SKANSKA COSTAIN STRABAG Working on behalf of HS2

1MC03 Main Works - Contract Lot S1

HERITAGE AGREEMENT METHOD STATEMENT HAMS - MONITORING AND CONSERVATION MANAGEMENT OF GROUND MOVEMENT DUE TO BELOW GROUND CONSTRUCTION AT 24 PARK VILLAGE EAST - ADP-ESCT-02

Document no: 1MC03-SCJ-EV-MST-SS01_SL03-000016

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C01	Ken Whittaker	Tim Liversage	Stefano De Pastena	23/10/2024	First issue for review/ acceptance (C01.1)
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1 Introduction

1.1 Project Context - Schedule 18: Listed Buildings

1.1.1 High Speed Two (HS2) is a network of new high speed lines across Britain: Phase One will connect London with Birmingham and the West Midlands. Powers to construct and operate the railway have been secured through the High Speed Rail (London – West Midlands) Act 2017 (the Act), which received Royal Assent on 23 February 2017.

1.1.2 The Secretary of State appointed High Speed Two (HS2) Ltd as the nominated undertaker responsible for delivering Phase One of HS2. HS2 Ltd is an executive non-departmental public body, sponsored by the Department for Transport.

1.1.3 Skanska Costain Strabag Joint Venture (SCSjv) is the Main Works Contractor constructing thirteen miles of twin-bore tunnels on the HS2 route to its southern terminus at Euston.

1.1.4 Schedule 18 'Listed Buildings' to the Act concerns how legislation in respect of listed buildings under the Planning (Listed Buildings and Conservation Areas) Act 1990 ("the 1990 Act") applies to the Phase One works. Paragraph 1 of Schedule 18 disapplies aspects of this legislation from the Phase One works. There is no requirement for listed building consent for the purpose of:

- demolition, alteration or extension in respect of the listed buildings set out in

Schedule 18 Table 1, or which are listed on or after 30 September 2013

- heritage or monitoring works in respect of the listed buildings set out in Schedule 18 Table 2, or which are listed on or after 30 September 2013.

1.1.5 Following Royal Assent, HS2 Ltd entered into Heritage Agreements with London Borough of Camden and with Historic England (dated 20th February 2017) concerning the Schedule 18 listed buildings within the London Borough of Camden.

1.1.6 Clause 2.1 of the Heritage Agreement permits HS2 to undertake works to Schedule 18 listed buildings, subject to a Heritage Agreement Method Statement (HAMS). This details the proposed works and is submitted to the local authority for their approval, in consultation with Historic England where required.

1.2 Purpose

1.2.1 This HAMS:

- addresses the requirement of Clause 2.1 of the Heritage Agreement to prepare a method statement describing heritage and monitoring work designed to protect heritage significance and avoid or minimise harm to the historic fabric and setting that contribute to the significance of 24 Park Village East.
- It outlines an asset protection management strategy, design rationale and technical method statement for installing monitoring devices, for undertaking generic remedial repairs to historic fabric and arranging urgent temporary works if building damage predictions are exceeded and present additional risk to building structure/serviceability
- is the subject of a Schedule 18 application requesting approval for the monitoring and conservation management of ground movements due to below ground construction at 24 Park Village East. This Schedule 18 application is prepared according to procedures set out in HS2 Phase One Heritage Consents Strategy (HS2-HS2-EV-STR-000-000008).

1.2.2 The HAMS informs:

- stakeholders, including the consenting authority - it explains how SCSjv will:

- avoid or minimise harm to heritage significance during tunnel construction by careful installation of building movement monitoring at 24 Park Village East
- use monitoring information to manage timely responses to building movement and undertake conservation repair works at 24 Park Village East in co-ordination with tunnel construction.

- Asset Protection Teams - describes heritage conservation measures to be incorporated in sub-contractors' Risk Assessment and Method Statements

(RAMS) when undertaking works for heritage and monitoring purposes at 22 Park Village East.

1.2.3 This HAMS contains the following information:

- an up-to-date location plan (figure 1)
- statement describing the heritage significance of the listed building (section 4 Building Information)
- a description of the relevant HS2 below ground construction works and predicted building damage (section 5. Ground Movement and Building Damage Assessment)
- a specification for the proposed monitoring instrumentation and a method statement for installation, maintenance, removal and conservation repairs (sections 7 Monitoring)
- drawings at a suitable scale showing the specified instrumentation locations (Appendix A and B).

1.2.4 This HAMS also describes a mitigation design rationale (section 6 Mitigation) and conservation management plan (section 8 Conservation Management) for remedial repair to avoid or minimise the potential risk of harm or loss of heritage significance at the listed building.

1.3 Scope

1.3.1 22-24 Park Village East is a semi-detached 3 -storey (with lower ground floor) masonry building on the west side of the Network Rail (NR) cutting approach to Euston Station (figure 1 (based on 1:560 OS)).

1.3.2 24 Park Village East (figures 2, 3, 4 & 5), a grade II* listed building (list entry 1322056) is included in Schedule 18 (Table 2: Buildings authorised to be altered or extended for heritage or monitoring purposes), as is the attached residential property at 22 Park Village East.

Figure 1 - Site location showing property boundary to 24 Park Village East (not to scale)

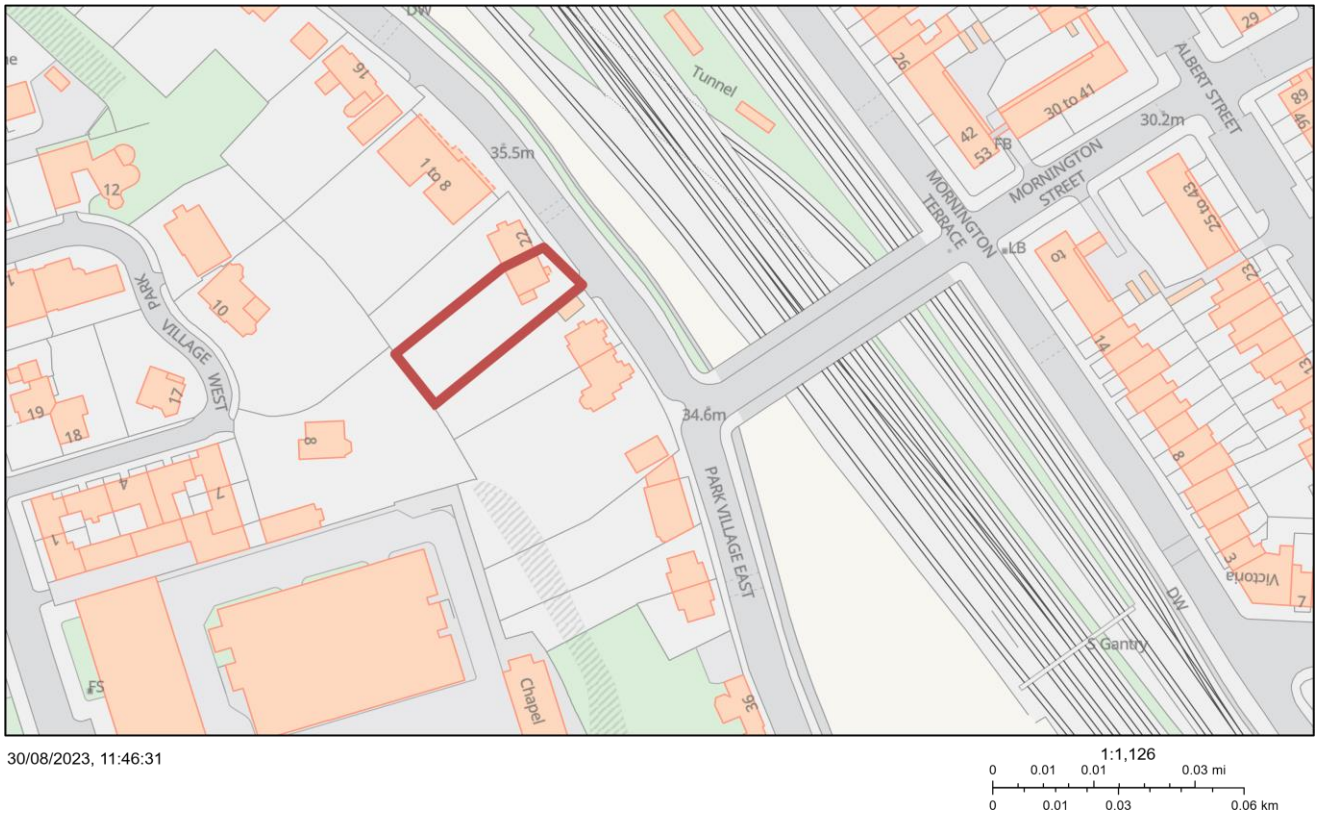


Figure 2 22 -24 Park Village East street (east) façade

Figure 3 – 24 Park Village East Street (east) elevation and garden setting

Figure 4 - 24 Park Village East side (south) elevation

Figure 5 24 Park Village East Garden (west) elevation

1.3.3 This method statement relates solely to 24 Park Village East. A separate HAMS details a corresponding proposal for 22 Park Village East (Document ref: 1MC03-SCJ-EV-MST-

SS01_SL03-000015). Both HAMS define procedures to identify ground movements and consequent building structural responses so that appropriate protective measures can be deployed and engaged to prevent harm to heritage significance.

1.3.4 Specifically, monitoring instruments will provide data to inform remedial measures that are further outlined in this method statement as dynamic components of a conservation management plan designed as a response to HS2 tunnel construction.

1.3.5 A further separate HAMS (Document ref: 1MC03-SCJ-EV-MST-SS01_SL03-000019) details Targeted Structural Interventions (underpinning) to be undertaken at 22 Park Village East to reconcile inconsistencies in foundation systems that exist at 22 and 24 Park Village East.

1.4 Engagement

London Borough of Camden and Historic England

1.4.1 HS2 Phase One Heritage Consents Strategy (Document no.: HS2-HS2-EV-STR-000-000008) require pre-submission discussion with the relevant local authority and Historic England (where applicable) on works affecting Schedule 18 listed buildings. The purpose of this discussion is to agree action to protect the significance of Schedule 18 Listed Buildings.

1.4.2 Pre-submission consultation with London Borough of Camden and Historic England on proposals for temporary installation of monitoring devices by fixing to the listed building occurred during a regular monthly meeting held on 1 February 2023.

1.4.3 In response the London Borough of Camden Senior Planner (Conservation) advised SCS Railways that a HAMS for 24 Park Village East monitoring and conservation management should be submitted for Schedule 18 consent.

1.4.4 The Camden conservation team have further advised on the proposals detailed in this HAMS. The monitoring and conservation management design set out in the HAMS benefits from the technical advice provided.

The Crown Estate

1.4.5 HS2 asset protection monitoring and remedial repair works to 24 Park Village East detailed in this method statement are incorporated in a Global Agreement covering arrangements at The Crown Estate Park Village East freehold properties.

1.5 Assumptions & Limitations

1.5.1 This method statement has been produced using information generated by SCSjv/Design House, SCSjv sub-consultants and sub-contractors and from online resources available at the time of writing.

1.5.2 The SCS Asset Protection, Engagement and Monitoring Teams visited the site to undertake internal measured survey, external inspection and a CCTV drainage survey. Further sources of information include historical building plans & sections obtained from the London Borough of

Camden and Network Rail. Information and images presented in this method statement include the result of these site observations, surveys and archive searches.

1.5.3 Relevant technical guidance that informs this HAMS includes:

- HS2-HS2-CV-STD-000-000004 P03 Technical Standard - Civil Engineering Instrumentation and Monitoring ·
- HS2-HS2-TN-STD-000-000005 P05 Technical Standard - Ground movement and assessment from underground construction
- HS2 Specification for Civil Engineering Works' Series 4500 – Instrumentation and Monitoring' (HS2-HS2-CV-SPE-000-014500)
- HS2-H S2-EN-STD-000-000009Technical Standard – Sound, Noise and Vibration Instrumentation and Monitoring · High Speed Rail London-West Midlands)
- HS2 Environmental Minimum Requirements Annex 1: Code of Construction Practice Para 13.2.18 to 13.2.31 https://www.gov.uk/government/publications/environmental-minimum-requirements
- SCSjv Phase 3 Ground Movement Assessment Report - Building Assessment Euston Cavern and Shaft - Euston Throat West S1 (1MC03-SCJ_SDH-GT-REP-SS01_SL03-000018 C03.2) - with baseline data simulating the phased construction of the excavation and tunnelling works obtained from the 'North' and 'Central' ETW LS-DYNA models
- SCSjv Phase 3 Ground Movement Assessment Report - 22-24 Park Village East - Euston Throat West S1 (1MC03-SCJ_SDH-GT-REP-SS01_SL03-000063)
- SCSjv Contractors Monitoring Plan - 22-24 Park Village East - Asset Protection Euston - APD-ESCT-02 (1MC03-SCJ-GL-PLN-SS01_SL03-000003)
- SCSjv Phase 1 Geotechnical Desk Study (1MC03-SCJ_SDH-GT-NOT-SS01_SL03-000014)
- SCSjv Technical Note - Phase 2 Geotechnical Desk Study – Park Village East Wall (1MC03-SCJ_SDH-GT-NOT-SS01_SL03-000015)
- Purcell (2014) The Crown Estate Guidelines and Standard Specification to Architects for the Regent's Park, Kensington Palace Gardens, St. James's, Pall Mall South, Haymarket and Lower Regent Street Residential and Commercial Estates, Seventh Edition

2 Definitions and abbreviations

Table 1 – List of abbreviations and definitions used in this document

Abbreviation	Definition
APES	Additional Provision Environmental Statement
DC	(Building) Damage Category
DH	Design House
EMR	Environmental Minimum Requirements
ES	Environmental Statement
GIS	Geographical Information Systems
GMA	Ground Movement Assessment
HAMS	Heritage Agreed Method Statement
HS2	High Speed 2 Ltd
I&M	Instrumentation and Monitoring
OS	Ordnance Survey
PDF	Portable Document Format
NR	Network Rail
RAMS	Risk Assessment Method Statement
'rus in urbe'	an illusion of countryside within the built environment
SCjv	Skanska Costain Joint Venture
SCL	Sprayed Concrete Lining
SCSjv	Skanska Costain Strabag Joint Venture
SES	Supplementary Environmental Statement
TBM	Tunnel Boring Machine

3 Responsibilities

3.1 Management and design

3.1.1 HS2 is responsible for meeting the commitments described in HS2 Information Paper C3: Ground Settlement. Following the processes set out in Information Paper C3, SCSjv has considered how harm to third party property assets can be avoided or minimised in advance of tunnel construction and is planning for appropriate preparations and remedial works during or following construction.

3.1.2 Asset Protection activities within each SCS contract area are the responsibility of the SCSjv Area Technical Lead, supported by the Asset Protection core team, including the SCSjv Heritage Technical Lead.

3.1.3 Technical design specialists provide additional support:

- Byrne Looby (2021), Surveys for Design Assessment [Heritage] 24 Park Village East, London, NW1 7PZ, Document Reference 1MC03-SCJ_OTB-PM-REP-S000-000290
- Hewson (2022) Desktop Structural Appraisal - 24 Park Village East Asset Protection Area East - Euston Throat West Buildings Package 2 - Apd-Esct-02 Document Reference 1MC03-SCJ_HWS-ST-REP-SS01_SL03-000004
- Hewson (2023) Asset Specific Mitigation Designer's Monitoring Plan, 22-24 Park Village East, Asset Protection Area East-Euston Throat West Buildings Package 2 ADP-ESCT-02, 1MC03-SCJ_HWS-ST-PLN-SS01_SL03-000001
- Watts (2021), WP166 Pre-construction Condition Surveys, 24 Park Village East, London, NW1 7PZ, SCSMW_03264, Document Reference 1MC03-SCJ_WGL-PM-REP-S000-000368

4 Building Information

4.1 Asset Identification

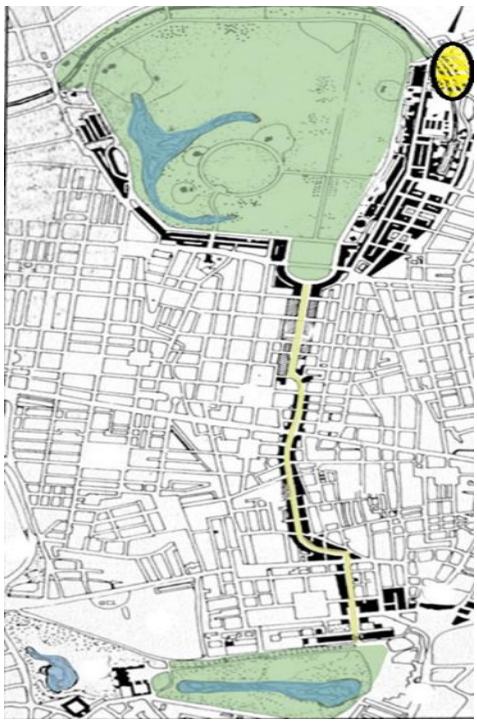
4.1.1 24 Park Village East is part of one of the detached and semi-detached residential villas laid out between 1824 and 1832 to John Nash's Regent's Park village suburb design. 24 Park Village East is a three-storey semi-detached residence attached to 22 Park Village East. Both are among the 12 residential properties that are jointly grade II* listed.

4.1.2 Originally the street also included villas on the east side. These directly overlooked fields that shortly later became a corridor for the London to Birmingham Railway. These villas were subsequently removed to accommodate expansion of the rail cutting at the beginning of the 20th century. As a result, 24 Park Village East, like the other surviving Nash villas, faces the parapet wall of the expanded railway cutting rather than the intended semi-rural setting.

4.2 Extent & Context

Nash's Regent's Park masterplan envisioned a place of leisure for London's social, political and aristocratic elite. It provided ornamental parkland for the exclusive use of residents of villas and grand terraces bordering the Park to the east, south and west (figure 6). The parkland comprised a huge circle and central lake. Intended to contain a Royal summer palace, it was linked by a processional boulevard (Broad Walk/Portland Place/Regent's Street) to the Prince Regent's London residence at Carlton House.

Figure 6- Plan based on Regent's Park masterplan (Park Village East highlighted)



4.2.1 The palatial neo-classical Gloucester Terrace, Cumberland Terrace and Chester Terrace occupy the eastern edge. The neighbouring Park Villages (East and West), located to the northeast, are designed as suburbs of Italianate and Tudor-Gothic villas.

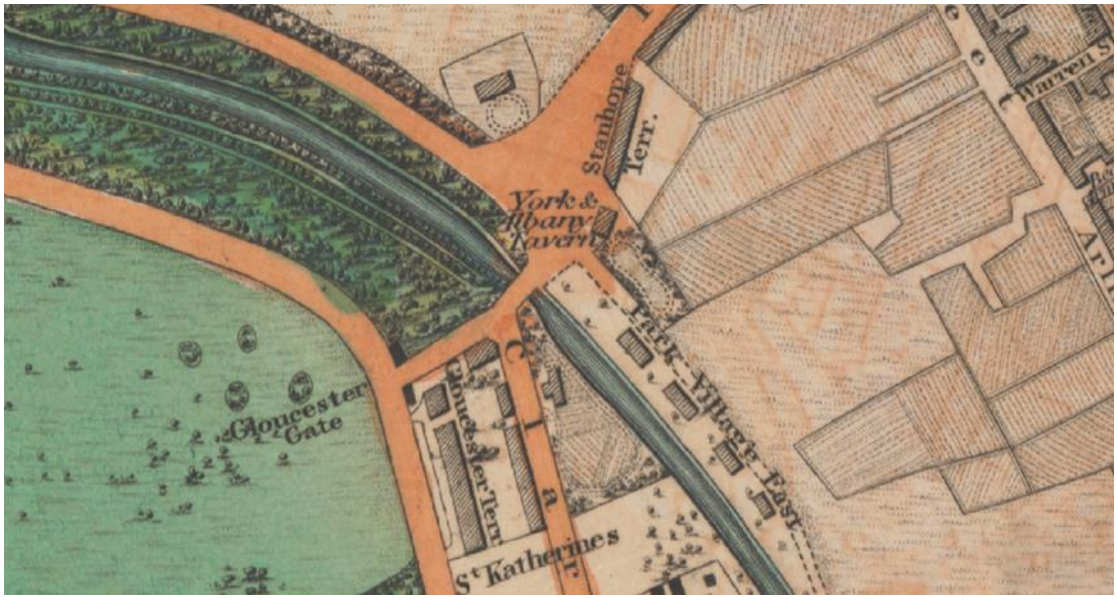
4.2.2 Both Park Village villa suburbs were developed as Nash's own personal speculative private venture, with cottages built progressively to match demand. He infilled two small building leases of otherwise limited commercial interest, to create London's first architect designed villa suburb. On his death the suburbs were completed by his protégé and successor James Pennethorne.

4.2.3 At Park Village East, semi-detached cottages designed to look like mansions and detached villas, each in spacious gardens, originally lined both sides of a serpentine street. 22 and 24

Park Village East are on the surviving even numbered side. The architecture of each principal façade was intended to respond to the contrasting character of a dual aspect provided by:

- the Collateral Cut, a branch of the Regent's Canal which terminated to the south at Cumberland Basin and Cumberland Market. Nash referred to this as a 'wooded valley', providing a treelined waterfront setting to the west and dividing Park Village East from is sister suburb at Park Village West;
- streetscape and the former greenfield land beyond, overlooking the Southampton Estate which separated Park Village East villas from the nascent Camden Town and provided a semi-rural aspect to the east (figure 7).

Figure 7 Greenwood Map of London 1828 (detail showing York & Albany Tavern, Stanhope Terrace and 6-16 Park Village East)



4.2.4 The 1838 opening of the London to Birmingham Railway dramatically changed the Park Village East setting (figure 8). The railway emerged from a tunnel into a cutting that followed the rear garden boundary to the villas on the east side of Park Village East. Railway construction coincided with start of development of residential streets on the Southampton Estate immediately to the east.

4.2.5 Housing development continued concurrent with railway construction until the Southampton Estate fields were completely infilled. At Mornington Terrace semi-detached villas bordered the east side of the cutting applied a similar design code to that used by Nash, in effect mirroring Park Village East (figure 8). Together with Albert Street, Arlington Road and Delancey Street a new pattern of contiguous residential streets linked Regents Park and Camden High Street via numerous railway crossings.

4.2.6 Expansion of the London & North Western Railway (LNWR) railway cutting occurred between 1900 and 1905. Thirteen semi-detached villas on Mornington Terrace and the adjoining railway retaining wall were demolished to widen the cutting. A further twenty detached and semi-detached Park Village East villas, along with Stephenson's railway cutting retaining wall, were demolished on the west side (figure 9). Mornington Street Railway Bridge, a steel bridge with brick vaulting supporting an asphalt deck with brick parapets, provided a new Camden Town gateway to Park Village East. It replaced the Serpentine Road Bridge connecting Park Village East to Mornington Crescent and also Stanhope Road Bridge connecting Mornington Terrace through to the New Road (Euston Road), via Stanhope Road which formed the Southampton Estate boundary along the east side of Nash's Cumberland Market, Clarence Gardens and Munster Square.

Figure 8 - 1870 Ordnance Survey

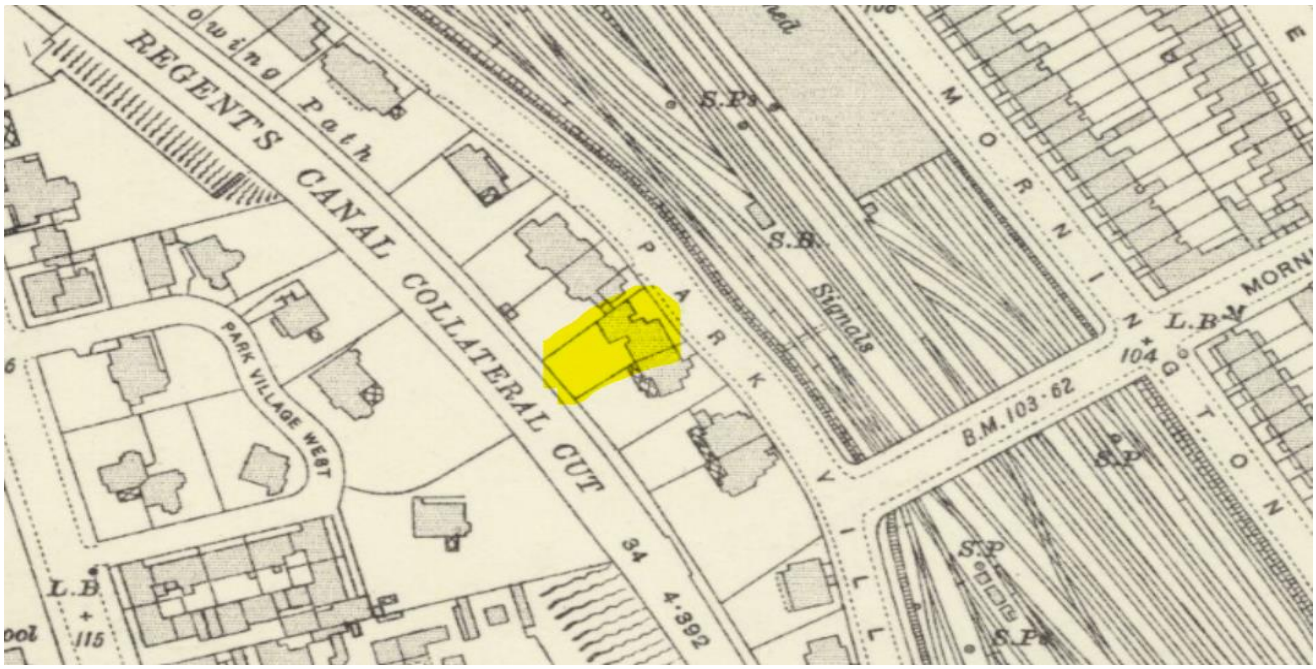


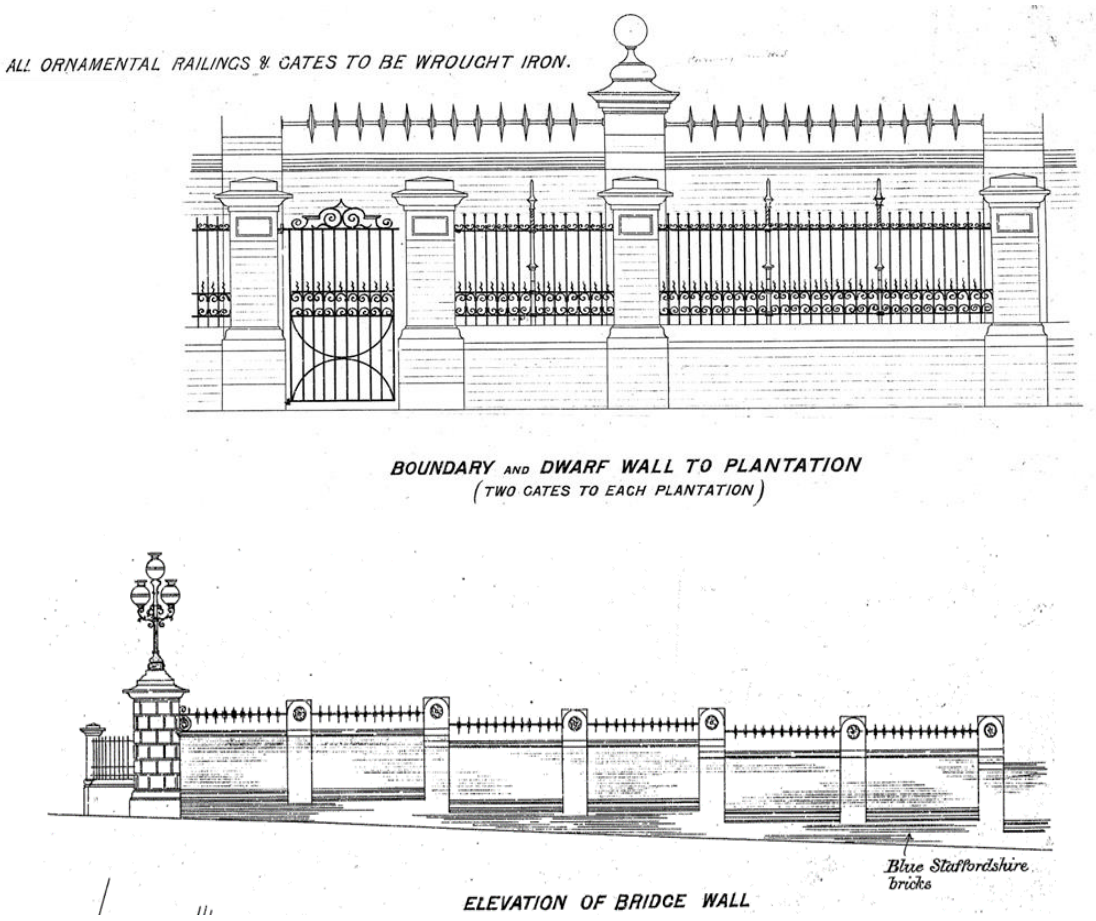
Figure 9 - 1916 Ordnance Survey

4.2.7 The new 60 m wide 17m deep cutting was supported by monumental brick retaining walls that employ closely spaced shallow buttresses, carried up to form piers with decorative ball finial stone caps at street level. Architectural design aesthetics match the quality and refinement of Stephenson's older work but use blue engineering brick instead of the earlier red stock brick; does not rely on the curved batter for structural integrity; and at street level replaces Stephenson's distinctive open decorative iron railing with brick panels. A section of the original walls retaining wall survives on the east side of the cutting in the approaches to and throughout the Upper Parkway tunnel. Sections of original railing survive along the parapets to the rear of some of the adjoining properties, including 57 Mornington Terrace.

4.2.8 Designed as a single architectural scheme, Mornington Street Bridge and the cutting retaining walls express an innovative urban design that integrated the railway into the historic, social and architectural fabric of Camden Town and Regent's Park:

- at street level the Park Village East retaining wall incorporates architectural features that complement the immediate neighbouring streetscape, using a red brick facing and dressed Portland stone coping and ball finials (figure 10). A matching dwarf wall, originally designed with brick piers to support ornate metal railings and gates, forms planting beds for shrubs and trees, intended to soften the imposing street level retaining wall and maintain Nash's 'wooded valley'
- similar architectural and landscaping refinements are omitted from the Mornington Terrace retaining wall on the Camden side of the cutting, which simply continues the blue engineering brick materiality and detailing of the cutting through to the street level parapet, finishing with a simple stone coping.

Figure 10 'L.&N.W.R. EUSTON WIDENING Details of Boundary walls and Ironwork', 1900. (Source: Network Rail Archives)



4.2.9 During World War II many of the nearby Regent Park terraces provided office accommodation for the UK Ministry of Works. The area suffered heavy bombing during the 1940 London Blitz, including extensive damage to a number of Park Village East properties and associated townscape (figure 11):

- 18 and 20 Park Village East were damaged beyond repair and demolished
- 22 and 24 Park Village East were rated as "Seriously damaged but repairable at cost" (The London County Council Bomb Damage Maps 1939- 1945, Page 49 and 2010/3675/P) and subsequently partially rebuilt
- the dwarf wall forming the planter north of Mornington Street Bridge was rebuilt but without previous ornate brickwork, architectural stonework or iron railings . Railings were also removed and associated ornate brick piers reduced to the planter sections south of Mornington Street Bridge, with only the dwarf wall retained
- the canal was infilled in 1940. Gardens of Park Village East were extended to incorporate the towpath and canal. Viewed from Gloucester Gate Bridge the

infilled canal bed now appears as a secluded and semi-wild area of mature trees and undergrowth.

Figure 11 – London Bomb Damage 1945 (based on 1916 OS)

4.2.10 Post-war reconstruction at 22 and 24 Park Village East coincided with a change in governance under the newly created The Crown Estate, the controversial 1950-60s reconstruction of the Nash Regent's Park Terraces; and transfer of ownership of 32 acres of land to St Pancras Borough Council, which it redeveloped as social housing i.e. Cumberland Market and Regents Park Estates.

4.3 Description

4.3.1 The Historic England list entry number 1322056 (first listed 14 May 1974) provides a brief architectural description.

PARK VILLAGE EAST (West side) 4 Nos.2-16, 22-34, 36A & B (Even) and attached railings
Street of 12 semi-detached and 4 detached, related villas. 1825-36. Designed and laid out by John Nash and his assistants. For the Commissioners of Woods, Forests and Land Revenues. Picturesque series of 2 and 3 storey stucco detached villas of varying styles.
EXTERIOR: Nos 22 & 24 (Sussex Cottage and Albany Cottage): pair of villas. Rusticated stucco with plain stucco 1st floor band and 1st floor window bays. Low pitched slated roof with deeply projecting bracketed eaves; gables on front and south elevations forming pediments. Centrally positioned large slab chimney-stack. 2 storeys 4 windows. No.22, side entrance in porch; No.24, front porch, both with panelled wooden doors and fanlights. Tripartite ground floor sashes. Names

of cottages inscribed on 1st floor band. Architraved sashes to 1st floor. Front pediment with blind oculus in tympanum. Left-hand return with blind lunette in tympanum and tripartite 1st floor window.

4.3.2 The Survey of London (1949) describes the exterior architectural composition based online drawings prepared by Miss B. G. Bryan Brown for the National Buildings Record (figure 12). The National Buildings Record was created in 1941 to collate and create photographic and drawn surveys of historic or significant buildings deemed to be under threat from bombing, so that, in the event of a building's destruction, a record of it would be preserved. It was initially based at the Royal Institute of British Architect (RIBA) offices at 66 Portland Place.

Nos. 22 and 24....., show an elaborate classical design, the stucco being deeply channelled with horizontal joints to imitate masonry. A picturesque effect is cleverly contrived from an almost symmetrical plan by slightly recessing the left part of the front and cantering the remainder on the window of the front rooms of No. 22, over which the deep eaves are sloped up in pedimental form. There is much play with slightly-recessed surfaces and the jointing is omitted here and there. The accidental effect is increased by the different treatment of the entrances. No. 22 is entered from a side porch, aided by dwarf balustraded terraces, while No. 24 has a front porch in its recessed façade. The back elevation is of equal interest. It is of three storeys, completely balanced in its parts. A large pediment spans the centre, which has a veranda and an elaborate roofed trellis balcony to the middle floor. The side windows in this storey has semicircular arches.

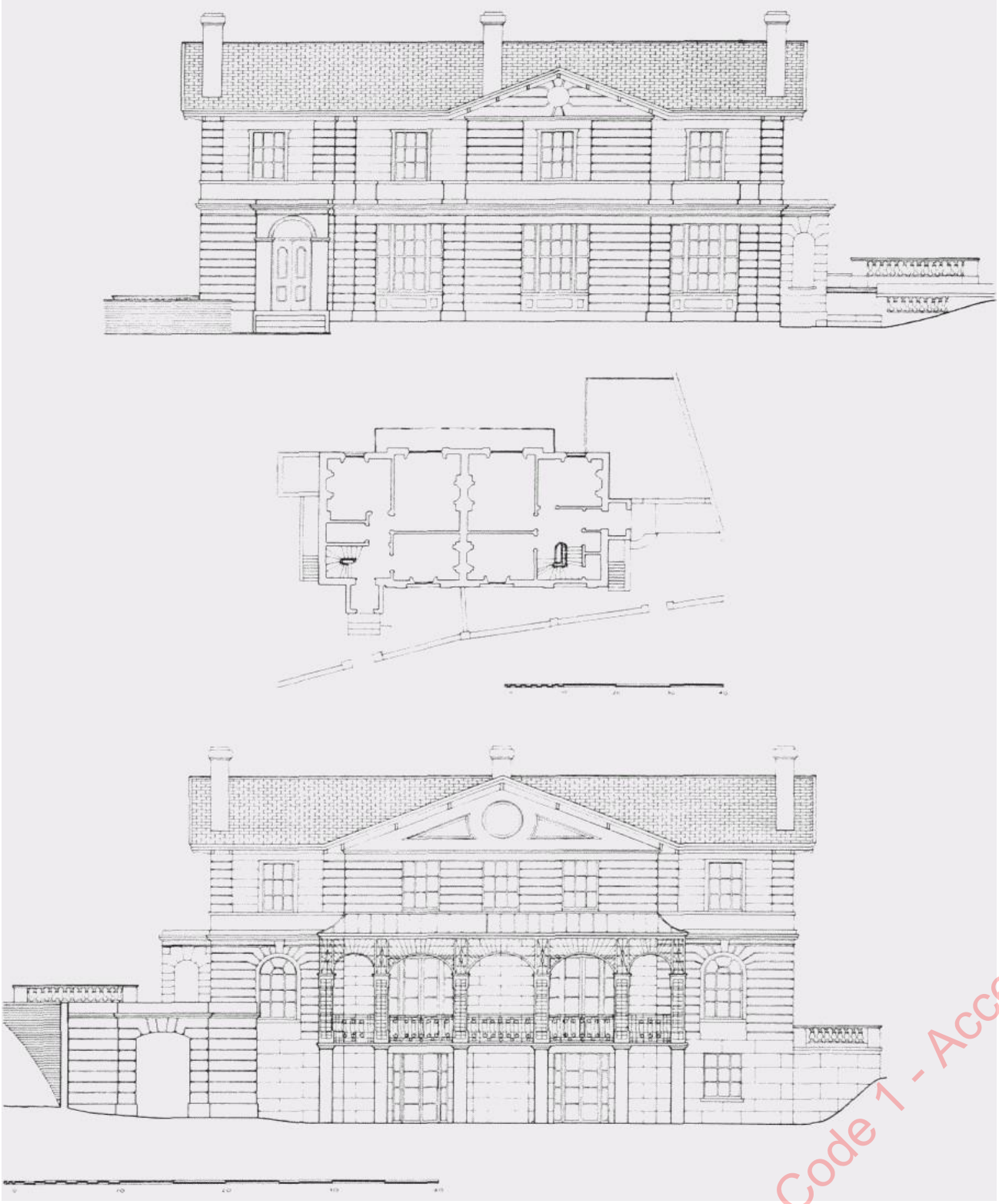


Figure 12 - Survey of London (from National Building Record) 22 -24 Park Village East

4.3.3 Much like the National Building Record collection, the Pilgrim Trust's 'Recording Britain' project was set up at the outset of war. It employed artists on the home front to capture a record of British lives and landscapes at a time of imminent change. Phyllis E Ginger's watercolour 'Park Village East, Albany Street. NW1' is part of the collection now held by the V&A Museum (figure 13). It depicts Park Village East closed, possibly due to bomb damage, with a barrage balloon in the distance. It captures both a sense of impending threat that proved to be so destructive and an appreciation of the villa setting as an elegant design relationship between the Regency picturesque and an Edwardian interpretation of architectural classicism expressed in the LNWR Mornington Street Bridge and the Park Village East cutting retaining wall and planter.

Figure 13 Phyllis E Ginger's watercolour 'Park Village East, Albany Street. NW1'

General arrangement

4.3.4 24PVE (also named 'Albany Cottage') is a semi-detached brick building on a sloping site comprising three storeys; two above street level and one below, sharing a party wall with 22 Park Village East. The lower level is accessible via internal and external stairs and from the rear garden. A lightwell illuminates the lower ground rooms that outlook towards the street and incorporated a retaining wall that support the road, at a level that corresponds to the property ground floor.

4.3.5 There is evidence that both sides of the property have been subject to historic ground movements due to subsidence caused by trees within close proximity to the houses. 22 PVE reported subsidence concerns in 2012, by 2014 24 PVE had applied for planning permission for underpinning due to subsidence. Piled underpinning was carried out to 24 PVE between 2014

and 2015. 22 PVE, the adjoining property is founded on the original shallow foundations with no remediation works carried out

4.3.6 At 24 Park village East the original building structure of load bearing masonry construction with suspended timber floors is now supported on the 2017 piled slab acting as the underpinned foundation. The roof is a pitched timber roof interrupted by the chimney stacks situated, one storey height above. The masonry party wall and chimneys are shared with the adjoining 22 Park Village East. The chimney breast has been retained across all floor levels.

4.3.7 From the front gate the main entrance to the house is from a small porch to the east (street) façade. A series of external stairs lead from a street level external terrace to the lower ground floor door and the rear garden.

4.3.8 Street front, rear garden and side façades articulate a neo-classical architectural decorative stucco scheme that came to typify fashionable late Georgian and early Victorian tastes.

Garden and boundaries

4.3.9 The informal garden is laid out as a patio terrace giving way to lawn with mature trees, sloping to the west, with a low terrace to the incorporated section of former towpath and infilled canal bed at the far end:

- the boundary with 22 Park Village East is defined by a brick panel wall with brick coping and supported by brick piers. This has recently been repaired to correct defects (cracks and displacement) associated with historic ground subsidence
- the front boundary is a rendered low brick wall and piers with simple stone coping supporting replacement iron railings.

Post-war alterations

4.3.10 The National Buildings Record line drawings may incorporate minor inaccuracies, but it highlights later architectural and decorative alterations made during the post-war reconstruction. From records made during these repair works No 22 Park Village East was in worse structural condition, requiring reconstruction of brickwork on a larger scale. However, reconstruction of the roof and other changes also affected 24 Park Village East. Changes are most prevalent in the garden (west) lower ground floor and side (north) lower ground and ground floor façades:

- an ornate colonnade and arched trellis veranda spanning the shared rear central bay have been replaced by the simple 1st floor open concrete balcony supported by octagonal columns
- centrally placed blind windows infill the 1st and ground floor façade to balance the fenestration across the shared rear central bay. Both are shown as fully glazed in National Buildings Record line drawings, although this seems a misrepresentation given the position coincides with the party wall

- plain stucco is present where formerly ashlar detailed render appeared to have been applied to the rear central ground floor bay and across the lower ground floor elevation
- a lower ground floor extension to the north facade to house a boiler room.

4.3.11 Alterations were made in 2017 to install a suspended piled slab across the lower ground floor, as well as alterations to the existing drainage discharging to the sewer in Park Village East.

Interior

4.3.12 Designed as a modest family home the interior originally comprised three floors, each with a specific set of functions (refer to figures 14-16):

- lower ground floor- kitchen, laundry and domestic living spaces, inc. sitting room
- ground floor - main reception rooms - drawing room, dining room and parlour or study
- 1st floor - principal bedrooms

4.3.13 Documentary evidence and visual inspection highlight numerous internal alterations to 24 Park Village East due to:

- minor changes associated with post-war re-construction to lower ground floor room layout and new access to the garden via French doors
- minor modifications in plan form and room function that reflect late 20th century lifestyle changes
- installation of piled raft underpinning.

Figure 14 1948 lower ground floor internal layout

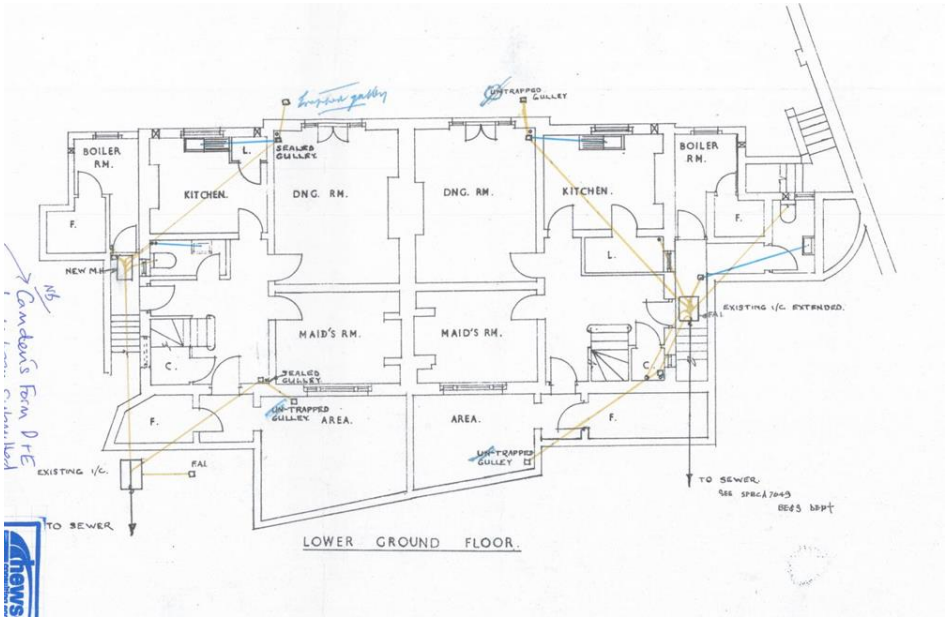


Figure 15 1948 ground floor internal layout

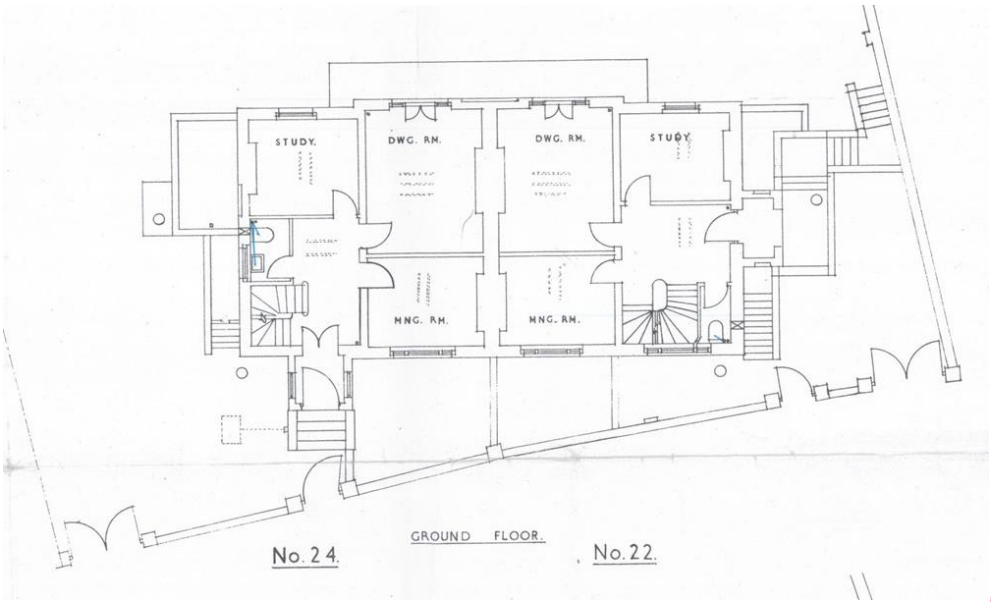
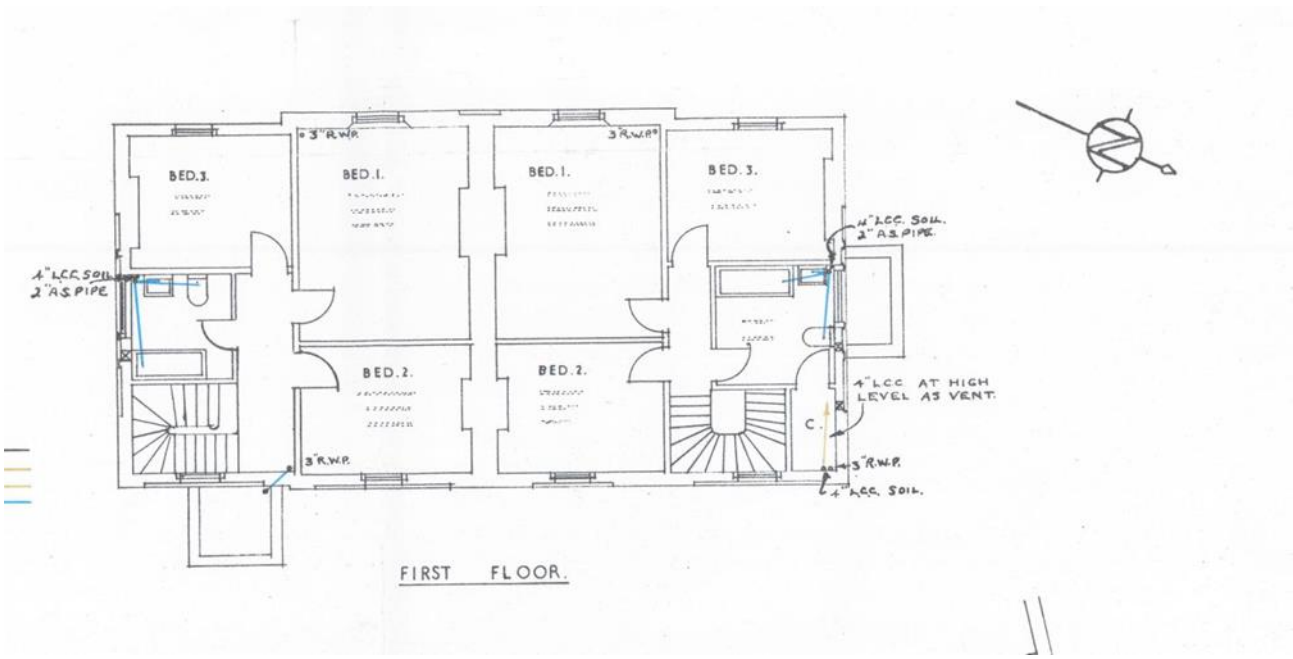


Figure 16 1948 first floor layout



4.4 Setting

4.4.1 The setting contributes to historic and architectural interest at 24 Park Village East, especially in terms of its group value as part of the surviving Park Village East village suburb.

4.4.2 Park Village East:

- contributes to the wider significance of Regent's Park Conservation Area and is a key element to London's single largest and most comprehensive Georgian metropolitan improvement
- comprises an architect designed street of residential villas that represent innovation in elite late Georgian suburban planning, architecture and landscape design composition
- has been modified as a consequence of social and cultural interactions associated with 19th/20th century transport planning and urban design.

4.4.3 24 Park Village East has encountered dramatic changes in setting since construction, which applies equally to the neighbouring villas. Notably the loss of the canal, the 1901-1906 widening of the Euston Approaches railway cutting and associated demolition of the villas along the eastern side of Park Village East.

4.4.4 These complex changes disrupt the intended suburban setting but reflect culturally important early and mid-20th century urban design narratives that both clash and interplay with Nash's intended illusion of 'rus in urbe':

- the gentrified character, picturesque aesthetic and the variety of classic and traditional inspired architectural design employed at the Park Village East villas contributes a lingering sense of Nash's architectural and landscape design vision within a contemporary, dynamic urban environment;
- the villas express an architectural design vocabulary that represents fashionable late Georgian tastes. This informed subsequent Victorian and Edwardian urban design evident in surrounding streets. It particularly influenced the public realm interface of historic railway infrastructure, such as the materiality and the lighter style of classicism expressed in the 1900-1906 brick railway structures, such as Mornington Street Bridge.

4.4.5 Wartime impact to the setting that contributes to the significance of the Park Village East villas is unequivocal and remains apparent today. Modifications affect the historic and architectural interest of the once stylish Park Village East townscape, especially north of Mornington Street Bridge. Portland Stone architectural flourishes to the parapet wall were removed and a utilitarian low brick planter wall built to replace the brick and Portland Stone plinth and piers supporting ornate ironwork railings. Latterly the planting has reverted to scrub.

4.5 Condition

4.5.1 24 Park Village East is in fair-good condition, given the age and following recent maintenance and structural repair work:

- externally the property has recently been decorated and is showing few signs of significant defects.
- internally, the property has been refurbished and is in good condition overall.

4.5.2 External areas are generally in poor to fair condition. Minor defaults are consistent with a building of this age, structural form and settlement history:

- minor historic cracking at the front boundary wall
- masonry pier at the left hand side of pedestrian gate is leaning toward the road.

4.6 Significance

4.6.1 Park Village East is integral to the Regent's Park masterplan designed by the noted Regency architect John Nash in 1825-36. 24 Park Village East and its semi-detached neighbour, no. 22, possess intrinsic architectural and historic interests, but derive most of their significance from their place within the wider Park Village East composition

4.6.2 Nash's quirky mix of Neoclassical and Tudor-Gothic exteriors were hallmarks of his vision for a verdant and stylish residential suburb. The picturesque style "rus in urbe", playfully blending

classical architectural styles and motifs, proved highly fashionable in the early first half of the 19th century.

4.6.3 Nash's quaint yet sophisticated conception of an idealised landscape composition as a setting for highly stylised domestic architecture influenced the design and layout of early Victorian villa suburbs (Tyack 1993, p74), including Decimus Burton's Calverley estate at Tunbridge Wells (1828-39), Rock Park in Birkenhead (1837-50) and the Park estate in Nottingham (1829-1918).

4.6.4 The setting retains elements of the original design alongside modifications associated with railway expansion. Taken together these design elements illustrate a pivotal moment of social and cultural change at the beginning of the 20th century. The 1900-1906 demolition of early 19th century aspirational residences appears audacious but is perhaps in part a reflection of Nash's tarnished reputation at the time and growing public confidence and support for the expanding railway network.

4.6.5 Historic railway infrastructure introduced townscape features definitive of the railway age, such as railway bridge and cutting retaining walls (all locally listed), that represent a design aesthetic inspired by both Stephenson's engineering and Nash's Park Village East architectural style and setting. The subtle use of materials and stylistic details highlight historic, geographical, and social distinctions embodied in the respective identities of Regent's Park and Camden Town.

4.6.6 Such bold engineering design expressed in restrained stylistic refinements is a celebration of early 20th century national transport infrastructure promoting physical and socio-economic mobility. The introduction of a fresh architectural design, whilst also acknowledging the diverse character of local communities, captures the disruptive impact of the railway as an agent of modernisation.

4.6.7 Notably this juxta position with the epitome of Regency architectural design associated with elite privilege at the apex of a more rigid social hierarchy makes a positive contribution to the significance of the Park Village East listed villas.

4.6.8 The key architectural and landscape design features that contribute to the significance of Nash's 24 Park Village East include:

- a dual aspect design of stuccoed façades contributes to an experience and appreciation of Nash's vision of the 'picturesque' by responding to differences in landscape design associated with the east and west facades. The relative simplicity of the slightly asymmetric east facing street elevation contrasts with the more expressive elevation on to the gardens that originally overlooked the tow path to the former Collateral Cut, a spur off the Regent's Canal directly west of the properties. An external 1st floor balcony adds character and variety to the way in which this aspect of the house and garden was/is experienced. Despite the loss of waterside setting, the former presence of the canal is still discernible as an

overgrown lower garden 'terrace';

- the property is bordered with walls and railings, surrounded by trees in a relatively quiet, tranquil part of London that still evokes a sense of the suburban picturesque.

4.6.9 The key features of the later setting that contribute to the significance of 24 Park Village East are shown in figure 13, including:

- matching pairs of decorative Portland stone piers and ornate iron lamp standards (grade II listed) frame the access points to Mornington Street Railway Bridge, which serves as a gateway to the Crown Estate via Park Village East
- planting beds, originally contained within ornate ironwork railing (now removed), retain shrubs and trees to soften the imposing street level parapet to the railway cutting fronting Park Village East, maintaining Nash's concept of a 'wooded valley'.
- the Park Village East parapet south of Mornington Street Bridge retains architectural features honouring late classism that formerly extended along Park Village East, which defined the streetscape, including the use of red brick, Portland stone coping and Portland stone ball and finials.
- similar architectural and landscaping refinements are omitted from the retaining wall on the east side of the cutting, reflecting historic social and cultural demarcations.

4.6.10 Post-war urban restoration following extensive bomb damage and the infilling of the Collateral Cut resulted in the loss of the waterside aspect to the setting. In addition, loss or change to the original 1901-1906 railway expansion architecture and decorative design, and compromises in the quality of post-war design, materials and workmanship that affect the wider urban setting, are all factors of the setting that detract from significance.

4.6.11 The contribution of historic interests to the significance of 24 Park Village East benefits from archival sources specifically intended to document places and property at risk of war-time destruction. These are important documents in terms of understanding the buildings but also have significance as representing conservation work undertaken by women engaged in wartime roles on the National Buildings Record and the Pilgrim Trust's 'Recording Britain' programmes.

5 Ground Movement and Building Damage Assessment

5.1 Ground Movement Technical Standard

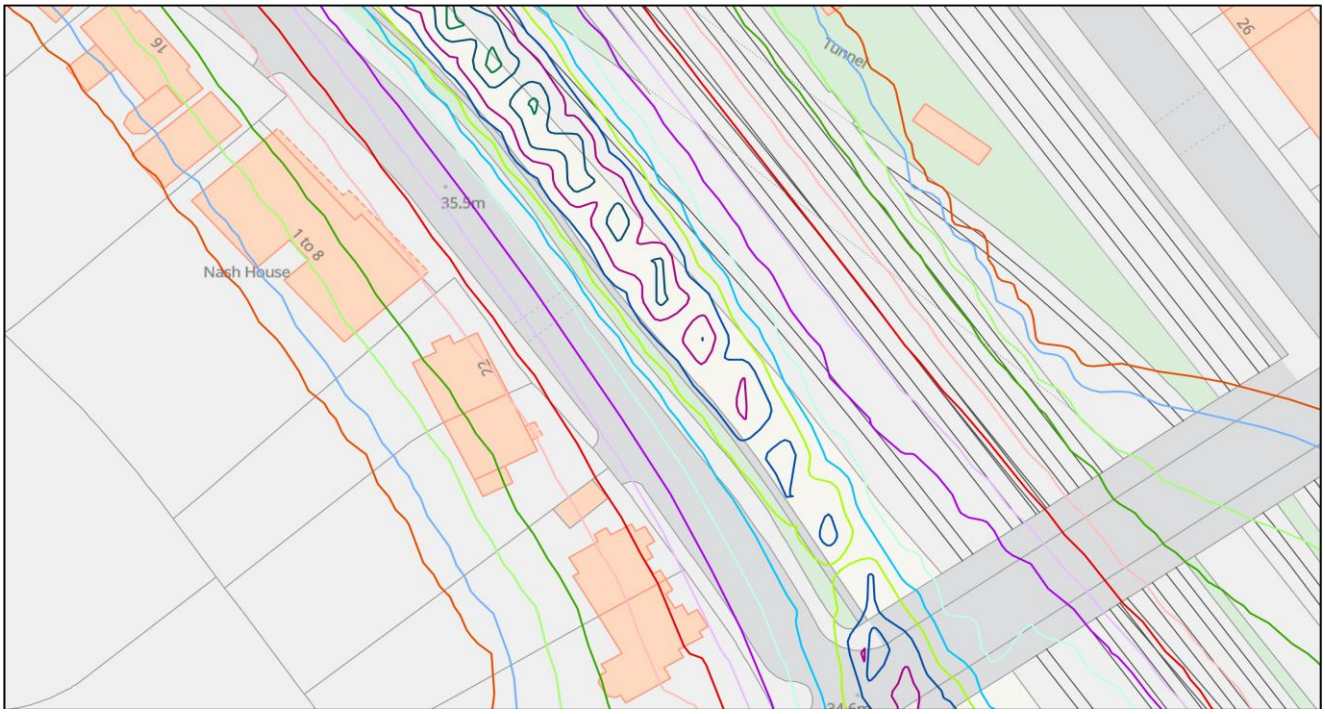
5.1.1 A process for determining potential harm to property because of ground movement caused by HS2 underground construction is outlined in HS2 Information Paper C3: Ground Settlement. This process informs a HS2 technical standard and SCSjv asset protection mitigation strategy; and generates information used to define the scope of monitoring and conservation management works detailed in this method statement.

5.1.2 HS2 Technical Standard HS2-HS2-TN-STD-000-000005 – Ground Movement and Assessment from Below Ground Construction further details the three phase Ground Movement Assessment (GMA) process.

5.1.3 24 Park Village East is located within the HS2 project zone of influence, as defined by Phase 2 GMA 1mm contour (SCS Railways JV Maps GIS system (Figure 17) and is at risk due to potential ground movements induced by HS2 construction.

5.1.4 As 24 Park Village East is a listed building it meets sensitivity criteria that require a Phase 3 GMA.

Figure 17 Phase 2 GMA contour



5.2 Phase 3 GMA

5.2.1 Phase 3 Ground Movement Assessment Report - Building Assessment Euston Cavern and Shaft - Euston Throat West S1 (1MC03-SCJ_SDH-GT-REP-SS01_SL03-000018) considered structural and heritage impact to 22 Park Village East due to permanent construction works:

- Euston Tunnel (TBM)
- Sprayed Concrete Lining (SCL) Crossover Tunnels
- Euston Cavern Shaft
- Euston Cavern
- Connections between Euston Cavern, Euston Cavern Shaft and SCL tunnels.

5.2.2 Historic records of ground movements have also been considered alongside the modelling data. There has been a history of landslips associated with the infilled Collateral Cut canal, most notably the collapse of the canal tow path retaining wall c 1935. In addition, there are historic records of ground movements along Park Village East associated with the railway cutting retaining wall.

5.2.3 Historic geotechnical factors have been further explored and findings inform the analysis and the recommended monitoring and mitigation measures set out in this method statement

- historical information on the ground characteristics, ground movements, damage and works carried out on the Park Village East properties associated with both the infilled canal and the railway cutting has been assessed (SCS Phase 1 Geotechnical Desk Study (Doc. No. 1MC03-SCJ_SDH-GTNOT-SS01_SL03-000014).
- additional geotechnical survey and desk study has been undertaken which demonstrates a degree of deformation to some Park Village East properties where historically there may have been a dominant geotechnical mechanism towards the railway cutting (SCS Technical Note - Phase 2 Geotechnical Desk Study – Park Village East Wall S1 Document no.: 1MC03-SCJ_SDH-GT-NOT-SS01_SL03-000015).

5.3 Building Damage Assessment

5.3.1 The Phase 3 GMA includes a Building Damage Assessment that considers material properties consistent with the building typology and age. Burland et al. (1977) define six damage categories that distinguished between three principal criteria:

- Burland damage categories 0 to 2 only - affects to visual appearance
- Burland damage categories 3 & 4 – affects to serviceability or function
- Burland damage category 5 - affects to building stability.

5.3.2 22 and 24 Park Village East are jointly assigned Building Damage Category 4 (severe) due to a combination of:

- predicted HS2 induced vertical and horizontal ground movements
- different foundation typologies between 22 PVE and 24 PVE exacerbating the impact of predicted differential ground movements
- historic factors that may compromise the integrity of the building, including post-war reconstruction and recent subsidence induced rotation towards neighbouring Ash tree.

5.3.3 There are no unresolved critical assumptions likely to change the Phase 3 GMA Building Damage Assessment and Heritage Sensitivity outcomes.

5.3.4 A Phase 3 GMA refinement study (1MC03-SCJ_SDH-GT-REP-SS01_SL03-000063) summaries recent subsidence experienced at 22 and 24 Park Village East and describes the apparent consequence of underpinning works to 24 Park Village East. Evidence suggests that the cracks within 22 PVE attributed to foundation subsidence have not closed up as expected following underpinning of 24 Park Village East. These may have opened up further and 22 Park Village East appears to be rotating away from 24 Park Village East towards the north.

5.3.5 Phase 3 GMA concludes that the calculated vertical settlements between the adjacent properties may cause damage in the superstructure as 22 PVE begins to drop away from the underpinned 24 PVE. Risk of loss of building serviceability and/or stability is significant:

- damage will likely occur on the interface between the party wall and the cross-walls or roof of 22 PVE, resulting in cracks opening at roof level and through the associate elevations. The garden façade will experience the greatest differential settlement, specifically damaging the focal decorative stucco design within the central gable overlooking the garden
- cracks could lead to water-ingress at roof level and potentially loss of bearing of rafters or joists supported on the party wall. The movements may also cause windows and door frames to be distorted, the floor to be noticeably sloping, and service pipe and rainwater guttering to be disrupted or fractured.

Heritage Sensitivity and Magnitude of Effects

5.3.6 The sensitivity of the listed building and magnitude of heritage impact considers ground movement effects on aspects of the building that make a positive contribution to its heritage significance, as described in section 4.6.

5.3.7 A system of scoring, following London Underground Movement Guidelines (HS2 Technical Standard - Ground Movement and Assessment from Below Ground Construction (HS2-HS2-TN-STD-000-000005, Table 10), considers two criteria:

- sensitivity of the structure to ground movements and interaction with adjacent buildings
- sensitivity to movement of particular features within the building.

5.3.8 24 Park Village East is assigned:

- a structural sensitivity score of 1: the semi-detached building lacks a single coherent foundation system. Predicted differential ground movements increase the potential for structural damage that harms the architectural interest of the listed building;
- feature sensitivity score of 1: risk of cracks affecting external architectural appearance, particularly the neo-classical architectural decorative scheme, specifically rusticated stucco with moulded entablature and gable pediment. This contributes to the architectural interests and the group value of the Park Village East villas.

5.3.9 In summary, the magnitude of heritage impact is potentially high (HS2 Technical Standard - Ground Movement and Assessment from Below Ground Construction (HS2-HS2-TN-STD-000-000005, Table 11).

5.3.10 Both the DC4 (severe) Building Damage Assessment and the high magnitude heritage effect require a mitigation response that complies with the HS2 Technical Standard - Ground Movement and Assessment from Below Ground Construction (HS2-HS2-TN-STD-000-000005).

5.3.11 Specifically, the predicted movements require a conservation approach that combines:

- a structural mitigation design solution to remedy existing defects and ensure limited differential structural movements between 22 PVE and 24 PVE. This aspect of the mitigation strategy is detailed in Heritage Agreement Method Statement HAMS - Structural Mitigation of Ground Movement Due to Below Ground Construction at 22 Park Village East - ADP-ESCT-02, Document Reference: 1MC03-SCJ-EV-MST-SS01_SL03-000019
- a monitoring and remedial repair strategy to minimises the potential adverse effects of any residual superficial cracking of external and internal stucco/plaster finishes due to ground movements resulting from HS2 tunnelling. This is addressed by means of the combined monitoring arrangements detailed in this HAMS and the corresponding HAMS for 22 Park Village East (Document ref: 1MC03-SCJ-EV-MST-SS01_SL03-000015).

Environmental Minimum Requirement

5.3.12 The HS2 scheme design and associated construction and logistics planning has continued to be developed following publication of the HS2 London-West Midlands Environmental Statement (ES) (and subsequent Supplementary Environmental Statements (SES) and Additional Provision Environmental Statements (AP ES)).

5.3.13 The controls contained in the HS2 Environmental Minimum Requirements (EMR) ensure that impacts which have been assessed in the relevant ES will not be exceeded and, if possible, reduced.

Table 2–Environmental Statement Assessment

Name	Designation	Value	Construction Impact		
			Nature of impact	Scale	Effect
Park Village East	Listed building, conservation area	High	The asset is located within the 10mm settlement contour associated with the construction of the Proposed Scheme portal and the revetment replacement works. Mitigation will involve the monitoring of settlement impacts and the use of tunnel construction and revetment construction techniques that reduce and stabilise settlement.	Medium	Major adverse

5.3.14 Table 3 summarises the construction impact based on the design assessed in the November 2013 ES, as amended by subsequent Additional Provision ES documents. Both 22 and 24 Park Village East were assessed as part of Regent's Park Conservation Area.

5.3.15 The ES anticipated a medium scale impact that this would be mitigated by tunnel construction stabilisation techniques and monitoring to ensure the structural effects of ground movements are minimised.

5.3.16 The Phase 3 GMA demonstrates the latest design produces a Building Damage Category 4 (severe) and a heritage sensitivity score 2 which presents a potential high magnitude heritage impact. At 24 Park Village East cracks to walls may materialise and services/drainage may also be impacted that affects serviceability. The GMA also highlights the need to reconcile inconsistencies in foundation systems that exist between 22 and 24 Park Village East.

5.3.17 This refinement demonstrates significant environmental effects of tunnelling remain consistent with the ES predicted major adverse.

5.3.18 Sections 7 and 8 of this HAMS fully details a method statement for monitoring and conservation management in accordance with SCS Asset Protection and Inspection & Monitoring (I&M) plans and procedures.

5.3.19 In addition, mitigation works proposed at 22 Park Village East will resolve underlying building defects that otherwise would likely result in significant loss of serviceability at 24 Park Village East even if no tunnel induced ground movements were to occur. Consequently, the environmental effect of the proposed SCSjv asset protection mitigation measures at 22 and 24 Park Village East is beneficial rather than major averse.

6 Mitigation

6.1.1 Information generated through the Phase 3 GMA informs asset protection process is used to define the mitigation strategy that responds to the potential harm to 24 Park Village East.

6.2 Asset Protection Management Plan

6.2.1 SCS Asset Protection Management Plan (1MC03-SCJ-EN-PLN-S000-000002) sets out the framework for the design and implementation of measures that respond to the Building Damage Assessment presented in the GMA report. It establishes procedures that ensure Third Party Assets are suitably protected from ground movements arising from S1/S2 London Tunnels Contract tunnelling and excavation activities.

6.2.2 Intended measures for protecting 24 Park Village East accord with the Management Plan comprising:

- Monitor, React and Repair Strategy (Asset Protection Mitigation Strategy Category 2b) prior, during and following construction.

6.3 24 Park Village East Mitigation Strategy

6.3.1 The Monitor, React and Repair Strategy is most suitable, especially from a heritage conservation perspective. Key elements are:

- close attention to monitoring movements at 22 -24 Park Village East. Current baseline monitoring systems shall be maintained (SCSjv Designers Monitoring Plan - Area East Buildings Package 2 (EB2) - S1MDL Code: Document no.: 1MC03-SCJ_SDH-GT-PLN-SS01-000002). Supplementary monitoring proposals detailed in section 7 Monitoring are based on further design considerations (Asset Specific Mitigation Designer's Monitoring Plan, 22-24 Park Village East, Asset Protection Area East-Euston Throat West Buildings Package 2 ADP-ESCT-02, 1MC03-SCJ_HWS-ST-PLN-SS01_SL03-000001 and Contractors Monitoring Plan - 22-24 Park Village East - Asset Protection Euston - APD-ESCT-02 1MC03-SCJ-GL-PLN-SS01_SL03-000003)
- a risk-based Asset Action Plan will define specific monitoring trigger values that will determine further safeguarding actions based on the timely management of mitigation interventions in response to actual movements registered during and following tunnel construction, as outlined in section 8 of the Conservation Management
- site inspections will determine appropriate measures and the timing of remedial or repair works. All repair and remedial repair works conducted at the property will meet required quality and conservations standards. Subject to freeholder/leaseholder agreement, SCSjv intend to adopt The Crown Estate Guidelines and Standard Specification to Architects for the Regent's Park, Kensington Palace Gardens, St. James's, Pall Mall South, Haymarket and Lower Regent Street Residential and Commercial Estates, Seventh Edition January 2014
- repair of predicted cracks will follow completion of permanent construction works, as outlined in section 8.4 Conservation (repair) schedules. More generic remedial repairs may also be aligned with freeholder maintenance schedules.

6.3.2 Emergency Works will be undertaken if predictions are exceeded, and the observed rate or magnitude of ground movement pose a risk to health and safety or to the preservation of the listed building. Framework contractors are on standby to undertake any necessary interventions, i.e. damage to utility connections, or damage to waterproofing systems that compromise serviceability or inhabitability of buildings. Emergency works will be undertaken in collaboration with the London Borough of Camden and Historic England, as set out in the Heritage Agreement (5 May 2017) clause 27.

7 Monitoring

7.1.1 Monitoring proposals take into consideration the existing ground movement baseline (section 7.2) and apply further guidance and requirements detailed in:

- HS2 Specification for Civil Engineering Works – Series 4500: Instrumentation and Monitoring – Construction Document no.: HS2-HS2-CV-SPE-000-014500
- SCSjv Instrumentation and Monitoring Statement S1 and S2 Document no.: 1MC03-SCJ-CL-STA-S001-000001
- SCSjv Designers Monitoring Plan - Area East Buildings Package 2 (EB2) - S1MDL Code: Document no.: 1MC03-SCJ_SDH-GT-PLN-SS01-000002
- SCSjv Asset Specific Mitigation Designer's Monitoring Plan, 22-24 Park Village East, Asset Protection Area East-Euston Throat West Buildings Package 2 ADP-ESCT-02 Document no.: 1MC03-SCJ_HWS-ST-PLN-SS01_SL03-000001
- SCSjv Contractors Monitoring Plan - 22-24 Park Village East - Asset Protection Euston - APD-ESCT-02, Document no.: 1MC03-SCJ-GL-PLN-SS01_SL03-000003

7.2 Ground movement baseline trends

7.2.1 Comprehensive ground movement records for Park Village East have been collected by both the Early Works (CSjv) and Main Works (SCSjv) contractors as part of the 'Network Rail Ground Movements Mitigation Scope'. The focus has been on understanding how mitigation works to Network Rail's Park Village East Retaining Wall could influence ground movements affecting property and rail assets in the vicinity. The adopted approach is based on Designers Monitoring Plan - Area East Buildings Package 2 (EB2) - S1MDL Code (1MC03-SCJ_SDH-GT-PLN-SS01-000002).

7.2.2 This provides a robust baseline record of seasonal movements and local spatial trends with reference to key third party assets, including 22-24 Park Village East.

7.2.3 The current baseline situation relevant to 22-24 Park Village East is as follows:

- horizontal movement data from routine patch scanning has been taken on the front elevation of 22 Park Village East since 2020 (SCjv/SCSjv) show no significant movement. Recorded measurements do not exceed technical margin of error (+/- 3mm).
- levelling data has been recorded on the pavement outside 22-24 Park Village East from the end of June 2018 to the present day. The precise manual levelling shows varying seasonal movements that fluctuate by up to 5mm in vertical movement.
- satellite monitoring data from the period 2011-2020 has also been used to gauge

historic patterns of ground deformation prior to the commencement of the HS2 Park Village East Retaining Wall mitigation works (Sixense, November 2022, Atlas InSAR Ground Displacement Monitoring HS2 S1S2 East Variation of Works Historical Study). As with the patch scanning data, any apparent movements are within the range of margin of error arising from methodological limitations.

7.2.4 There is no movement data for the rear or within the garden.

7.2.5 The SCS 'Network Rail Ground Movements Mitigation' monitoring system will be maintained as a continuous baseline record of ground movements attributable to seasonal and current/future construction and related events across the wider area. Specifically, localised ground movement data will determine:

- tunnel ground movements and any variance against Phase 2/3 GMA predictions.
- potential association with observed deflections and cracking of all listed building within the 1mm settlement contour.

7.3 Additional monitoring requirements and options

7.3.1 Specific monitoring proposals for individual residential buildings scoring Damage Category 3 (DC3) or above, including 24 Park Village East, are intended to supplement the Network Rail Ground Movements Mitigation Scope monitoring strategy.

7.3.2 Additional instrumentation and monitoring will focus on recording specific measurements to inform conservation and mitigation measures to protect 22 and 24 Park Village East from the effect of below ground construction, including:

- monitoring asset response and performance of the installed piled raft underpinning system, in accordance with Asset Specific Mitigation Designer's Monitoring Plan, 22-24 Park Village East, Asset Protection Area East-Euston Throat West Buildings Package 2 ADP-ESCT-02 Document no.: 1MC03-SCJ_HWS-ST-PLN-SS01_SL03-000001 (Appendix A)
- monitoring asset response (deflections and cracks to elevations), in accordance with SCSjv Contractors Monitoring Plan - 22-24 Park Village East - Asset Protection Euston - APD-ESCT-02, Document no.: 1MC03-SCJ-GL-PLN-SS01_SL03-000003 (Appendix B),

7.3.3 Both elements of the additional monitoring will:

- provide asset baseline data
- verify if asset is behaving as predicted in the Phase 3 GMA, prior, during and after construction
- provide early warning that initiates timely interventions required to avoid potential harm to the asset, in accordance with an established hierarchy of trigger values linked to a

monitoring action plan (refer to section 8.3).

7.3.4 Ground movement and asset specific data will be reviewed in combination to:

- re-calibrate trigger values if ground movement data/asset specific obversions are not consistent with Phase 2/3 GMA predictions.
- update the monitoring action plan to make appropriate adjustments for timing and type of preventative/mitigation measures and implementation in sequence with key construction trigger activities.

7.3.5 In accordance with HS2 Technical Standard - Civil Engineering Instrumentation and Monitoring (HS2-HS2-CV-STD-000-000004), monitoring will continue until the rate of settlement (or heave) is equal to or less than 2mm per annum (as determined by a minimum of four readings over a period of 4 months). The rate considered will exclude seasonal effects. For third-party assets, the cessation of monitoring will be subject to agreement with the third party.

7.4 Preferred monitoring system

7.4.1 Subject to site access, baseline data gathering will be a combination of manual and automated data logging.

7.4.2 Manual and fully/part automated monitoring systems have been considered for measuring vertical settlement and horizontal displacement to the building. Instrumentation has been selected so that different options remain available should circumstances require a change in method:

- fully automated system would provide data enabling movements to be tracked hourly and daily. A secure set-up arrangement is required to ensure no loss of visual and digital connectivity over the extended timescales that monitoring is required to operate. It could also require instrumentation that has a greater visual presence.
- a manual system relies on brief regular (weekly/monthly) access to the property (including private outdoor space) to collect data using a mechanical Total Station to read measurements from reflective prisms attached to the building. It produces a less frequent record of building movements but is less constrained by connectivity and only requires discrete instrumentation attached to the property.

7.4.3 The risk of interruptions to connectivity resulting in loss of continuity in monitoring data and the level of intrusion affecting residents have been considered. High frequency automated monitoring data recording is not essential, and the predicted effect of ground movement can be effectively and safely managed through a part-manual system.

7.4.4 Primary method of data collection will manually log data, using a mechanical Total Station to read 3D prisms and measure levelling studs.

7.5 Monitoring Specification

7.5.1 Monitoring instruments will measure:

- settlement and horizontal displacement
- relative movement between each side of a crack

7.5.2 Primarily 3 D prisms of various sizes (figure 18), precise levelling bolts/studs and crack width gauges will be used. Devices will measure movements affecting both properties that form the semi-detached building elevations. Devices illustrated are typical examples, but specific instruments used may vary according to situation.

7.5.3 Table 4 details the minimum monitoring system instruments required at 24 Park Village East (corresponding arrangements for 22 Park Village East are included for sake of completion). Proposed locations across both properties are shown in full in Instrumentation Design Drawings (Appendices A and B).

Asset/Item	Instrumentation	Monitored parameters	*Number*	Comments	Frequency of data recording
Buildings	3D prism targets on building façades	Settlement Horizontal displacement	16 maximum	Monitoring at locations identified on drawings in Appendix B.	Minimum monthly for baseline monitoring. Increased frequency during construction works adjacent to site TBC.
	Precise levelling stud		17 maximum	Monitoring at locations identified on drawings in Appendix A.	
Pavements	Precise levelling studs	Settlement	9	At 5m C/C along zone of existing settlement and 10m centres.	Minimum monthly for baseline monitoring. Increased frequency during construction works adjacent to site TBC.
Crack width for major crack	Crack width gauge, remote electronic or manual, as agreed with contractor and Visual Inspection engineer.	Change in crack width	TBC	Locations as shown on drawings in Appendix A. Potential for additional locations where further cracks are identified. Cracks to be monitored to be selected by contractor	Remote read out to central computer or manual readout, depending on accessibility and as agreed with contractor and

				and Visual Inspection engineer. Cracks to be monitored separately in the horizontal and vertical directions (not perpendicular to the crack).	Visual Inspection engineer
	All frequencies to be adjusted according to progress of works and movement trends. Changes to be proposed by the Engineering Manager for discussion and agreement at Monitoring Review meetings.				

Table 3- Instrumentation specification

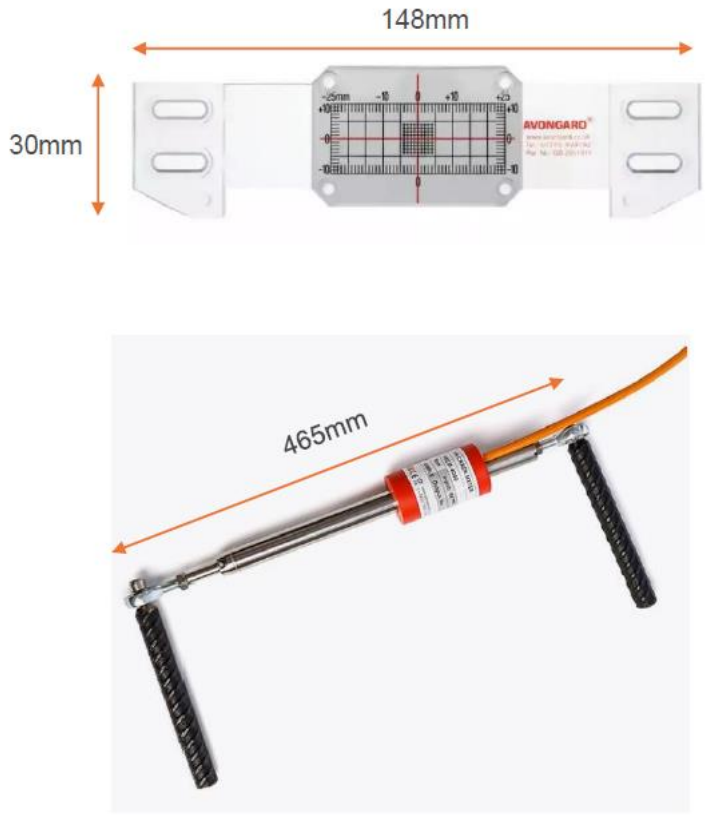
Building

7.5.4 3D prisms (data recorded using mechanical Total Station) attached to external walls at the top and bottom of each façade. (If colour options can be sourced and are available, instruments that best match the external building appearance will be installed).

Figure 18- Example of a 3D prism

On appearance, internal and external cracks will be monitored using tell tales or monitoring studs (figure 19).

Figure 19 Example manual crack monitor (top) and automatic crack sensor (bottom)



Ground surface

7.5.5 Settlement of the external spaces within the influence zone of the HS2 works will be monitored by means of precise levelling studs, at 5m or 10m centres.

7.6 Installation, maintenance, removal and repair

Location

7.6.1 Instrument locations shown in Appendix A and B are approximate and will be adjusted as necessary by the sub-contractor, depending on the as found conditions and the owner's agreement. Final locations for prisms will provide good visibility to the Total Stations.

Installation

7.6.2 All works to comply with hold point procedures, including 'Permits to Drill' as detailed in:

- Method Statement and Risk Assessment - Installation and Monitoring of Instrumentation and Monitoring on Parkway Third Party Assets - Document no.1MC03-SCJ_SOU-CL-MST-SS01_SL03-000006.

- Task Briefing Sheet - Installation and Monitoring of Instrumentation and Monitoring equipment at Edinboro Castle - EUSTON CAVERN SHAFT - Document No. 1MC03-SCJ_SOU-CL-REC-SS01_SL03-000012.

7.6.3 Instruments attached to the building will be firmly secured in line with the manufacturer's instructions to ensure effective monitoring and accurate measurements throughout the required period of operation. This is nominally taken as a minimum of 5 years, but total duration will be determined in line with the criteria as required under HS2 Technical Standard - Civil Engineering Instrumentation and Monitoring (HS2-HS2-CV-STD-000-000004).

7.6.4 Instrument fixings that require bolting to the building will employ the minimum number of drilling points to comply with safety requirements and ensure effective operation of the instrument.

7.6.5 Drilling will take place into plain stucco surfaces or into exposed brickwork mortar joints. All drill locations will avoid decorative mouldings and stringcourses. Location of fixing points will avoid proximity to edges (i.e., less than 80mm) or areas of fragile render, which could result in surface spalling or excessive damage to surface finishes. This applies to all edges, including those created by deep stucco channels that imitate masonry joints.

7.6.6 Holes of 8-10mm diameter will be drilled at a maximum depth of 50mm and fitted with an expansion sleeve or nylon plug. Stainless steel screws and washers are to be used, to ensure durability and prevent staining.

7.6.7 The sub-contractor's task specific Method Statement and Risk Assessment (RAMS) will include a description of the listed asset and define hold points to ensure implementation of control measures for working on and in its proximity, as detailed in the approved HAMS and SCSjv generic Method Statement and Risk Assessment - Installation and Monitoring of Instrumentation and Monitoring on Parkway Third Party Assets - Document no.1MC03-SCJ_SOU-CL-MST-SS01_SL03-000006. Prior to installation work commencing, a copy of the sub-contractor's RAMS will be provided to the London Borough of Camden Conservation team and Historic England.

7.6.8 A Toolbox Talk will be issued to all those working on the asset at the start of the shift and a SCS heritage specialist will undertake regular inspections and oversee installation work.

Removal

7.6.9 Following completion of monitoring all instrumentation and fixings will be removed and the fixing holes filled to match the surrounding surface render/mortar:

- clean surface and remove loose render/mortar.
- new mortar to match the colour of existing mortar/render.
- point and form mortar joints/rendered surfaces to match existing profiles.
- repaint where required, to maintain a consistent colour and texture.

Access

7.6.10 Careful consideration will be given to access systems for installation and removal of monitoring instruments that avoids the use of scaffolding directly tied to the listed structure. Alternatives include mobile elevated working platforms (MEWPs), cherry pickers and freestanding platforms.

7.6.11 However, given the constraints of the properties and disruption to residents, a temporary fixed scaffold may be the only viable solution. Careful installation and remedial work will minimalize any permanent visual impact of any scaffolding works. Scaffold contractors will agree a fully detailed design specification for the listed building.

Scaffolds

7.6.12 Scaffold access systems, if required will be designed to minimise harm to the listed asset while providing safe access at height to install monitoring devices.

7.6.13 All HS2 scaffolding works are carried out in accordance with SG4:15 – Preventing falls in scaffold operations7. Within these guidelines it states that "Scaffolds must be erected in accordance with the relevant British and European Standards and Technical Guidance (e.g. NASC TG20) so that they are adequately stable. Where ties and stability measures (e.g. buttressing, kentledge, guys and anchors etc.) are required they should be installed and removed as work progresses to ensure optimum stability against overturning or collapse of the structure". To comply:

- there will be a maximum of 2no. fixings per floor level at first and second (where appropriate).
- fixings will not be inserted into sensitive features such as decorative stucco, cornicing, window or door architraves or pilasters.
- where possible, fixings will not be aligned horizontally or vertically so that when the scaffold ties are removed, there is not an uncharacteristic regular pattern of repair.
- where inserted into exposed brick work the ties will be located into the centre of a brick to minimise the damage to only one brick in each location unless the fixing can be fitted into a mortar joint without risk of damaging adjacent bricks on insertion or removal.
- the scaffold frame will be self-supporting, with a majority of the load being applied vertically through the standards (uprights) down to the pavement (up to a maximum of 14kN), however due to the above factors, tie bars to the façade must be used to protect against additional winding/lateral loads.
- scaffold will be constructed in phases, from basement to ground floor and ground floor to first floor etc. The scaffold itself will not be tied into the façade until the pull-out tests to the anchors have been carried out at each level to

guarantee load capabilities.

- the tie system to be used on site is an M12 Diameter Excalibur dual fixing. The applied shear load to each anchor will be 2.10kN / 2 anchors = 1.10kN x 125% (initial safety factor) = 1.375kN, the equivalent of around 150KG. To ensure the scaffold is safe to work on the ties need to be tested over and above this figure. The fixings are therefore tested prior to tie installation, up to 3.5 KN (the equivalent of around 350kg). The results of the pull test therefore have a factor of safety of around 2.5x. Only once the pull test figure of 3.5KN is reached and the anchor is secure, shall the scaffold be tied.
- ties will be drilled into external brickwork using a rotary percussion SDS drill and tightened using a handheld ratchet spanner.
- Once the installation is complete, the scaffolding will be struck by removing the ties from the brickwork and removing the scaffold board and frame. All tube and fittings will be removed from the tie bars and the 12mm Excalibur bolts will be removed using a ratchet spanner and 8mm socket.
- Fixing locations will be recorded by the Contractor and remedial repairs will be undertaken as described in 7.6.9.

8 Conservation Management

8.1 Visual Inspection

8.1.1 The property will be visually inspected by an appropriately experienced structural engineer Inspections will occur monthly during or after critical construction activities predicted to affect the property. A report will be produced and re-issued for each inspection so that each visit is recorded in a single document.

8.1.2 This report will include high-resolution photographs supplemented by sketches as required, detailing all visual and measured changes, such as:

- new cracks or enlargement of existing cracks.
- evidence of spalling of masonry or plaster.
- any other new defects.
- signs of new water ingress.
- evidence of subsidence.

8.1.3 The frequency of visual inspections may increase in response to Monitoring Trigger Levels.

8.1.4 Change in frequencies of the visual inspections are to be confirmed at the regular SCSjv Monitoring Review Meetings.

8.2 Trigger Values

8.2.1 Trigger values are based on the Phase 3 GMA of HS2 permanent works only (i.e. excludes temporary works). Seasonal and daily variation due to background environmental effects will be considered when applying the trigger values.

8.2.2 Trigger values for building crack widths are:

- Construction Alert – commence monitoring upon noting first emergence of crack/defect.
- Green – 3mm
- Amber – 5mm
- Red – 15mm
- Numerical Black triggers are not applicable for these assets.

8.2.3 No trigger levels are set for levelling studs recording ground movements.

8.3 Monitoring Action Plan

8.3.1 The Monitoring Action Plan includes procedures for:

- the production, assurance, interpretation, and presentation of monitoring data.
- actions to be taken by specified parties in the event of monitoring trigger values being exceeded.
- actions to be taken in the event of interruption to monitoring during the construction phase (e.g., due to monitoring system malfunctions).
- arrangements for regular reporting on the items detailed above to the London Borough of Camden Conservation team and Historic England.

8.3.2 The following monitoring actions are to be taken at the breach of trigger levels:

- Green – review frequency of visual inspection.
- Amber – increase frequency of visual inspection, review movements of the asset and crack widths against prediction of movement and update subsequent predictions to account for movement. Cracks that reach amber trigger level should be exposed (stucco render/plaster removed in a 200mm x 200mm zone and masonry inspected).
- Red – increase frequency of visual inspections. Review specific cracks and assess stability of building. Introduce temporary works if required.

8.3.3 The structural engineer inspecting the properties will routinely assess the building for stability and safety and recommend any temporary measures that may be immediately required, regardless of whether instrument trigger levels are met.

8.3.4 Any breach of trigger levels requiring temporary works will be reported and temporary works designs issued to London Borough of Camden Conservation team and Historic England for - information prior to works proceeding.

8.4 Conservation (repair) schedules

8.4.1 All required repairs will follow the design principles, standard brief, specification, technical details and safe working practices described in The Crown Estate Guidelines and Specification to Architects for the Regent's Park, Kensington Palace Gardens, St. James's, Pall Mall South, Haymarket and Lower Regent Street Residential and Commercial Estates 7th Edition.

8.4.2 A conservation (repair) schedule will be prepared prior to installation of monitoring instruments and subsequently maintained as planned actions are updated. The conservation (repair) schedule will be routinely reviewed until monitoring requirements have been fully met, instrumentation removed, and all necessary repairs completed.

8.4.3 The conservation (repair) schedule will include:

- identification of the property.
- a list of all repair items required, to be described room-by-room or by reference to external elevation, including reference to the Inspecting Engineer's and other specialist reports and requirements.
- an inventory of the historic items, including fixtures and fittings to be preserved or restored.
- programme and timescale allowed for the works.
- the standard specification for workmanship and materials including painting and stucco repairs.
- a list of drawings that are approved by leaseholder/freeholder.
- details of the monitoring procedure for the work, including the contact details of a Conservation Consultant Architect who will confirm works have been carried and completed in accordance with The Crown Estate covenants included in the lease or building agreement.

8.4.4 Other than the drilled bolt fixing holding the monitoring instruments in place, typical damage resulting from the tunnelling works is expected to be cracks within the masonry walls perpendicular to the street.

8.4.5 The Crown Estate Guidelines and Specification to Architects describes a typical repair strategy as:

- remove surrounding render to check for propagation of crack within masonry.
- cracks <5mm should be infilled/repointed
- cracks greater than 5mm will have mortar joints raked out, tie-bars installed across the crack and infilled/repointed.
- render/mortar composition/type to be determined and matching material reapplied to complete repair.
- internal and external redecoration.

8.4.6 All conservation (repair) schedules and detailed design (technical drawings and RAMS) will be issued to London Borough of Camden Conservation team and Historic England for review and comment prior to works proceeding.

9 Heritage Conservation Summary

9.1.1 Installation of monitoring instruments is a temporary arrangement to ensure accurate monitoring of the heritage asset prior to, during and following HS2 permanent construction works. It is a precautionary procedure to identify ground movements and resulting building structural responses so that appropriate measures to protect the asset can be deployed and engaged to prevent potential systemic or structural harm that may result in loss of serviceability and/or stability and impact to heritage significance.

9.1.2 Specifically, monitoring instruments will provide data to inform decisions on managing and mitigating effects on heritage assets during the planned HS2 tunnelling operations, providing a record of ground movements that will:

- observe and record changes affecting the building to:
  - check and validate modelled predictions
  - calibrate mitigation responses with the sequence of construction activities
- ensure interventions required to mitigate potential harm to heritage assets are undertaken in timely accordance with an established hierarchy of trigger values and related pre-planned actions.

9.1.3 Installation of monitoring instruments does not result in loss of heritage significance and offers specific protections and benefits as part of a conservation management process.

9.1.4 There is negligible harm to historic fabric because:

- monitoring instruments are to be installed with minimum fixings.
- all devices will be removed on completion of monitoring requirements and there are no permanent additions or alterations to the listed building.

9.1.5 The temporary visible presence of monitoring devices does not change the contribution of setting to the significance of the heritage asset. Instrument visibility is limited by the minimum use of devices required to meet the monitoring requirements, retaining the optional use of more intrusive devices that will only be deployed if circumstances require additional monitoring capabilities.

9.1.6 Following completion of HS2 asset protection measures there will be no permanent change to setting.

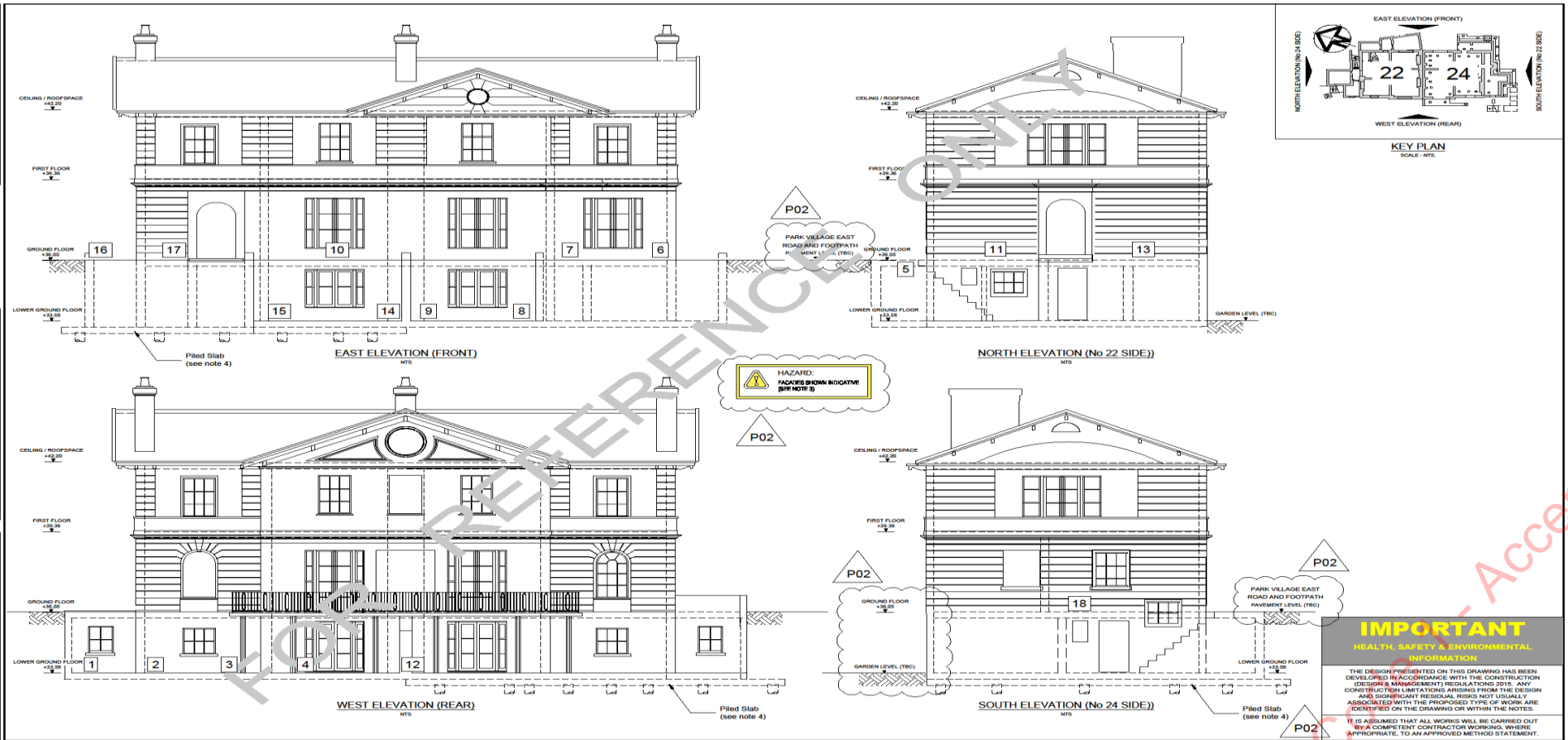
10 References

Table 4- References

Title	Reference
Atlas InSAR Ground Displacement Monitoring HS2 S1S2 East Variation of Works Historical Study	Sixense, November 2022
Byrne Looby (2021), Surveys for Design Assessment [Heritage] 22 Park Village East, London, NW1 7PZ, SCSMW_03265	1MC03-SCJ_OTB-PM-REP-S000-000282
Fielden + Mawson (2023) Historic Building Report & Impact Assessment	1MC03-SCJ_HWS-AR-REP-SS01_SL03-000001
Guidelines and Standard Specification to Architects for the Regent's Park, Kensington Palace Gardens, St. James's, Pall Mall South, Haymarket and Lower Regent Street Residential and Commercial Estates	The Crown Estate, Seventh Edition January 2014
Hewson (2022) 22 Park Village East, Regents Park, NW1 7PZ Desktop Structural Appraisal	1MC03-SCJ_HWS-ST-REP-SS01_SL03_000001
Hewson (2023) Asset Specific Mitigation Designer's Monitoring Plan, 22-24 Park Village East, Asset Protection Area East-Euston Throat West Buildings Package 2 ADP-ESCT-02	1MC03-SCJ_HWS-ST-PLN-SS01_SL03-000001
Hewson (2024) 22 Park Village East, Regents Park, NW1 Existing Structure and Proposed Alterations Report	1MC03-SCJ_HWS-ST-REP-SS01_SL03-000002
Hewson (2024) Asset Specific Mitigation Designer's Monitoring Plan, 22-24 Park Village East, Asset Protection Area East-Euston Throat West Buildings Package 2 ADP-ESCT-02	1MC03-SCJ_HWS-ST-PLN-SS01_SL03-000001
HS2 Information Paper C3:Ground Settlement	
HS2 Technical Standard - Civil Engineering Instrumentation and Monitoring	HS2-HS2-CV-STD-000-000004 P04
HS2 Technical Standard - Ground movement and assessment from underground construction	HS2-HS2-TN-STD-000-000005 P03
HS2 Specification for Civil Engineering Works' Series 4500 – Instrumentation and Monitoring	HS2-HS2-CV-SPE-000-014500
HS2 Technical Standard – Sound, Noise and Vibration Instrumentation and Monitoring · High Speed Rail London-West Midlands	HS2-H S2-EN-STD-000-000009
HS2 Environmental Minimum Requirements Annex 1: Code of Construction Practice https://www.gov.uk/government/publications/environmental-minimum-requirements	CS755 02/17
John Nash and Park Village	Tyack, Geoffrey 1993 The Georgian Group Journal vol. III, pp68-74.
SCSjv Instrumentation and Monitoring Statement S1 and S2	1MC03-SCJ-CL-STA-S001-000001
SCSjv Phase 3 Ground Movement Assessment Report - Building Assessment Euston Cavern and Shaft - Euston Throat West S1	1MC03-SCJ_SDH-GT-REP-SS01_SL03-000018 C03.2

Title	Reference
SCSjv Phase 3 Ground Movement Assessment Report - 22-24 Park Village East - Euston Throat West S1	1MC03-SCJ_SDH-GT-REP-SS01_SL03-000063
SCSjv Designers Monitoring Plan - Area East Buildings Package 2 (EB2) - S1	1MC03-SCJ_SDH-GT-PLN-SS01-000002
SCSjv Contractors Monitoring Plan - 22-24 Park Village East - Asset Protection Euston - APD-ESCT-02	1MC03-SCJ-GL-PLN-SS01_SL03-000003
SCS Asset Protection Management Plan	1MC03-SCJ-EN-PLN-S000-000002
SCSjv Phase 1 Geotechnical Desk Study	1MC03-SCJ_SDH-GT-NOT-SS01_SL03-000014
SCSjv Technical Note - Phase 2 Geotechnical Desk Study – Park Village East Wall,	1MC03-SCJ_SDH-GT-NOT-SS01_SL03-000015
The Crown Estate Guidelines and Standard Specification to Architects for the Regent's Park, Kensington Palace Gardens, St. James's, Pall Mall South, Haymarket and Lower Regent Street Residential and Commercial Estates, Seventh Edition	Purcell (2014)
Watts (2021), WP166 Pre-construction Condition Surveys, 22 Park Village East, London, NW1 7PZ, SCSMW_03265	1MC03-SCJ_WGL-PM-REP-S000-000369, SW1-100
Watts (2023) WP166 Preconstruction Condition Survey Report - 22 Park Village East London NW1 7PZ	1MC03-SCJ_WGL-PM-REP-S000-005086_C02

Appendix A – Instrumentation Design Drawings (as proposed in Asset Specific Mitigation Designer's Monitoring Plan, 22-24 Park Village East, Asset Protection Area East-Euston Throat West Buildings Package 2 ADP-ESCT-02 Document no.: 1MC03-SCJ_HWS-ST-PLN-SS01_SL03-000001)



KEY PLAN
SCALE - NTS.

DO NOT SCALE

A1

0 10 100

CAD ref: H531-HCL-XX-XX-DR-S-0790.DWG
Form ref: UK-FM-DM-04-01-02

status	drawing number	rev
S0	H531-HCL-XX-XX-DR-S-0790	P02

NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS IN METRES AT ORDNANCE DATUM UNLESS NOTED OTHERWISE.
3. ELEVATIONS SHOWN HERE SUBJECT TO A TOPOGRAHICAL SURVEY TO CONFIRM LOCATION OF OPENINGS, INCLUDING HEIGHT AND WIDTH.
4. THE PILED SLAB INSTALLED IN 2017 TO 24 PARK VILLAGE EAST IS SHOWN INDICATIVELY.
5. FOR DETAIL AND SCHEDULE OF INSTRUMENTATION SEE DRAWING H531-HCL-XX-XX-DR-S-0791.
6. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DESIGN MONITORING PLAN DON No 1MC03-SCJ_HWS-ST-PLN-SS0_SL03_000001 PREPARED BY HEWSON CONSULTING ENGINEERS AND ISSUED ON 7th JUNE 2023.

rev	description	by	date	chk'd	auth
P02	Changes clouded	MT	23/04/24	PJP	PJP
P01	Issued for Information	MT	12/01/23	PJP	PJP

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client: SKANSKA COSTAIN STRABAG

project: HS2

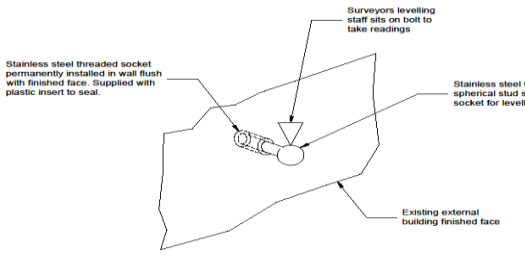
IMPORTANT
HEALTH, SAFETY & ENVIRONMENTAL INFORMATION

THE DESIGN PRESENTED ON THIS DRAWING HAS BEEN DEVELOPED IN ACCORDANCE WITH THE CONSTRUCTION (DESIGN & MANAGEMENT) REGULATIONS 2015. ANY CONSTRUCTION LIMITATIONS ARISING FROM THE DESIGN AND SIGNIFICANT RESIDUAL RISKS NOT USUALLY ASSOCIATED WITH THE PROPOSED TYPE OF WORK ARE IDENTIFIED ON THE DRAWING OR WITHIN THE NOTES.

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

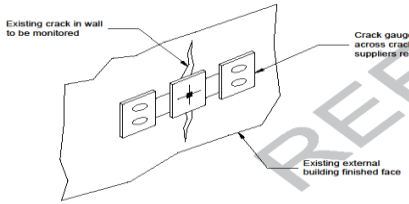
title: 22-24 Park Village East Supplementary Instrumentation for Monitoring Movements Sheet 1 of 2

sheet size	original scale	designed/drawn	checked	authorised
A1	As Shown	PJP/MT date 08/01/23	PJP date 08/01/23	PJP date 08/01/23



DETAIL 1 - BOLT
NTS

HAZARD:
TAKE CARE TO MITIGATE DAMAGE DURING INSTALLATION. DAMAGE TO BE MADE GOOD.
REINSTATE FINISHES ON REMOVAL.



DETAIL 2 - GAUGE
NTS

HAZARD:
TAKE CARE TO MITIGATE DAMAGE DURING INSTALLATION. DAMAGE TO BE MADE GOOD.
REINSTATE FINISHES ON REMOVAL.

P02

TABLE 1 : SCHEDULE OF PROPOSED INSTRUMENTATION TO MONITOR THE EXISTING BUILDING WITH HERITAGE STATEMENT

INSTRUMENTATION		RATIONALE	NATURE AND PHASE OF BUILDING FABRIC		IMPLICATIONS FOR HERITAGE SIGNIFICANCE
REF	TYPE		REMOVED AND REINSTATED	EXPOSED AND RETAINED	
1	BOLT	FACADE (MM)	TBC	TBC	TBC
2	BOLT	FACADE (MM)	TBC	TBC	TBC
3	BOLT	FACADE (MM)	TBC	TBC	TBC
4	BOLT	FACADE (MM)	TBC	TBC	TBC
5	BOLT	NORTH	TBC	TBC	TBC
6	BOLT	EAST	TBC	TBC	TBC
7	BOLT	EAST	TBC	TBC	TBC
8	BOLT	LIGHTWELL**	TBC	TBC	TBC
9	BOLT	LIGHTWELL**	TBC	TBC	TBC
10	GAUGE	AT VISIBLE CRACK TBC	TBC	TBC	TBC
11	BOLT	NORTH	TBC	TBC	TBC
12	BOLT	FACADE (MM)	TBC	TBC	TBC
13	BOLT	FACADE (MM)	TBC	TBC	TBC
14	BOLT	LIGHTWELL	TBC	TBC	TBC
15	BOLT	LIGHTWELL	TBC	TBC	TBC
16	BOLT	ON TOP OF RETAINING WALL	TBC	TBC	TBC
17	BOLT	EAST	TBC	TBC	TBC
18	BOLT	FACADE (MM)	TBC	TBC	TBC

FACADE (MM) = FACADE MOVEMENT MONITORING

** MONITORING SUBJECT TO FINAL LOCATION CONFIRMATION

HAZARD:
ACCESS TO INSTRUMENTATION REQUIRED (TBC)

IMPORTANT
HEALTH, SAFETY & ENVIRONMENTAL INFORMATION

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P02

NOTES
1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS IN METRES AT ORDNANCE DATUM UNLESS NOTED OTHERWISE.
3. FOR ELEVATIONS SHOWING LOCATIONS OF INSTRUMENTATION REFERENCED IN TABLE 1 SEE DRAWING H531-HCL-XX-XX-DR-S-0790

rev	description	by	date	chk'd	auth
P02	Changes clouded	MT	23/04/24	PJP	PJP
P01	Issued for Information	MT	12/01/23	PJP	PJP

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client: SKANSKA COSTAIN STRABAG
project: HS2

title: 22-24 Park Village East Supplementary Instrumentation for Monitoring Movements Sheet 2 of 2

sheet size	original scale	designed/drawn	checked	authorised
A1	As Shown	PJP/MT date 08/01/23	PJP date 08/01/23	PJP date 08/01/23

suitability	drawing number	rev
S0	H531-HCL-XX-XX-DR-S-0791	P02

rev P02 | drawing number H531-HCL-XX-XX-DR-S-0791 | suitability S0 | DO NOT SCALE | A1 | CAD ref: H531-HCL-XX-XX-DR-S-0791.DWG | Form ref: UK-FM-DM-04-01-02

Appendix B – Instrumentation Design Drawings (as proposed in SCSjv Contractors Monitoring Plan - 22-24 Park Village East - Asset Protection Euston - APD-ESCT-02, Document no.: 1MC03-SCJ-GL-PLN-SS01_SL03-000003)

Prism Monitoring Design:

Appendix A – Monitoring Plans for 22-24 Park Village East
Document Title: Contractors Monitoring Plan – 22-24 Park Village East – Asset Protection Euston
Document Number: 1MC03-SCJ-GL-PLN-SS01_SL03-000003

Key:

- 3D Prism

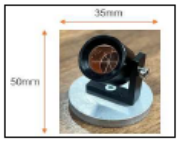

Figure 1: 22-24 Park Village East – East elevation

Figure 2: 22-24 Park Village East – North elevation (No. 22 side)

Prism Monitoring Design:

Appendix A – Monitoring Plans for 22-24 Park Village East
Document Title: Contractors Monitoring Plan – 22-24 Park Village East – Asset Protection Euston
Document Number: 1MC03-SCJ-GL-PLN-SS01_SL03-000003

Figure 3: 22-24 Park Village East – West Elevation (Rear)
No additional monitoring proposed.

Figure 4: 22-24 Park Village East – South Elevation (No. 24 side)