which is corroding and has caused some cracking to the head of the pier. This fixing needs to be removed.

The corrosion has caused some cracking to the top three courses of the pier.

Some re-pointing is needed to the brickwork to the base of the pier and the pier is reasonably upright. The capping on the head of the pier appears mostly in serviceable condition but cannot be fully viewed owing to the shrubbery growing in the adjacent garden.

A section of flint wall to the south of the pier is mostly in serviceable condition and reasonably upright. There is a single course of brick on the head of the wall. This course of brick is loose and would benefit from being re-bedded. The wall is about 1950mm high.

The shrubbery in the adjacent garden yard is quite tight against the head of the wall here although it does not appear to be pushing the wall over.

Some joints have opened up slightly on the pier at the extreme southern end of the wall. This is adjacent to the entrance of the building in Richmond Terrace.

There is a need for a localised repair to approximately half a dozen bricks at the corner of the wall here and some re-pointing to the mortar joints.

There is a section of wall which runs back to front of the building in Richmond Terrace which is alongside the yard of South Lodge and it is assumed that it belongs to that property or to the end of Richmond Terrace.

The wall is of part brick part flint construction and is about 1.5m high. The wall is mainly in serviceable condition although some minor pointing is needed to the brickwork.

Hanover Crescent Side of Wall

The ground levels on the Hanover Crescent side of the wall are considerably higher than on the Lewes Road side.

At the northern end of the wall, the ground level is approximately 900mm below the head of the wall. Adjacent to the second and third bays from the northern end, there is a very large Sycamore tree which has a large trunk and is growing vigorously. The tree does not yet appear to have caused damage to the wall but clearly has the

potential to do this. Consideration should be given to reducing the size of this tree or restraining its growth.

The condition of the brickwork and the panels on the Hanover Crescent side of the wall at the northern end is fair and no missing flints were noted.

There is a very slight crack in the end panel of the wall adjacent to the Sycamore tree. The wall does not appear to have moved significantly and the crack in this position may not be caused by the tree. However, the tree has the potential to cause damage to the wall in the future and its growth should be controlled.

Adjacent to the Sycamore tree, there was an old stump of an Elm tree which was beginning to regrow. This is very close to the face of the wall and could affect the stability of the wall.

Adjacent to the northern set of compost bins, the brickwork and the flint work is in a reasonable condition, although the wall is leaning towards the Hanover Crescent side. There is some localised cracking in the capping on the head of the wall adjacent to the main compost bin area. Some sections of the flint work on this wall appear to have been re-pointed in relatively modern times.

The flint work on the reverse side of the wall is formed with broken flint faces and in some places, pieces of brick have been installed in the flint matrix.

Adjacent to bay 13, the wall is mostly in a serviceable condition, although the skim coat of render applied on the capping of the wall has tended to spall off and this will need to be renewed at some point. The replacement of the upper top layer of the skim coat of the render on the capping of the wall is not an urgent matter but loose sections should be removed.

The lower panels in the wall at this point are just visible. The ground surface is about 900mm below the top of the wall.

Adjacent to bay 16, there is a fine vertical crack in the wall and the coping. This is probably due to expansion and contraction and is not indicating a serious degree of movement.

On the Hanover Crescent side of the wall bays 1-20 are in fairly good condition and the brickwork on the back of the wall flint work has been renewed or re-pointed in relatively modern times.

The section of wall which is leaning towards the pavement of Lewes Road between bays 21 and 23 is an old section of wall. This wall does not appear to have previously had work done on it. The brick piers in the wall are not well bonded together and the mortar between the flints on the back of these panels is in poor condition.

There is the stump of a relatively young Elm tree adjacent to the back of the wall near bay 23. This has a root which grows almost directly against the face of the wall. The bowl of the tree has approximately 150mm diameter at present. This tree has been cut back in the past but is shooting again. This tree ought to be completely removed out of the border as it is too close to the wall.

There is a large Elm tree approximately 1.8m from the back of the wall near bay 20. It is possible that roots from this could be affecting bays 21 to 23 of wall, although the tree is located close to bay 20 and not adjacent to the main area where the wall is leaning.

Between bay 23 and bay 28, much of the wall on the Hanover Crescent side has been re-built. Brickwork and flint work alike are of relatively modern date and the capping is in a reasonable condition.

There is an older section of wall from the bay 28 to bay 38. Some localised re-pointing of the flint work is needed here and there. The matrix to the flints is a little uneven and there are places where the bricks on the capping are coming loose. A section of the capping and the top brickwork on this wall would benefit from being taken down and re-bedded in place.

Adjacent to the southern compost heap, the wall leans inward a fair amount, by about 50mm or so over a height of 900mm. The flint work is mostly in an adequate condition but would benefit from some re-pointing.

There is the stump of an Elderberry tree which is immediately adjacent to the wall and this would benefit from being completely removed, although the Elderberry is mostly dead and is only growing a small amount.

Immediately adjacent to bay 40 on the Hanover side of the wall, there is an additional brick pier which has been built against the wall. Adjacent to this brick pier, there is a relatively young Elm tree which is growing approximately 600mm from the wall. This tree has the potential to impact the wall. There is also a Yew tree not far from this which is not of sufficient size to have a significant impact on the wall at present but could in the very long term grow to this.

There are two mature Elm trees near the southern end of the wall, one is about 1.2m from the wall and the one nearest the extreme southern end is about 500mm from the face of the wall. Over time, these could have an impact on the wall although this section of wall is currently in reasonable condition.

Discussion regarding Structural Stability of the Wall

The wall retains approximately 900mm of earth to the east side of the wall.

The wall would not comply with current design codes, either as a free standing wall without the ground behind or, as a retaining wall. Nonetheless, the wall has remained in place, with various repairs and amendments for nearly 200 years.

It is therefore not really possible to assess the stability of the wall by current codes, as these would determine that the wall is not adequate for the loads likely to be imposed upon it.

The main structural threats to the wall are either collapse of the wall owing to pressure of the ground behind the wall, or damage to the wall due to wind pressure.

The wall is considered to be at relatively limited danger from wind damage. The reason for this is that much of the wall leans back against the earth bank and the upper part of the wall, which is free standing, is generally only about 900mm high.

The presence of adjacent trees and shrubs and also the trees on the opposite side of Lewes Road on The Level mean that the wall is relatively sheltered.

The other potential threat to the wall is the pressure of the ground on the east side of the wall. The upper part of the wall is mostly upright or leans towards the east. There are three panels in the centre of the wall (21, 22 and 23) where pressure of the ground has caused a fairly substantial lean towards the pavement and here it is deemed that there is a risk that the wall could come down within the foreseeable future.

There are other areas where the lower part of the wall leans towards the pavement and the wall has a 'bulged' profile. In spite of the profile of the wall these areas show no evidence of recent movement or cracking suggesting any imminent failure.

The wall could be vulnerable to tree roots growing behind the wall. I have noted this in a separate section of the report and have listed the trees which might pose a risk of disturbance to the wall.

The wall is listed and could not be changed from its current design without good reason and justification of this to the conservation department.

As far as could be ascertained from the inspection, there is no imminent risk to passers-by from the condition of the wall except in the case of bays 21 to 23. Works should be carried out to these bays within the next year to re-build the upper part of the wall to provide some additional strength to this section of wall.

There is also a risk on bays 29-38 that a section of the wall could fall towards the east. This would be onto the shrubbery border in Hanover Crescent, where there would be less risk to members of the public. The wall does not appear to be imminently likely to collapse in this way, but this section of wall does lean a fair amount and could be more vulnerable to wind pressure than some other sections of the wall. In the absence of recent movement to this section of wall, it is thought that keeping this section of wall in repair is an adequate response at the present, however, it may be necessary to install some brick piers on the Hanover Crescent side in the future to provide some additional protection to this section of wall.

You have asked me whether the deterioration of the flint stone panels affects the structural integrity of the wall. The wall should be considered as a structural whole and the flint stone panels are relevant to the overall integrity of the wall. They should therefore be kept maintained.

You have also asked me as to whether the crumbling brickwork in the wall could be stabilised. In my view, there is not a good means of preventing the erosion of the brickwork in the wall. Any surface treatments to the bricks would tend to reduce the ability of the brickwork to breathe. This loss of porosity could in fact cause more severe damage to the face of the bricks than if the bricks are left as they are. Over time, it will be necessary to replace/piece in some sections of the worst affected brickwork. In the main, the deterioration of the brickwork is a relatively slow process.

You have asked me to consider whether the movement in the wall could be monitored. There are not really any obvious cracks in the wall that could be monitored by the use of tell-tales. Monitoring the profile of the wall over time would be of some use but this would have to be done with laser measurement and would

be quite a complicated and expensive process in order to ensure the accuracy of the readings.

I would suggest that the most practical method of monitoring the wall would be to carry out a visual inspection on a two yearly cycle. Perhaps initially a further inspection could be carried out within a year to check that no rapid movement is occurring but after that a two or three yearly cycle would probably suffice.

Summary of Works Needed

Bays 1-4

Minor repairs to missing cobbles on the Lewes Road side.

Bays 5-7

Repairs to patches of cobbles missing on Lewes Road side.

Bays 7 and 8

Repairs to brick capping.

Bays 10 to 20

Minor repairs to cobbles and brickwork.

Remove loose skim coat to render capping on head of wall and re-skim coping with a new coat of render.

Bays 21, 22 and 23

Re-construct the upper half of the walls and the whole pier between 21 and 22. This item is the most urgent area of work.

Remove Elm tree growing adjacent to pier between 22 and 23.

Panels 24 and 28

Undertake some minor re-pointing works to defective mortar joints but the panels and capping have been re-built in relatively modern times.

Panels 29-38

Re-build the top three courses of the wall and the rendered coping and re-point the flint panels on the Hanover Crescent side.

Carry out minor pointing works on the Lewes Road side.

Panels 39-43

Some minor re-pointing is needed to one or two joints on the Lewes Road side. The wall is fairly well out of upright. The worst leaning section has a pier which has been built against it adjacent to the Yew tree. There may be some benefit from adding a further couple of piers to the wall on the Hanover Crescent side.

Schedule of Trees next to the Wall and Suggested Action

The following trees were considered to have the potential to affect the wall. Most of them are probably not affecting the wall at present, but I have suggested various actions to try to prevent future damage. The impact of the trees on the wall will need to be re-assessed on each cyclical inspection.

The wall could be damaged if a tree is blown down or loses a large bough. I have not considered the trees in respect of this risk. The trees should be regularly inspected by a qualified arboriculturist to assess their condition and the risk of damage or injury which they pose.

The trees will be protected owing to the fact that they are in a conservation area and prior to any work being undertaken, the local authority must be consulted to ensure that they are in agreement with the extent of work proposed.

The following trees were noted:-

Bay 43, large mature Elm tree within about 600mm of wall: No action.

Bay 41, mature Elm tree within about 1.2m of wall: Keep tree pruned.

Bay 40, Yew tree within about 1m of wall: No action at present.

Bay 39, Elm tree close to wall approximately 300m, relatively young specimen: Remove if possible.

Bay 36 very large Wych Elm tree about 3m back from wall: No action.

Bay 35, partly dead Elderberry: Remove.

Bay 28, very young Sycamore growing quite close to the wall: Remove.

Bay 24, large Sycamore, approximately 2.5m back from wall: Keep tree pruned.

Bay 22/23, Elm tree previously cut down but growing very close to wall: Remove.

Bay 20/21, Elm tree about 1.3m back from face of wall: Keep tree pruned.

Bay 18, large shrub with branches growing against the head of the wall but does not appear to be pushing wall: Prune shrubs.

Bay 16, similar shrub with branches against the wall but does not appear to be significantly pushing wall: Prune shrubs.

Bay 17, relatively young and quite large Elm tree about 1.5m back from wall: Keep tree pruned.

Bay 11, Elm tree about 2m back from wall: No action.

Bay 10, Acacia tree approximately 2m back from wall: No action.

Bay 6, very large Sycamore, about 3m back from wall: No action.

Bay 2/3, very large Sycamore growing about 1m back from wall. Appears to be growing quite vigorously, could affect wall.

Northern pier, Elm tree directly against the pier: Keep tree pollarded. Seems in poor health: Monitor health.

Concluding Remarks

I trust this report is sufficient for your present purposes. If you have any queries on the content of the report or require further assistance in terms of obtaining prices for remedial works to the wall, please do not hesitate to contact me.

Yours sincerely

Stuart Radley MA (Cantab) MRICS
Chartered Building Surveyor