

STRUCTURAL CONDITON INSPECTION



Client: **John Edward Crowther (Holdings) PLC**

Site Address: **New Mills
Brougham Road
Marsden
Huddersfield
HD7 6AZ**

Project Number: **23421**

Report Reference (Revision): **23421-DCE-XX-XX-T-S-003-P01**

Date: **19/09/2024**



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SITE PHOTOGRAPHS

MARKED PLANS

Revision	Date	Author	Checked by;	Comments
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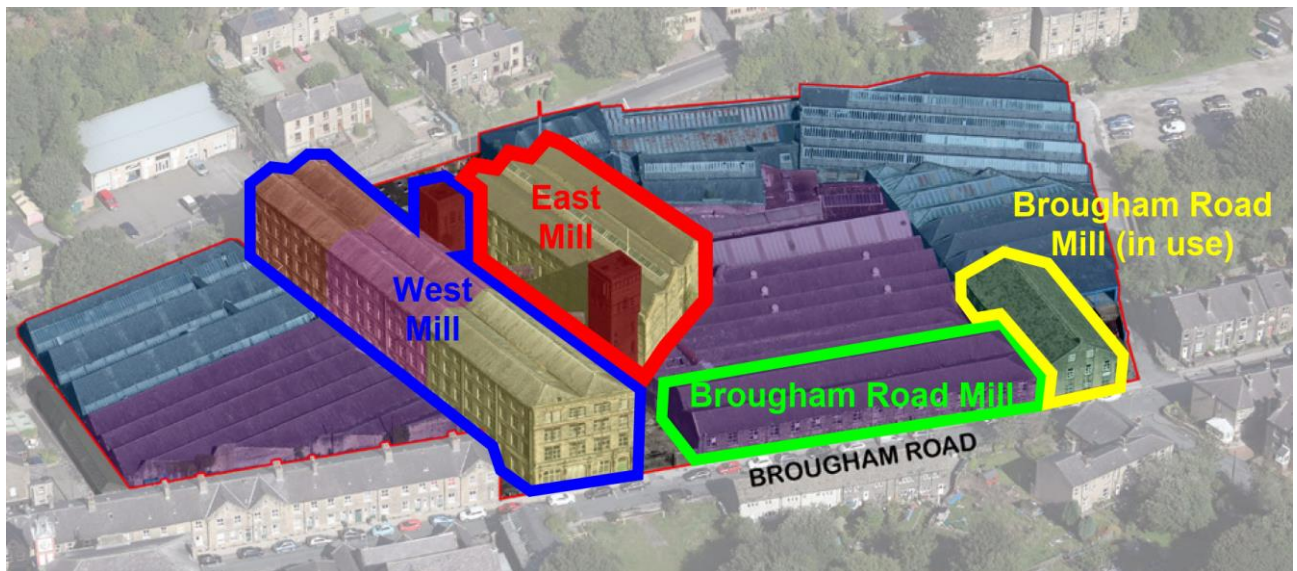


1.0 BRIEF

Instructions were given to this office by Philip Crowther of John Edward Crowther (Holdings) PLC, to carry out a structural condition inspection of New Mills in Marsden.

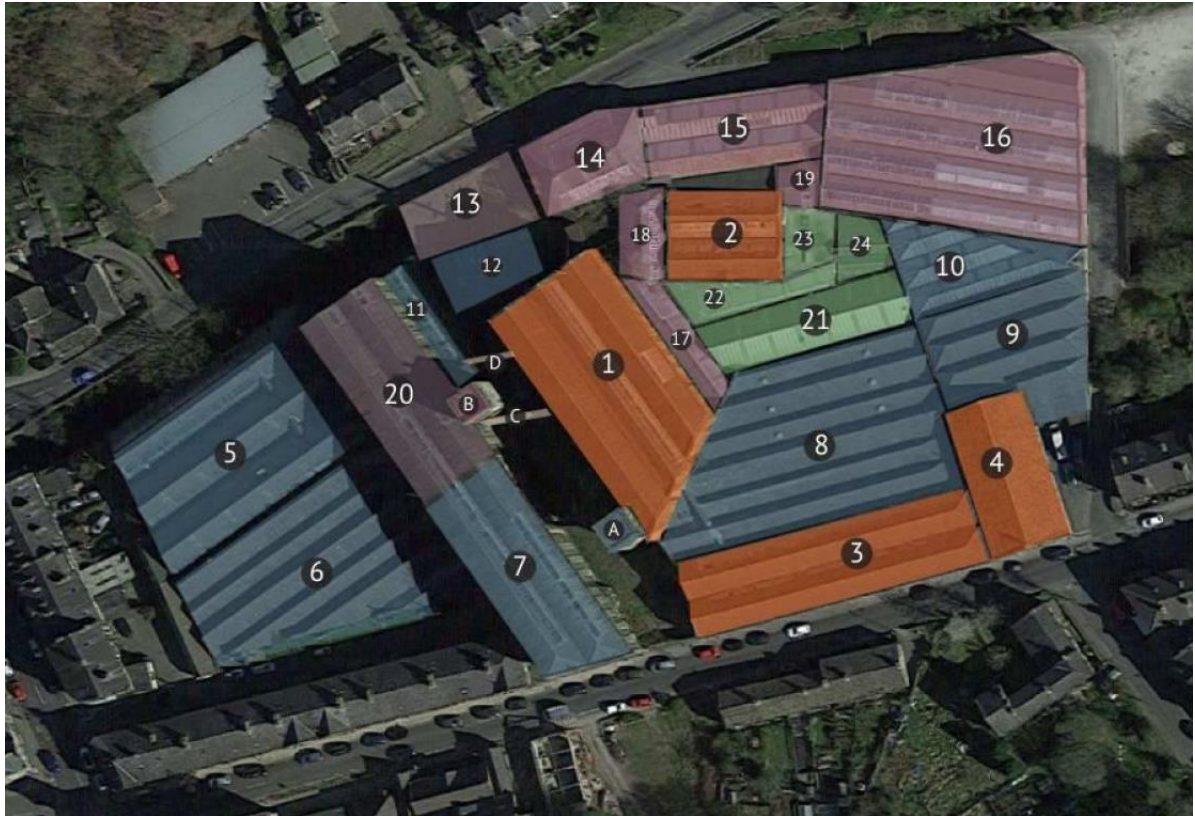
The brief was to undertake a visual structural condition inspection of the East Mill, the West Mill and the Brougham Road Mill Buildings, with a view to report on the anticipated remedial works required to bring these derelict buildings back to use. These buildings have been identified as those of most significant heritage value and have therefore been the focus of this inspection. Their approximate extents within the wider development site extents are highlighted in the image below.

The only part of the New Mills buildings complex still in use is the Brougham Road Mill located on the corner of Brougham Road and Mill Road. This building is similarly highlighted below but has not been inspected as part of this report (it is currently in use as commercial premises, so is in far better condition than the wider site buildings, but it is anticipated that there will also be a requirement for remedial works to refurbish this building in due course).





The buildings in the view above are referenced as 1, 20/11, 3 and 4 respectively in the heritage reporting information.



The purpose of this report is to advise of the wider implications of current condition of the buildings and the feasibility of retaining parts of them in the overall redevelopment proposals.

It is understood that the other buildings on site are accepted as requiring demolition to facilitate the redevelopment works. There is potential for partial demolition to the western end of the Brougham Road mill buildings (ref 3 in the heritage reporting information) where the remaining derelict and operational building areas (ref 3 and 4 in the heritage reporting information) will also be retained.



2.0 LIMITATIONS OF INSPECTION AND REPORT

- 2.1 Dudleys Consulting Engineers have prepared this report for the sole use and benefit of the client and/or his appointed agent only and no liability is accepted to any third party who may seek to rely on the whole or any part of this.
- 2.2 Comments are restricted to those elements of the structure which are load bearing and/or provide stability to the buildings, and to the external envelope. Non-structural items of interior or exterior fabric are excluded, except where deterioration or damage to such items may have caused or may in the future cause, damage to or loss of integrity of the structure.
- 2.3 Comments are restricted to those elements of the structure which were readily available for visual inspection. No exposure of foundations took place.
- 2.4 The inspection took place from the floors within the building seeking to identify any structural aspects readily visible from each level.
- 2.5 Comments are restricted to those elements of the structure which were readily available for visual inspection. No exposure of foundations took place.
- 2.6 It is not practical to itemise every defect and minor defects which are obvious to the layman are not generally noted unless they are symptomatic of a more serious underlying structural fault.
- 2.7 The inspection does not include any services in or to the building and the services of appropriate experts should be sought if deemed necessary.
- 2.8 We have not carried out an exhaustive survey as to whether hazardous or deleterious materials are used in the construction of buildings.
- 2.9 The inspection of external building faces was severely limited due very limited access afforded by surrounding features and/or adjoining buildings.

3.0 DATE OF INSPECTION

- 3.1 The property was inspected by the undersigned on Thursday the 1st August 2024. The weather was dry with clear skies.



4.0 OBSERVATIONS

4.1 East Mill

- 1) The building comprises a stone clad former mill building, with three bay pitched roof arrangement. General supporting structure is formed with cast iron columns, timber beams and timber flooring (general floor construction, at third floor level comprises 1" thick floorboards with 9" deep joists beneath). The building is built into a sloping site and appears to have a partial lower ground floor level, although the full extent of which is unknown as very limited inspection of this lower ground level was permissible at the time of our inspection.
- 2) There is a main stair/lift access tower to the southwest corner of the building being the main circulation space. In addition to this, there are several elevated walkways between the East and West Mill buildings at various levels.
- 3) The building adjoins other buildings at ground floor level where large openings between them that would require infilling post demolition (of adjoining buildings) to create a weatherproof envelope to the main East Mill.
- 4) The building is five storeys overall with a partial lower ground floor (towards the northern end of the building, where ground levels drop away towards the watercourse).
- 5) Roof timbers are typically in poor condition with water ingress evident throughout and wet rot to timber rafters, purlins and trusses to varying degrees. The timber supporting elements beneath the central valley gutter line is in particularly poor condition, with numerous rotten timber ends that have partially failed (crushed).
- 6) There is cracking present to masonry bed joints across all window heads and corners of the third-floor gable walls, with some of these cracks in excess of 25mm width. There are similar cracks on both Northern and Southern gable end walls, primarily radiating from window heads where narrower elements of masonry are located.
- 7) Large diameter air handling extract ductwork passes through the third floor and roof on the northeastern side of the gable elevation.
- 8) At the southern end of the building facing Brougham Road, there appears to be more significant areas of leaks from the roof and increased water ingress with more decay evident to the truss and beam ends supported by cast iron column shoes. Similarly, floorboards are suffering from rot, they have also warped due to the water ingress, causing significant undulation in the floor surface.
- 9) Timber frame windows are all in poor condition.
- 10) It is understood that one of the parapet coping stones from the stair tower dislodged and fell through the roof and third floor level, causing localised damage which has since been patch repaired with temporary propping.



- 11) In the vicinity of the stair core there are several cracked lintels and cill stones.
- 12) The upper-level link footbridge to the West mill is severely corroded, with heavy delamination of the steel plates. Inspection from within was not possible at the time of our visit however, these are considered to be dangerous due to the thin sheet metal construction form, especially given the amount of corrosion observed.
- 13) Above the main third floor level there are two additional levels within the stair tower, the first of which being a timber floor (at approximate window level) and an upper concrete roof deck, supported on steel beams. There is evidence of previous remedial works undertaken in this area, typically comprising crack repairs over heads of the windows, however, there remains further cracking present beneath and adjacent to these repairs (does not constitute crack stitching). Upper deck supporting steelwork is corroded, but close inspection was not feasible. Ends of timber joists to the intermediate floor deck are rotten, as are many of the floorboards over.
- 14) There is considerable corrosion to all steelwork lintels and supporting beams within the stair core area. Cracking to masonry joints is a potential indicator of general movement, however this is more likely to be associated with corrosion of steelwork and resulting expansive forces that have cracked masonry bed joints in the vicinity.
- 15) At second floor level there are numerous structural strengthening remedial works evident to the third floor supporting timber beams over. The first four timber beams have remedial works at beam ends typically comprising a pair of PFCs bolted either side of the primary timber floor beam (with supporting steel plate under to pick up the timber beam and associated steel plate over the top to create a force transfer on the first beam). There is evidence of dry rot present to one of the beam ends in this area.
- 16) On the second beam in (looking north from the southern gable wall, on the western bay) there is a gallows type bracket which appears to be a cast iron section to provide additional support, in addition to the PFCs. It is assumed that these differing strengthening measures were installed at different times. The fifth timber beam in remains in its original condition, whereas the 6th, 7th, 9th and 11th beams all have full length PFCs either side (of the main timber floor beam) with support plates beneath as remedial measures, spanning between outer wall and internal cast iron column. There are also timber wall plates into the side of the timber joist to give extra support to timber joists over.
- 17) There are reasonably significant undulations to the timber floors where there appears to be hard spots around columns and main supporting beam lines with minor settlement of the floor in and around those points. Central sections of the floor have some over boarded areas.
- 18) It is not clear if the remedial strengthening measures were associated with deterioration of the original structural members or if this was associated with former use of the floor to provide additional load capacity, e.g. to support local machinery (there does not appear to be a consistent pattern of deteriorated timber to reflect the strengthening works).



- 19) There are various areas where timber joists have been locally propped by either timber packers off PFC steel supports or steel angles bolted into main timber beams to provide additional bearing sporadically spread throughout the floor.
- 20) In a number of locations, the timber floor boards, joists and beams appear to be suffering from rotten ends. Similarly, where water has presumably tracked down from upper levels on column lines, there are a number of places where rotten timber ends are present around columns below.
- 21) The central bay has remedial PFC strengthening to the 10th timber beam only, whereas the third bay has PFC strengthening to 4th, 10th and 13th timber beams (of 15 beams overall, again notation is from the southern gable wall to northern gable).
- 22) There are signs of further deterioration to primary supporting beams beyond where previous PFC strengthening works have been undertaken, showing signs of further deterioration.
- 23) There is an ACRO prop present in the southwest corner immediately adjacent to the stair core access door, propped off timber sleepers from the floor below, which also appears to be damaged (anecdotal evidence from the building owner has advised this local damage is due to a stair tower parapet stone falling through the floor and lower floors).
- 24) Minor cracking in stairwell continues, generally propagating from locations where steel beams or supports are built into walls which have corroded. Cracking present outside room one on the first-floor level are up to 10mm wide where a steel beam is corroded adjacent to the link foot bridge. Also, there appears to have been adaptations in the construction of the masonry walls in this area.
- 25) There is again an ACRO prop present in the southwest corner, immediately adjacent to the stair core access door, which is further back propping associated with damage noted in point 23 above. This prop is supported directly off a slightly damaged floor and props the floor over.
- 26) The floor of first floor level appears to be largely undamaged from water ingress. This level has a similar pattern of remedial strengthening works to primary timber beams as at level two above with partial length PFCs to first beam. However, for the 2nd, 3rd, 5th and 6th beams there are full length PFCs either side of the timber beams up to interior columns. The 7th beam line has partial PFC supporting the external wall end, the 8th beam line has full length PFC's, the 9th beam line has a timber wall plate to the side of the timber beam supporting joists over. Beam lines 10, 11 and 12 have full length PFCs either side, 13 has a pair of partial length PFCs, 14 has full length PFCs and gallows bracket into the external wall. Beam 15 is an original timber beam for the central beam span. It is noted that the nature of the PFC supports to the first-floor level have not been as carefully introduced, i.e. the second floor PFCs were cut to suit the curved ends of the cast iron column heads, whereas at first floor level, the column heads have often been more crudely cut to create a more compatible square edge.
- 27) At ground floor level the primary timber beams (at ceiling level) appear to have been strengthened with profiled pairs of PFCs throughout.



- 28) There are several bays that link the ground floor level through to the adjacent warehouse areas, which are predominantly open, between masonry piers and will require infilling works if this level becomes an external wall line.

4.2 **Brougham Road Mill**

- 1) The Brougham Road Mill building is a two storey, twin bay mill building, with its ground floor level located below the adjacent Brougham Road pavement level.
- 2) On the northeastern side of the building extents, it is noted that the last seven bays adjacent to the adjoining buildings are open at ground floor level. Construction is of cast iron columns and steel beam framing supports. Partial holes in the first-floor level were noted where there are raised access areas over tanks sunk into the lower ground floor slab.
- 3) At first floor level there are various defects with the roof construction due to water ingress. There are a number of trusses with rotten ends.
- 4) Towards the western end of the mill there is a mixture of brick and stonework construction to the gable end with some minor cracking. Floors in this area have partially failed due to collapsed debris from the ceiling/roof over and are in very poor and dangerous condition.

4.3 **West Mill**

- 1) The building comprises a stone clad former mill building, with two bay duo-pitched roof arrangement. General supporting structure is formed with cast iron columns, timber beams and timber flooring. The building is built into a sloping site and taking Brougham Road as ground floor level, has two partial lower ground floor levels, the full extents of which are unknown due to a very limited inspection of the second lower ground floor level at the time of our inspection.
- 2) There is a main stair and lift access tower to the northeast corner of the building.
- 3) A more recent internal lift shaft has been constructed within the northern section of the building between the lower three floor levels. This is a blockwork shaft, assumed to be load bearing where the timber floor has been trimmed back. The lift pit is filled with water and therefore obscured from inspection.
- 4) The building is adjoined to adjacent buildings at ground floor level and there are large openings between buildings that would require infilling post demolition (of adjoining buildings) to create a weatherproof envelope to the main West Mill.
- 5) The building is five storeys overall with a partial lower ground floor and basement (towards the northern end of the building, where ground levels drop away towards the river).
- 6) The northern riverside gable elevation is in poor condition, particularly in areas adjacent to broken rainwater downpipes.



- 7) There are numerous pattress plates at various levels which are indicative of historic lateral movement to the walls.
- 8) Apparent displacement of the wall is evident just below upper floor level on the single-story former engine room. This appears to be associated with extensive vegetation growth at eaves level, typically propagating from the feature parapet course. In this area, there are numerous displaced and cracked stones and due to mature vegetation, which is anticipated to have extensive root growth within the wall construction and has caused significant damage to the masonry bond.
- 9) Roof level of the West Mill is in particularly poor condition with several large holes through the slate roof covering. The various penetrations through the roof covering have permitted considerable water ingress, with very damp conditions to the general third floor level and particularly river side gable wall. There is also notable water ingress in the vicinity of the central valley gutter, which is likely to be blocked.
- 10) Similarly, to the East Mill, there are numerous areas of cracking and movement at the head of windows at this level. In addition to this, there are indications of minor outward movement of the upper couple of storeys of masonry (of the gable wall towards river). However, it is noted that this was a visual inspection only, from ground floor level.
- 11) Due to the prolonged water ingress, there are numerous instances of timber roof trusses with rotten and failed ends, this is particularly evident within the central valley gutter area. There are two almost completely failed trusses and one valley gutter support beam in the middle of the building, which have subsequently been supported with ACRO props (these props are located beneath the bottom chord of the truss ends immediately adjacent to the supporting column head).
- 12) The pair of stone lintels to the stair core doorway have failed and dropped but remain wedged in place. There is also a steel beam lintel over providing redundancy to support masonry over this opening. The steel beam is heavily corroded.
- 13) A large number of glazing panes to windows are missing.
- 14) The Brougham Road elevation has moved significantly outwards by approximately 50mm. This movement has been stabilized through the introduction of a significant surface fixed propping system. The remedial works comprises pairs of through bolted PFC wailing beams fixed internally and externally for the full length of the gable wall elevation. These are located immediately beneath the roof level and similarly beneath the third-floor level. The restraint beams have then been tied back into the main building superstructure column lines via raking props across two floor levels and also tied into the floor deck construction (extending two bays back into the building).



There is not significant cracking at the return wall ends to the gable, however there is a distinct movement where the wall has displaced laterally compared to where the roof trusses remain seated in their original position, a clear kink in the wall at the head of the windows.

At first floor level, the central steel beam support has pulled away from the wall and there is significant cracking of masonry to the pier.

- 15) The main stair core roof is almost entirely missing. Below this there is significant decay to the intermediate timber floor joists above the third-floor level, which continues to support various redundant equipment.
- 16) The second-floor level of the West Mill contains a number of large penetrations through the floor deck. Generally, these are fenced off with stud walls. Primary beams run through the openings; however, floorboards and joists have been entirely removed. These openings are split into five main runs, four of which are in pairs and combined, extending nearly full length of the building, with just three central bays of floor retained in a continuous deck. This arrangement appears to be associated with the installation of former machinery and overhead gantry that ran through at second floor level, down to first floor level.
- 17) There is a juncture between what is understood to be a newer section of the mill building adjacent to the river, which is constructed with stone piers. This transitions between the two steel link bridges to the east and west mill to become brickwork pier construction (this is understood to be the older Mill building). This transition in ages of the West Mill is similarly evidenced by the central cast iron columns in the assumed newer stone pier section of the mill building featuring cast iron columns with fluted supporting heads and stiffener plates incorporated. Whereas the adjacent cast iron columns in the older brick pier building section have supporting shoes cast at their head, but without any fluted supporting flanges.

This older brickwork construction extends 14 windows from the Brougham Road elevation (which is four windows past the triple stacked steel link bridge arrangement). This change in construction is also reflected in the main steel beams, the ones to the newer section are typically stamped 'Leeds Steelworks' whereas in the older section they are marked 'Dorman Long Middlesbrough'. The steelwork is generally in fair condition.

- 18) Limited corrosion present to the main supporting steel beams, but where this is present, the beam ends (built into supporting walls) are heavily corroded with laminated flanges and causing local spalling and defects to the surrounding stone and steel. This pattern is evident to all the perimeter walls where rainwater downpipes have failed, with water discharging onto the wall.
- 19) On the first-floor level there are cross bracing tie rods to the underside of the floor above where the junction between the newer and older sections of the mill are located. We assume these are tension rods to act in a diaphragm type manner from the older columns. There are twelve internal columns before the Brougham Road elevation that are the older type of construction.



At this level, there is some form of tie rod provision to the underside of the column heads extending the full length of the central column line. These are hit and miss in terms of where fixed to columns and they stop short of the gable walls in the final bay, i.e. not tied into the external walls. It is unclear what purpose this would serve as a structural element; however, these do not appear to be supporting any other plant or equipment. It is possible these are associated with a past use of various machinery in the building at this level.

- 20) The ground floor level of the West Mill building has offices to the Brougham Road end into which access was not available. No access was available to the offices at ground floor level at the Brougham Road end of the West Mill building at the time of our visit.
- 21) There is some standing water on the floors, presumably where water has penetrated through leaks in the roof.
- 22) Towards the river end of the building, there is a good lift that breaks through the floor slab from below, located three bays in from the riverside gable wall. The lift only serves the ground and lower ground floor levels.
- 23) At ground level, the western side of the mill building is nearly open in its entirety, inking into the north light lower-level warehouse. This is assumed to be supported by large cast iron columns and very large steel plate sections, likely to be plate girders of some description, predominantly concealed by masonry.



5.0 RECOMMENDATIONS

- 5.1 Each building should be surveyed by a timber specialist to determine the extents of rot, fungal and insect infestation and timber suitability treated or replaced to their recommendations. The buildings require timber and damp surveys to be undertaken, to inform extents of rotten timbers present and suitability for treatment or if replacement is required.
- 5.2 Below ground drainage CCTV surveys will be required to condition, outfall locations and connectivity of existing drainage infrastructure. In the first instance this will reveal the general condition of existing sewers on site and their suitability for re-use. Beyond this, the further survey works will determine the current impermeable area with positive drainage, location of outfalls (with most assumed to be direct to the watercourse) and the location of the existing foul water drainage connections.
- 5.3 Investigation to be undertaken to confirm if any asbestos containing materials are present on site. This will be required ahead of any demolition works and will need to comply with the requirements of a refurbishment and demolition type survey.
- 5.4 Consideration of a high-level remedial works strategy and associated cost appraisal, if this can be undertaken from information within this report or if a further discussion and clarification is required with the project Quantity Surveyor.

A brief summary of the main observations within this report, consideration is required for:

1) **East Mill:**

- (1) Wholesale replacement of three bay tiled roof and timber rafter support. Given the condition of the main timber purlins and trusses, allowance for replacement/strengthening to approximately 50% of the roof elements is advised.
- (2) Further investigation required to assess vertical alignment of northern gable elevation, due to concerns from ground level of potential outward movement.
- (3) Crack stitch repairs across all window heads and corners of third floor gable walls.
- (4) Various areas of vegetation growth from ledges created by adjoining buildings, link bridges, etc.

2) **West Mill:**

- (1) Wholesale replacement of three bay tiled roof and timber rafter support. Given the condition of the main timber purlins and trusses, allowance for replacement/strengthening to approximately 80% of the roof elements is advised.
- (2) Further investigation required to assess vertical alignment of northern gable elevation (due to concerns from ground level of potential outward movement).



- (3) Rebuilding of the upper two storeys of the Brougham Road gable end elevation, in order to address the lateral movement, which is currently restrained by extensive wailing beams and propping (noting that the parapet stones have already been removed for safety reasons). This work will also require extensive temporary stability propping to facilitate.
- (4) Crack stitch repairs across all window heads and corners of third floor gable walls.
- (5) Various areas of vegetation growth from ledges created by adjoining buildings, link bridges, etc.
- (6) Inspection, cleaning, protecting and local rebuilding of most steel beam end bearings.
- (7) Removal of vegetation at head of old engine room building and re-building of parapet masonry.

3) **Brougham Road Mill:**

- (1) Wholesale replacement of two bay tiled roof and timber rafter support. Given the condition of the main timber purlins and trusses, allowance for replacement/strengthening to approximately 50% of the roof elements is advised.
- (2) Local re-building or demolition of the western end of this building is advised, due to the particularly poor condition of main structural elements in this area, i.e. where roof has partially collapsed and similarly for the first floor beneath, where the structure is now in a dangerous condition.



6.0 CONCLUSIONS

- 6.1 The buildings on site have been derelict for a considerable period and as such, have suffered significant structural deterioration.
- 6.2 The considerable extents of vegetation growth throughout gutter lines and at other locations on the building façade are not to be underestimated, as roots are anticipated to have considerable propagation through masonry bed joints. This will likely require rebuilding of the majority of masonry over window heads at eaves levels and local rebuilding at other areas where vegetation is encountered.
- 6.3 Extensive damage to most timber elements forming the roof structure, which will likely require wholesale replacement. Beyond this, a timber and damp survey is required from a timber specialist to determine the condition of timber elements at lower levels and extents of localised timber decay, and the extents of either remedial work or replacement. Main floor joists were often covered by other timber finishes and general condition was therefore not clear.
- 6.4 The key observations of this report have highlighted that the main masonry superstructure is typically in fair condition, i.e. masonry walls are generally intact without significant cracking and there is little evidence of overt foundation settlement. However, this is to be tempered by large areas of masonry being subject to deterioration from local issues associated with degradation of other elements. For example, at roof level from failing roof coverings/timbers, localised areas of masonry piers due to failing rainwater downpipes, and locally around corroding structural steelwork (due to expansion forces from rusting).
- 6.5 The suspended interlinking steel bridges between the East and West Mill buildings are constructed with steel plate which are significantly corroded. Due to the extents of corrosion and the form of construction, these features are considered unsafe and not feasible to economically repair.
- 6.6 The West Mill has suffered significant structural deterioration, with notable issues being associated with the main stair core tower, Brougham Road frontage, significantly removed second floor structure (to facilitate former machinery) and implications of this building precluding access to the western side of the redevelopment site. At this stage, a design assessment has not been undertaken to confirm the form of structural intervention required to facilitate the vehicular and pedestrian access through the existing mill building. However, we can advise that there would be significant structural intervention required in order to form a penetration through the floors assumed to be at least 9.5m wide and two storeys high. This work would require heavy steel sections at close centres to support the floor and remaining structure over, especially with tight deflection tolerances being required.
- 6.7 Both stair core towers to the East and West Mill buildings have suffered significant structural deterioration, contain heavily corroded steelwork (which has displaced surrounding masonry) and roof construction in poor condition (the West Mill stair core has very little roof remaining). The heads of both stair cores contain displaced and loose masonry, on the East Mill stair core this is restrained by seven bands of steel tension rods installed to contain the masonry, over several metres of height. We



note that there has recently been an incident whereby a corner parapet stone became dislodged and fell through two floors of the lower mill building.

- 6.8 The Western end of the Brougham Road Mill building is in a severely dilapidated state with a poor roof condition leading to significant failures of the first-floor structure beneath and we expect significant wholesale rebuilding works.
- 6.9 Confirmation is required if mobile phone communications equipment is still in use (located within the stair tower of the East Mill).
- 6.10 The East and West Mill buildings are both typically four storey structures, however both have partial lower ground floor areas and as such careful consideration of the implications from Building Regulations disproportionate collapse requirements are to be considered as development works progress. Discussions with the Local Building Control Authority will be required to agree the change of use of the building to re-assess the consequence class in accordance with A3 of The Building Regulations (disproportionate collapse). This is especially important where there are partial areas of the buildings comprising five storey construction and as such, additional tying of walls and floors may be required due to those sections being in a higher risk category (the potential juncture between higher risk sections also requires agreement).

Installing horizontal tying can typically be readily retrofitted to the buildings, whereas vertical tying can be more difficult to achieve. Alternative means of protecting the building may be more economical, such as excluding gas from the building, installing protection barriers to prevent vehicle impact on the structure.

- 6.11 At this stage it is unclear as to the extents of lower ground floor/basement areas within the East & West Mill buildings. Similarly, it is unclear as to the extents of suspended ground floor construction (over former mill ponds) and what condition this structure is in, i.e. now the culverted watercourse has been inspected, there is evidence of considerably corroded steelwork to these areas and therefore concerns over future serviceable lifespan.
- 6.12 Careful consideration of proposed development phasing plans is required in conjunction with further investigation works regarding extents of suspended slabs, to better inform risks associated with demolition works.
- 6.13 Due to the current condition of the buildings in question and their location within the village of Colne, consideration of the feasibility for undertaking remedial works to retain these heritage assets is a complex mix of structural repairs, economic viability (capital cost) and demand for floor space in the local area. As such, this report is to be read in conjunction with those of the wider design team to form an appropriate overall opinion of the retention requirements.



APPENDIX

SITE PHOTOGRAPHS

MARKED PLANS



ABBREVIATIONS

AR	ASSUMED ROUTE	OSM	OUTSIDE SURVEY AREA
AV	AIR VALVE	PL	POST / POLE
B	BOLLARD	RL	ROOF LEVEL
BH	BURIED HOLE	RS	ROAD SIGN
BT	BRITISH TELECOM CHAMBER	RW	ROAD WORK
CTV	CABLE TV	SC	STOP COOK
CP	CABLE PVT	ST	STOP LAP
CL	COVER LEVEL	SV	STOP VALVE
CR	CABLE RISER	SW	SOIL VENT PIPE
CP	COVER PIPE	TH	TRAFFIC CONTROL
EL	EAVE LEVEL	TR	TAKEN FROM RECORDS
EP	ELECTRICAL POLE	TL	TRAFFIC LIGHTS
EV	EARTH VENT	TR	TRAFFIC CONTROL
FL	FLOOR LEVEL	TR	TAKEN FROM RECORDS
FR	FLAT ROOF LEVEL	TR	TRAFFIC LIGHTS
G	GATE	TR	TRAFFIC CONTROL
GPR	TRACED BY G.P.A.	UL	UNABLE TO LOCATE
GV	GATE VALVE	UL	UNABLE TO LOCATE
IC	INSPECTION CHAMBER	UL	UNABLE TO TRACE
J	JUNCTION BOX	UL	UNABLE TO TRACE
KL	KERB LEVEL	UL	UNABLE TO TRACE
LP	LAMP POST	UL	UNABLE TO TRACE
ML	MISCELLANEOUS LETTER BOX	UL	UNABLE TO TRACE
NP	NOT PLACED	UL	UNABLE TO TRACE
NL	NOT LOCATED	UL	UNABLE TO TRACE
NT	NO TRACE	UL	UNABLE TO TRACE

LINETYPES

---	BRICK WALL	---	POST & RAIL FENCE
---	BLOCK WALL	---	BARBED WIRE FENCE
---	STONE WALL	---	UNGLAZED BOARD FENCE
---	CONCRETE WALL	---	TIMBER PALISADE FENCE
---	OPEN STONE WALL	---	POST & WIRE FENCE
---	CONCRETE WALL	---	TIMBER PALISADE FENCE
---	GENERIC WALL	---	POST & WIRE FENCE
---		---	CONCRETE PANEL FENCE
---		---	METAL PALISADE FENCE
---		---	GENERAL FENCE

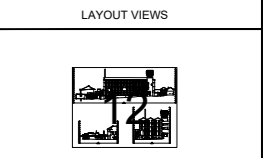
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ALL PAYMENTS HAVE BEEN MADE.



SURVEY NOTES:
The survey is done by OSGB National Grid and Level Datum using RTK GPS with OSGB's Model Transformation and has been drawn at a scale factor of 1:500.
Check the scale factor by setting out or design works should strictly use the control co-ordinates as shown on this drawing.
If possible, insert levels / basic drainage information in shown on this drawing. This will have been removed from observation only.
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Check the scale factor by setting out or design works should strictly use the control co-ordinates as shown on this drawing.

SURVEY REVISIONS

PREVIOUS DWG NO.	-
REVISION NO.	-
ORIGINAL SURVEY DATE:	-
REVISION NOTES:	-



Dudleys Comments
16/09/2024

CT SURVEYS
TOPO · SCAN · UAV · BIM

UNIT 5
KILLINGBECK COURT
LEEDS
LS14 6PD

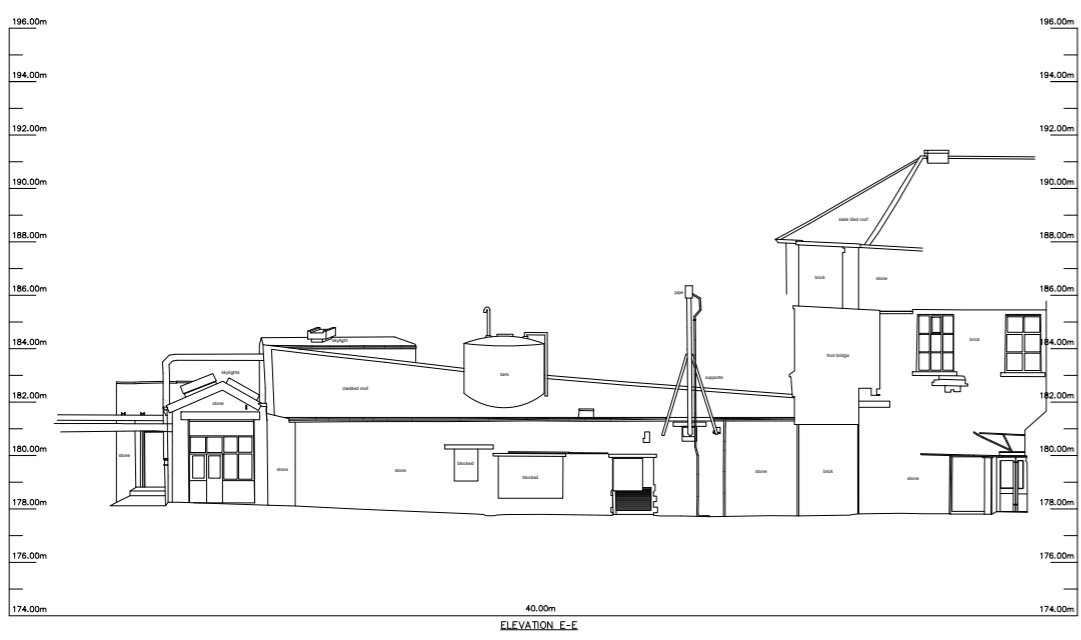
TEL : 0113 44 00 435
MOB : 07949 987564
EMAIL : MAIL@CT-SURVEYS.COM
WEBSITE : WWW.CT-SURVEYS.COM

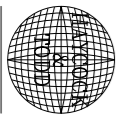
KPP

PROJECT TITLE
Mill, Brougham Road,
Marsden, HD7 6AZ

PROJECT NUMBER
4994AB/12

SCALE	1:100 @ A0	SURVEY DATE	December 2020
BY	OSGB by GPS	SCALE	OSGB fixed at ST02
PROJECT CODE	182.305m	DATE	182.305m
PROJECT CODE	182.305m	DATE	182.305m



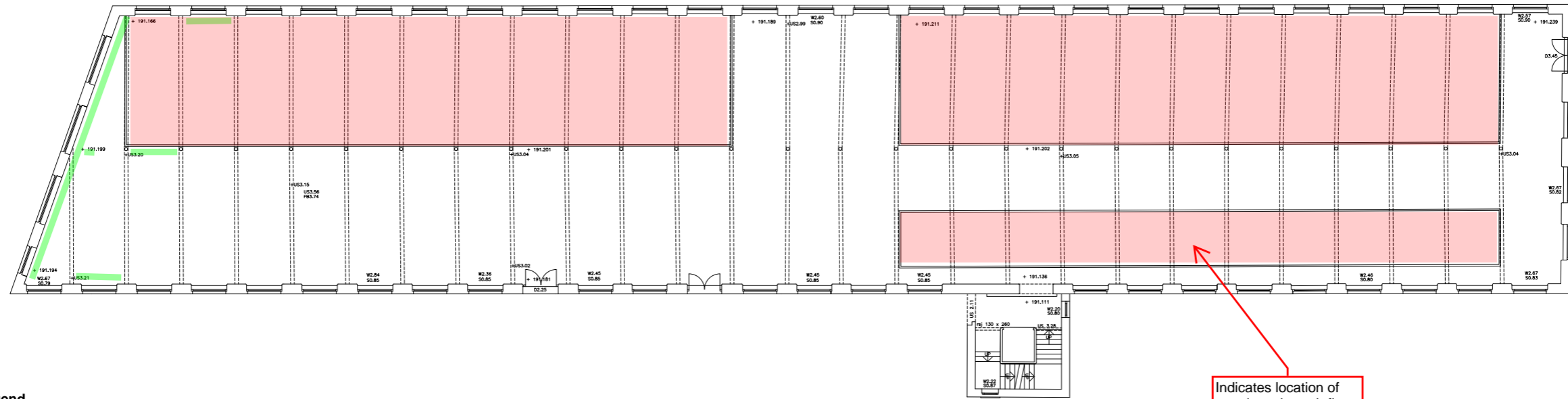


JACO SERVICES CONSULTANTS
 ARCHITECTURAL SURVEYS
 100 BROADWAY
 SOUTH DORSET
 TEL: 01252 709600
 www.jaco-services.co.uk

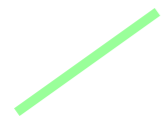
LEGEND

Structural Strengthening	Green line
ACRO support prop	Red dot
Opening through floor deck	Red arrow

Second Floor



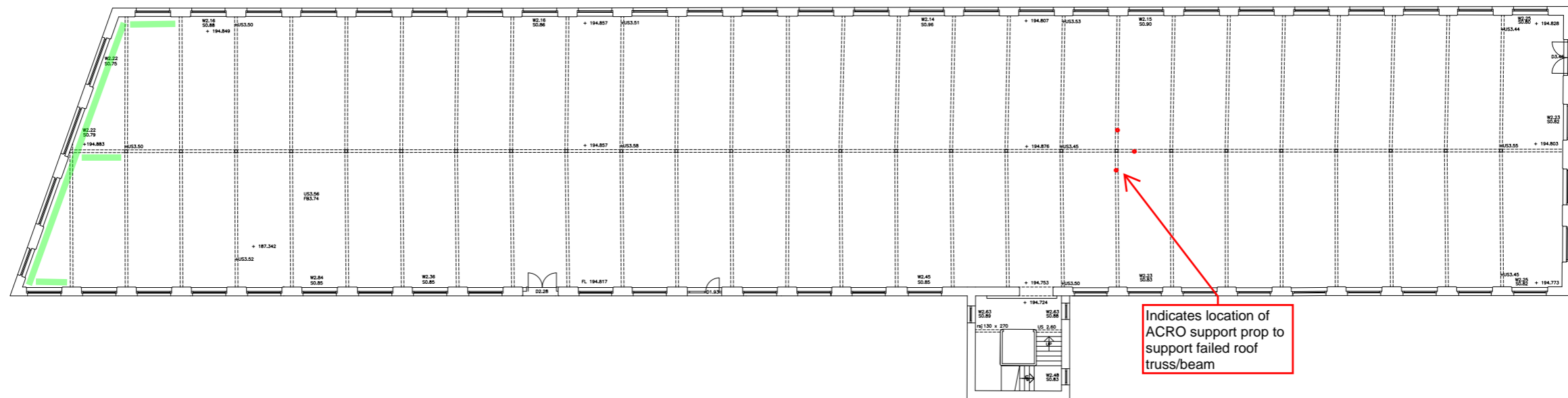
Legend



Indicates structural strengthening intervention to restrain movement to the Brougham Road gable elevation

Indicates location of openings through floor deck, i.e. no floor boards or joists, however primary steel floor beams on column lines remain in place

Third Floor



Indicates location of ACRO support prop to support failed roof truss/beam

MEASURED SURVEY
 NEW MILLS, MARSDEN.

Sheet Diagram

Sheet 3 of 6
 Date of Survey
 December 2014

Surveyed by PBT
 Drawn by NT
 Checked by PBT

Survey Job No. S5548
 Scale 1/100
 S5548/3
 Second Floor Plan.
 Third Floor Plan.

DCE Structural Inspection Notes
 Second and Third Floor Level West Mill



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 DENVER, CO 80202
 TEL: 303.733.7800
 FAX: 303.733.7801
 WWW: www.land-survey.com

LEND

Project Name	NEW MILLS, MARS DEN.
Client	NEW MILLS, MARS DEN.
Project Location	NEW MILLS, MARS DEN.
Project Description	MEASURED SURVEY
Scale	1" = 10'-0"
Date	December 2024
Drawn by	NT
Checked by	PRT
Surveyed by	PF

MEASURED SURVEY
 NEW MILLS, MARS DEN.

Sheet 5 of 6
 Scale 1/100
 S5548/5

Assumed older mill construction with masonry piers between windows

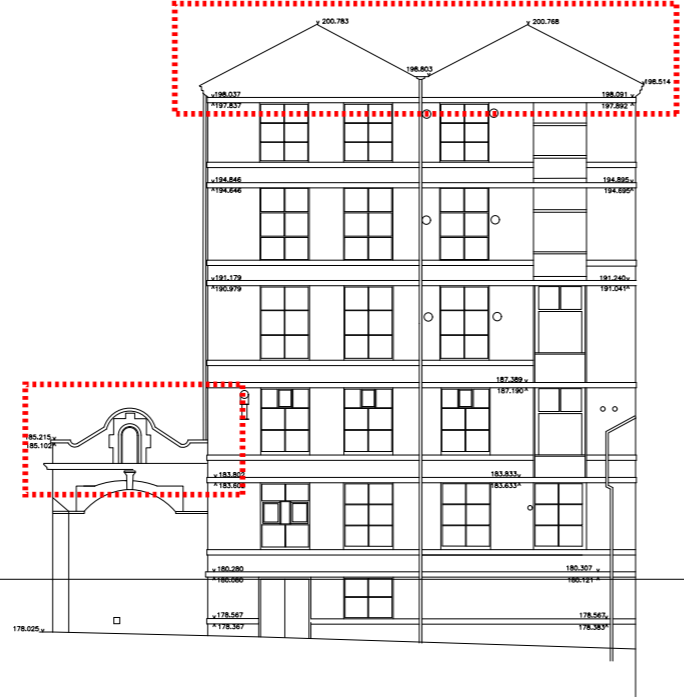
Assumed newer mill construction with stone piers between windows

Assumed newer mill construction with stone piers between windows

Assumed newer mill construction with stone piers between windows

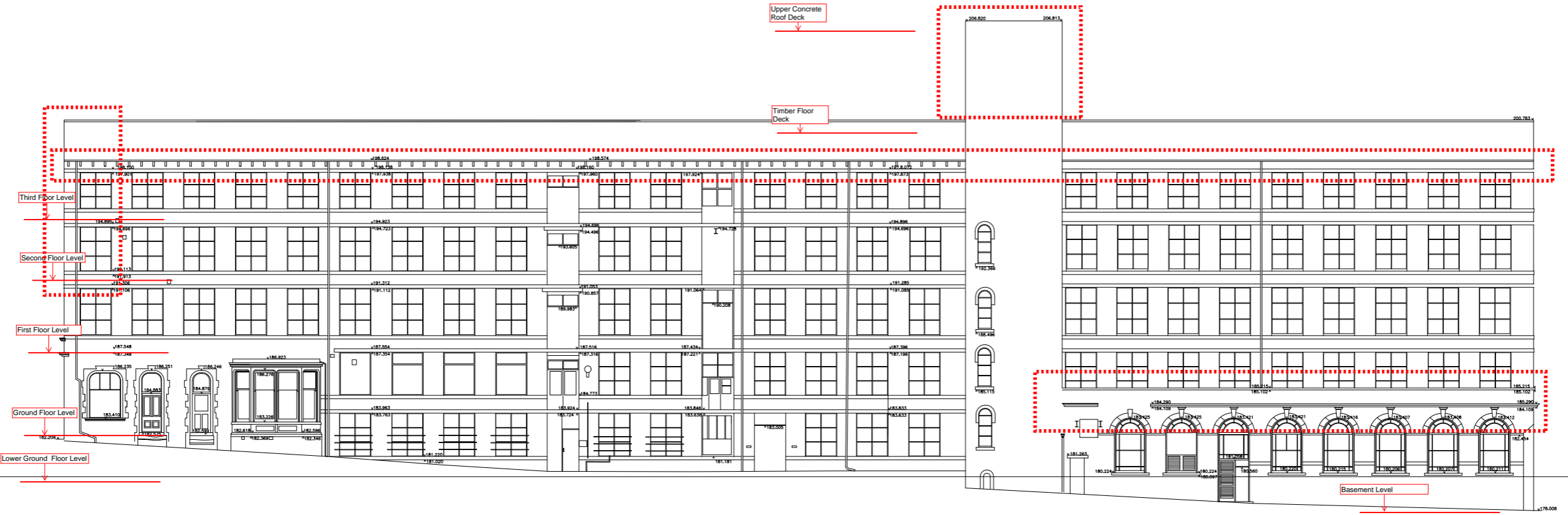
Assumed newer mill construction with stone piers between windows

Dudleys Comments
 16/09/2024



Dashed outline indicates areas where wholesale rebuilding of existing masonry structure is anticipated

datum 180.00



datum 180.00



Assumed older mill construction with masonry piers between windows

Assumed newer mill construction with stone piers between windows

Dudleys Comments
 16/09/2024