

opening up works schedule

Subject: OUW
Project: Rylands Building, Manchester
Reference: OUW Schedule 05.02.21
Author: EAJC
Reviewer: NGRC

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
1	-2	Drainage	C10 C8 R1/17 T10-V12	OUW5-1 (Low level) OUW5-2 (Low level)	The site visits undertaken by Woolgar Hunter have identified a number of manholes, some of which are numbered up to MH14. A full drainage survey is required to determine the condition of the drainage network, as well as the exits from the structure. This will also enable the PDE with United Utilities to progress, for example.	N/A	
							Indicative location – specific photos required.
2	-2	Basement Wall/ Foundations	K12 L12 Q14 S1/17	OUW1-6 (Low level) OUW6-1 (Full height) OUW6-2 (Mid level, only for S1/17)	Information on the existing foundations is required to develop the Stage 2 proposed foundation enhancement details, which will be required with the additional load from the proposed extension. This will be done using non-intrusive or minimal intrusive works wherever possible. As the building has been poorly maintained for a period of time and there will be a change in load on the basement walls, non-intrusive techniques will be used to determine the wall's properties as described in the report, which will aid the development of any remedial details. Chemical and strength testing will allow for the structural properties of the basement wall to be verified, with the change in load that will be experienced.	Type 5 Type 8	
							Indicative location – specific photos required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
3	-2	Slab	H8-I9	OUW3-4 (Low level)	Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab.	N/A	
							Updated photo required without stock present.
4	-2	Slab/ Foundations	R9/S12	OUW3-4 (Low level) OUW3-5 (Low level)	Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. With the increased height of the building, the enhanced core will require existing foundation to be enhanced. The arrangement of the existing core foundations must be understood to develop appropriate enhancement of the foundations.	Type 5	
							Indicative location – specific photo required.
5	-2	Column/ Incoming Beams/ Slab/ Foundations	F10	OUW1-1 (High level) OUW1-3 (Full height/ high level) OUW1-4 (High level) OUW1-5 (Full height) OUW1-6 (Low level)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4 Type 5	

Item	Level	Element	Grid Location	Ouw	Value	Reinstatement	Photograph
					With the increased height of the building, the proposed core will require construction adjacent to existing foundations. Integration of the new core will require an understanding of the existing foundations to develop proposed foundations.		Correct location – additional photos required.
6	-2	Column/ Incoming Beams/ Slab/ Foundations	N9	Ouw1-1 (High level) Ouw1-2 (Low level) Ouw1-3 (Full height/ high level) Ouw1-4 (High level) Ouw1-5 (Full height) Ouw1-6 (Low level)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaking using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns. As the foundations under the roof extension will experience a change in load, the capacity of the existing foundations must be understood to develop a suitable enhancement detail.	Type 1 Type 2 Type 4 Type 5	
7	-2	Column/ Incoming Beams/ Slab/ Foundations	O10	Ouw1-1 (High level) Ouw1-2 (Low level) Ouw1-3 (Full height/ high level) Ouw1-4 (High level) Ouw1-5 (Full height) Ouw1-6 (Low level)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaking using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved	Type 1 Type 2 Type 4 Type 5	

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
					through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns. As the foundations under the roof extension will experience a change in load, the capacity of the existing foundations must be understood to develop a suitable enhancement detail.		Indicative location – specific photo required.
8	-2	Column/ Incoming Beams/ Slab/ Foundations	O12	OUW1-1 (High level) OUW1-2 (Low level) OUW1-3 (Full height/ high level) OUW1-4 (High level) OUW1-5 (Full height) OUW1-6 (Low level)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. Ferroscanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns. As the foundations under the roof extension will experience a change in load, the capacity of the existing foundations must be understood to develop a suitable enhancement detail.	Type 1 Type 2 Type 4 Type 5	

Indicative location – specific photo required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
9	-2	Column/ Incoming Beams/ Slab/ Foundations	H7	OUW3-3 (Full height/ high level) OUW3-4 (Low level) OUW3-5 (Low level) OUW3-6 (Full height)	The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaking using non-intrusive works where possible. Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns. With the increased height of the building, the proposed core will require construction adjacent to existing foundations. Integration of the new core will require an understanding of the existing foundations to develop proposed foundations.	Type 1 Type 2 Type 4 Type 5	
10	-2	Column/ Incoming Beams/ Slab/ Foundations	H10	OUW3-3 (Full height/ high level) OUW3-4 (Low level) OUW3-5 (Low level) OUW3-6 (Full height)	The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaking using non-intrusive works where possible. Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns. With the increased height of the building, the proposed core will require construction adjacent to existing foundations. Integration of the new core will require an understanding of the existing foundations to develop proposed foundations.	Type 1 Type 2 Type 4 Type 5	 Indicative location – specific photo required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
11	-2	Slab/ Foundations	L8-L9 N8-N9	OUW1-2 (Low level) OUW1-6 (Low level)	Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. As a new line of columns will be threaded between gridline 8 and 9, the existing foundation arrangement must be understood, which will allow for the proposed foundation detail to be developed. This will primarily be achieved through Ferros scanning and coring. The capacity of slabs have been calculated based off archive information. Small samples of the concrete slabs will be required for mechanical and chemical testing to verify the capacity of the slabs.	Type 5	
							Indicative location – specific photo required.
12	-1	Drainage	A8-A9 E12-F12 D1/1-E1/1 T14 Q2/15-R1/15 W10-X12 O1-O2	OUW5-1 (Low level) OUW5-2 (Low level)	The site visits undertaken by Woolgar Hunter have identified a number of manholes, some of which are numbered up to MH14. A full drainage survey is required to determine the condition of the drainage network, as well as the exits from the structure. This will also enable the PDE with United Utilities to progress, for example.	N/A	

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
							
							Indicative location – specific photos required.
13	-1	Column/ Incoming Beams/ Slab	H10	OUW3-1 (Low level) OUW3-3 (Full height/ high level) OUW3-6 (Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	
							Indicative location – specific photo required.

Item	Level	Element	Grid Location	Ouw	Value	Reinstatement	Photograph
14	-1	Column/ Incoming Beams/ Slab	G10	Ouw1-1 (Low level) Ouw1-3 (Full height/ high level) Ouw1-4 (High level) Ouw1-5 (Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	
Indicative location – specific photo required.							
15	-1	Column/ Incoming Beams/ Slab	O12	Ouw1-1 (Low level) Ouw1-2 (Low level) Ouw1-3 (Full height/ high level) Ouw1-4 (High level) Ouw1-5 Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	
Indicative location – specific photo required.							

Item	Level	Element	Grid Location	Ouw	Value	Reinstatement	Photograph
16	-1	Column/ Basement Wall	A8 D14 G1/1 Q14 S1/15	Ouw4-1 (High level) Ouw6-1 (Full height)	As the building has been poorly maintained for a period of time and there will be a change in load on the basement walls, non-intrusive techniques will be used to determine the wall's properties as described in the report, which will aid the development of any remedial details. As the building has been poorly maintained for a period of time and there will be a change in load on the basement walls, non-intrusive techniques will be used to determine the wall's properties as described in the report, which will aid the development of any remedial details. Additionally, the perimeter columns transfer out at high level in the basement. The associated steel and fixings will need to be inspected to determine condition and potential loss of section.	Type 8	 Indicative location – specific photos required.
17	-1	Column/ Basement Wall/ Slab	S14	Ouw1-2 (Low level) Ouw1-6 (Low level) Ouw6-1 (Full height)	Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. Information on the existing foundations is required to develop the Stage 2 proposed foundation enhancement details, which will be required with the additional load from the proposed extension. This will be done using non-intrusive or minimal intrusive works wherever possible. As the building has been poorly maintained for a period of time and there will be a change in load on the basement walls, non-intrusive techniques will be used to determine the wall's properties as described in the report, which will aid the development of any remedial details. Additionally, the perimeter columns transfer out at high level in the basement. The associated steel and fixings will need to be inspected to determine condition and potential loss of section.	Type 8	 Indicative location – specific location required.

Item	Level	Element	Grid Location	Ouw	Value	Reinstatement	Photograph
18	4	Column/ Incoming Beams/ Slab	H7	Ouw3-1 (Low level) Ouw3-3 (Full height/ high level) Ouw3-6 (Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	
19	4	Column/ Incoming Beams/ Slab	H10	Ouw3-1 (Low level) Ouw3-3 (Full height/ high level) Ouw3-6 (Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	

Item	Level	Element	Grid Location	Ouw	Value	Reinstatement	Photograph
20	4	Column/ Incoming Beams/ Slab	G10	Ouw1-1 (Low level) Ouw1-3 (Full height/ high level) Ouw1-4 (High level) Ouw1-5 (Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	
21	4	Column/ Incoming Beams/ Slab	N9	Ouw1-1/ Ouw2-1 (Low level) Ouw1-3/ Ouw2-3 (Full height/ high level) Ouw1-4 (High level) Ouw1-5 Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns. It should be noted that undertaking Ouw1-1 and Ouw1-3, also completes Ouw2-1, and Ouw2-3. The Ouw on the same structure serves two purposes to minimise works on the structure.	Type 1 Type 2 Type 4	 Indicative location – specific photo required.

Item	Level	Element	Grid Location	Ouw	Value	Reinstatement	Photograph
22	4	Column/ Incoming Beams/ Slab	O10	Ouw1-1 (Low level) Ouw1-3 (Full height/ high level) Ouw1-4 (High level) Ouw1-5 Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	
Indicative location – specific photo required.							
23	4	Column/ Incoming Beams/ Slab	Q12	Ouw1-1 (Low level) Ouw1-3 (Full height/ high level) Ouw1-4 (High level) Ouw1-5 Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	
Indicative location – specific photo required.							

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
24	4	Column	15/S1	OUW4-1 (Low/ high level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of façade OUW will be used to develop column enhancement details for supporting the extension and will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	
							Indicative location – specific photo required.
25	4	Column	Q14	OUW4-1 (Low/ high level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of façade OUW will be used to develop column enhancement details for supporting the extension and will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	
							Indicative location – specific photo required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
26	4	Column	A8	OUW4-1 (Low/ high level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of the OUW will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	
							Indicative location – specific photo required.
27	4	Column	1/E1-G1	OUW4-1 (Low/ high level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of the OUW will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	
							Indicative location – specific photo required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
28	4	Column	D14	OUW4-1 (Low/ high level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of the OUW will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	
29	4	Beams	B12-B14	OUW1-3 (High level) OUW1-4 (High level) OUW1-5 (High level)	Previous surveys have noted movement on the external face of the façade at the corner of High Street and Bridgewater Place. The photo shown the internal dilapidation below the movement in the façade. OUW are proposed to investigate the condition of the steel columns and steel beams in disrepair, which might be part of the cause of the façade movement.	Type 1 Type 2 Type 3	
30	5	Column/ Incoming Beams/ Slab	H7	OUW3-1 (Low level) OUW3-3 (Full height/ high level) OUW3-6 (Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	

Item	Level	Element	Grid Location	Ouw	Value	Reinstatement	Photograph
31	5	Column/ Incoming Beams/ Slab	H10	Ouw3-1 (Low level) Ouw3-3 (Full height/ high level) Ouw3-6 (Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	
32	5	Column/ Incoming Beams/ Slab	G10	Ouw1-1 (Low level) Ouw1-3 (Full height/ high level) Ouw1-4 (High level) Ouw1-5 (Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
33	5	Column/ Incoming Beams/ Slab	N9	OUW1-1/ OUW2-1 (Low level) OUW1-3/ OUW2-3 (Full height/ high level) OUW1-4 (High level) OUW1-5 Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns. It should be noted that undertaking OUW1-1 and OUW1-3, also completes OUW2-1, and OUW2-3. The OUW on the same structure serves two purposes to minimise works on the structure.	Type 1 Type 2 Type 4	
Indicative location – specific photo required.							
34	5	Column/ Incoming Beams/ Slab	O10	OUW1-1 (Low level) OUW1-3 (Full height/ high level) OUW1-4 (High level) OUW1-5 Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	
Indicative location – specific photo required.							

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
35	5	Column/ Incoming Beams/ Slab	Q12	OUW1-1 (Low level) OUW1-3 (Full height/ high level) OUW1-4 (High level) OUW1-5 Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4	
Indicative location – specific photo required.							
36	5	Column	15/S1	OUW4-1 (Low/ high level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of façade OUW will be used to develop column enhancement details for supporting the extension and will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	
Indicative location – specific photo required.							

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
37	5	Column	Q14	OUW4-1 (Low/ high level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of façade OUW will be used to develop column enhancement details for supporting the extension and will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	 Indicative location – specific photo required.
38	5	Column	A8	OUW4-1 (Low/ high level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of the OUW will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	 Indicative location – specific photo required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
39	5	Column	1/E1-G1	OUW4-1 (Low/ high level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of the OUW will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	
							Indicative location – specific photo required.
40	5	Column/ Beams	D14	OUW1-3 (Full height/ high level) OUW1-4 (High level) OUW1-5 (Full height)	The mansard roof is known to be in disrepair after external inspections from independent surveyors, as well as internal surveys from members of the design team. OUW to inspect the condition of the structure as well as the connectivity to the primary structural frame is proposed. The OUW will aid the understanding of the disrepair of the roof as well as the developing enhancement details to support the proposed extension.	Type 7	
41	5	Slab	P9-P10	OUW1-2 (High level)	Ferrosctanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The ferrosctanning should be undertaken at high level to capture bottom reinforcement of the floor above.	N/A	
							Indicative location – specific photo required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
42	5	Slab	L1/1-M1/2	OUW1-2 (High level)	Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The ferros scanning should be undertaken at high level to capture bottom reinforcement of the floor above.	N/A	 Indicative location – specific photo required.
43	5	Slab	G9-H10	OUW3-2 (High level)	Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The ferros scanning should be undertaken at high level to capture bottom reinforcement of the floor above.	N/A	 Indicative location – specific photo required.
44	6	Column/ Incoming Beams/ Slab	O14	OUW1-1 (High level) OUW1-2 (Low level) OUW1-3 (Full height/ high level) OUW1-4 (High level) OUW1-9 (High level)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The columns for the proposed roof extension will be positioned slightly off gridline 14. The enhancement detail has been theorised at Stage 2, based off information to date. Intrusive works will be required to develop the enhancement detail. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. With additional storeys being added directly above existing columns, the connection detail between the existing and new structure must be developed. This will be achieved through	Type 1 Type 3 Type 6	 Indicative location – specific photo required.

Item	Level	Element	Grid Location	Ouw	Value	Reinstatement	Photograph
					understanding the capping detail at the uppermost stack of the column. However, this may be required to be undertaken at low level at seventh.		
45	6	Slab	P9-P10	Ouw1-2 (High/ low level) Ouw1-8 (Low level)	Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The ferros scanning should be undertaken at low level and high level to capture top and bottom reinforcement of the respective floors. Petrographic and compressive testing of the floor slab will enable a greater understanding of the mechanical properties and construction of the slab. This will enable verification of the slab capacities, which have been back-calculated at Stage 2.	Type 4	
46	6	Slab	G9-H10	Ouw3-2 (High/ low level)	Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The ferros scanning should be undertaken at low level and high level to capture top and bottom reinforcement of the respective floors.	N/A	
47	6	Slab	L1/1-M1/2	Ouw1-2 (Low level)	Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab.	N/A	 Indicative location – specific photo required.

Item	Level	Element	Grid Location	Ouw	Value	Reinstatement	Photograph
48	6	Column/ Incoming Beams/ Slab	H7	Ouw3-1 (Low level) Ouw3-3 (Full height/ high level) Ouw3-6 (Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaking using non-intrusive works where possible. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4 Type 6	
49	6	Column/ Incoming Beams/ Slab	H10	Ouw3-1 (Low level) Ouw3-3 (Full height/ high level) Ouw3-6 (Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaking using non-intrusive works where possible. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4 Type 6	

Item	Level	Element	Grid Location	Ouw	Value	Reinstatement	Photograph
50	6	Column/ Incoming Beams/ Slab	G10	Ouw1-1 (Low level) Ouw1-3 (Full height/ high level) Ouw1-4 (High level) Ouw1-5 (Full height)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns.	Type 1 Type 2 Type 4 Type 6	
51	6	Column/ Incoming Beams/ Slab	N9	Ouw1-1/ Ouw2-1 (Low level) Ouw1-2/ Ouw2-2 (Low level) Ouw1-3/ Ouw2-3 (Full height/ high level) Ouw1-4 (High level) Ouw1-5 Full height) Ouw1-9 (High level)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The OUW results will be cross-checked against the drawings from Manchester Central Library archive. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns. It should be noted that undertaking OUW1-1, OUW1-2, and OUW1-3, also completes OUW2-1, OUW2-2, and OUW2-3. The OUW on the same structure serves two purposes to minimise works on the structure. With additional storeys being added directly above existing columns, the connection detail between the existing and new structure must be developed. This will be achieved through	Type 1 Type 2 Type 4 Type 6	 Indicative location – specific photo required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
					understanding the capping detail at the uppermost stack of the column. However, this may be required to be undertaken at low level at seventh.		
52	6	Column/ Incoming Beams/ Slab	O10	OUW1-1 (Low level) OUW1-2 (Low level) OUW1-3 (Full height/ high level) OUW1-4 (High level) OUW1-5 Full height) OUW1-9 (High level)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. Ferrosscanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The OUW results will be cross-checked against the drawings from Manchester Central Library archive. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaking using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns. With additional storeys being added directly above existing columns, the connection detail between the existing and new structure must be developed. This will be achieved through understanding the capping detail at the uppermost stack of the column. However, this may be required to be undertaken at low level at seventh.	Type 1 Type 2 Type 4 Type 6	

Indicative location – specific photo required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
53	6	Column/ Incoming Beams/ Slab	Q12	OUW1-1 (Low level)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. Ferros scanning of the slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The OUW results will be cross-checked against the drawings from Manchester Central Library archive. The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. The non-intrusive void scanning of the columns will provide insight into the level of compaction and quality of construction. The presence of voids will affect the suitability of the proposed enhancement details for columns. With additional storeys being added directly above existing columns, the connection detail between the existing and new structure must be developed. This will be achieved through understanding the capping detail at the uppermost stack of the column. However, this may be required to be undertaken at low level at seventh.	Type 1	
				OUW1-2 (Low level)		Type 2	
				OUW1-3 (Full height/ high level)		Type 4	
				OUW1-4 (High level)		Type 6	
				OUW1-5 Full height)			
				OUW1-9 (High level)			
54	6	Column	15/S1	OUW4-1 (Low/ mid level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of façade OUW will be used to develop column enhancement details for supporting the extension and will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	

Indicative location – specific photo required.

Indicative location – specific photo required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
55	6	Column	Q14	OUW4-1 (Low/ mid level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of façade OUW will be used to develop column enhancement details for supporting the extension and will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	 Indicative location – specific photo required.
56	6	Column	A8	OUW4-1 (Low/ mid level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of the OUW will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	 Indicative location – specific photo required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
57	6	Column	1/E1-G1	OUW4-1 (Low/ mid level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of the OUW will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	
							Indicative location – specific photo required.
58	6	Column/ Beams	D13	OUW1-3 (Full height/ high level) OUW1-4 (High level) OUW1-5 (Full height)	The mansard roof is known to be in disrepair after external inspections from independent surveyors, as well as internal surveys from members of the design team. OUW to inspect the condition of the structure as well as the connectivity to the primary structural frame is proposed. The OUW will aid the understanding of the disrepair of the roof as well as the developing enhancement details to support the proposed extension.	Type 7	
							Indicative location – specific photo required.
59	6	Column/ Incoming Beams/ Slab	T10	OUW1-3 (Full height/ high level) OUW1-4 (High level) OUW1-9 (High level)	The column/ beam attributes, as described in the report, are required to verify existing capacities of structure and develop enhancement details where possible. This will be undertaken using non-intrusive works where possible. The structure must be investigated to assess its potential for disproportionate collapse and nominal tying. This will only be achieved through intrusive works but will be kept to a minimum. With additional storeys being added directly above existing columns, the connection detail between the existing and new structure must	Type 1 Type 2 Type 6	

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
					be developed. This will be achieved through understanding the capping detail at the uppermost stack of the column. However, this may be required to be undertaken at low level at seventh.		Indicative location – specific photo required.
60	7	Slab/ Column/ Incoming Beams	O14	OUW1-1 (Low level) OUW1-9 (Low level)	OUW are required to understand the connection between the perimeter steelwork and roof steelwork to develop an enhancement detail, due to the increased load from the proposed extension. With additional storeys being added directly above existing columns, the connection detail between the existing and new structure must be developed. This will be achieved through understanding the capping detail at the uppermost stack of the column. OUW at high level at sixth have been specified at a high level as well. If the OUW at sixth determine the required information at O14, this OUW at O14 at seventh are not required.	Type 1 Type 3 Type 6	 Indicative location – specific photo required.
61	7	Slab/ Column/ Incoming Beams	N9	OUW1-9 (Low level)	With additional storeys being added directly above existing columns, the connection detail between the existing and new structure must be developed. This will be achieved through understanding the capping detail at the uppermost stack of the column. OUW at high level at sixth have been specified at a high level as well. If the OUW at sixth determine the required information at N9, this OUW at N9 at seventh are not required.	Type 6	 Indicative location – specific photo required.
62	7	Slab/ Column/ Incoming Beams	O10	OUW1-9 (Low level)	With additional storeys being added directly above existing columns, the connection detail between the existing and new structure must be developed. This will be achieved through understanding the capping detail at the uppermost stack of the column. OUW at high level at sixth have been specified at a high level as well. If the OUW at sixth determine the required information at O10, this OUW at O10 at seventh are not required.	Type 6	 Indicative location – specific photo required.

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
63	7	Slab/ Column/ Incoming Beams	Q12	OUW1-9 (Low level)	With additional storeys being added directly above existing columns, the connection detail between the existing and new structure must be developed. This will be achieved through understanding the capping detail at the uppermost stack of the column. OUW at high level at sixth have been specified at a high level as well. If the OUW at sixth determine the required information at Q12, this OUW at Q12 at seventh are not required.	Type 6	 Indicative location – specific photo required.
64	7	Slab/ Column/ Incoming Beams	T10	OUW1-9 (Low level)	With additional storeys being added directly above existing columns, the connection detail between the existing and new structure must be developed. This will be achieved through understanding the capping detail at the uppermost stack of the column. OUW at high level at sixth have been specified at a high level as well. If the OUW at sixth determine the required information at T10, this OUW at T10 at seventh are not required.	Type 6	 Indicative location – specific photo required.
65	7	Slab	P9-P10	OUW1-1 (Low level) OUW1-2 (Low level)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. Ferroscanning of the roof slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The OUW results will be cross-checked against the drawings from Manchester Central Library archive.	Type 6	

Item	Level	Element	Grid Location	OUW	Value	Reinstatement	Photograph
66	7	Slab	G9-H10	OUW3-1 (Low level) OUW3-2 (Low level)	The connection of the slab to the steel grillage must be known to develop diaphragm action, which is critical for wind loading. Ferros scanning of the roof slab, which is non-intrusive work and will minimise disruption, will allow for a greater understanding of the composition of the reinforced concrete slab, which will be required to verify the capacity of the slab. The OUW results will be cross-checked against the drawings from Manchester Central Library archive.	Type 6	 Indicative location – specific photo required.
67	7	Column	2/E1-G1	OUW4-2 (Low level)	Works to date have surveyed the external face of the façade but not the internal face. It is known from other locations that the façade steelwork has deteriorated. OUW area required to determine the condition of the steelwork and associated bracketry, as well as the potential loss of the section. The selected locations have identified perimeter columns of different types, based on the stone façade. One of each column has been selected to minimise the façade OUW. The results of the OUW will be fed into the remediation strategy for the façade steelwork for anodic/ cathodic protection.	Type 3	 Indicative location – specific photo required.

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Ref: EAJC / OUW Schedule 05.02.21 / Rylands Building, Manchester / 05 February 2021