LIDL GREAT BRITAIN LTD

STRUCTURAL APPRAISAL REPORT

FOR

PROPOSED RETAIL STORE

AT

THE FORMER COOP SUPERMARKET
CHURCH ROAD NORTH
WAVERTREE
LIVERPOOL
L16 6TE

Beam Consulting
14 Bond Street
Wakefield
West Yorkshire
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REVISION RECORD

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1	First issue	23 February 2021
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A. PURPOSE OF THE REPORT

Lidl Great Britain Ltd instructed Beam Consulting Engineers Ltd to undertake a structural inspection and structural options appraisal of the building structure of the former Coop Supermarket, Church Road North, Wavertree, Liverpool, L15 6TE. The purpose of the Report is to consider the construction of the building, the requirements of Lidl Great Britain Ltd to operate a commercial retail store from the site, and to consider structural options for the future use of the building and/or site.

B. INSPECTING AND APPRAISING ENGINEER STATEMENT

Kenneth Graham Philip, BSc(Hons), C.Eng., M.I.C.E., M.I.Struct.E.

I am a Chartered Civil and Structural Engineer, a Member of the Institution of Civil Engineers and The Institution of Structural Engineers. I became a Chartered Engineer in 1986. I am the Managing Director of Beam Consulting Engineers Ltd, a general practice civil and structural engineering consultancy. I have been engaged on the design and construction of building and civil engineering structures all my working life and continue to have a detailed involvement at the current time in a number of building projects. I have extensive experience in working on all types of buildings, new and old, including Grade 1 and 2 Listed Buildings across England and Wales.

EXECUTIVE SUMMARY

This Report has been prepared in relation to the proposed redevelopment of the former Coop Supermarket, Church Road North, Wavertree, Liverpool, L15 6TE.

The existing building has been inspected with a view considering the options to re-use the existing building or to demolish and rebuild with a purpose built retail store.

The original 1936 building has been extended significantly and substantially altered internally over the years to its current layout.

The condition of the structural fabric of both the original building and all added parts have deteriorated significantly over the years. The structural fabric of the building has been so badly affected by inadequate maintenance of the building over the years there is a significant risk that the extent of repairs necessary is now so substantial so as to potentially make it an uneconomic proposition to successfully renovate the building. Fundamental problems in relation to conversion and renovation exist principally because some of the reinforced concrete elements cannot be economically corrected without replacement and similarly the complications associated with dealing with the certain irreversible steelwork corrosion within the brick embedded steel columns. Other considerable challenges would include removal of the substantial number of internal columns at ground level and the need to find additional structural means to support the very heavy and substantial concrete first floor previously installed for the snooker club.

The extent of repairs necessary to this building are significant. It is likely that the inability of steelwork corrosion to be eliminated will render the prospect of raising commercial finance to support investment difficult. Such construction works would likely be largely incapable of a property owner securing insurance backed design and construction warranties.

The challenges presented in renovating and repairing this building will almost certainly generate costs and logistics which are so great that the only realistic option is to demolish and construct a new building. In the event that the structure is to be retained, it is vital that:

a) the works considered in section 3.2 of this Report are undertaken
b) as due to the nature of the proposed works it is practically impossible to identify the full extent until the works are underway, consideration will need to given to the inclusion of a carefully calculated and managed contingency sum for inclusion within the development appraisal
c) the contracting organisation responsible for the construction works be carefully selected from the ranks of specialist local heritage building contractors

It is recommended that:

- To ensure cost certainty on the options to renovate or reconstruct, the client seeks professional construction cost advice
- Serious consideration is given to demolition of the existing building and construction of a new purpose built retail unit in place of the existing, given the extent of the work necessary to the existing structure

1.0 INTRODUCTION

This Structural Appraisal Report has been prepared in relation to the proposed redevelopment works at the former Coop Supermarket, Church Road North, Wavertree, Liverpool, L15 6TE where it is intended to operate a food retail store within the existing building or demolishing the existing building and constructing a purpose built retail unit.

It is understood the original cinema building was constructed in 1936 with alterations and extensions to the building occurring principally since 1960.

The building was inspected on Wednesday 3 February 2021. The weather at the time of inspection was cold, dry and sunny.

The Report is based on the following information:

i. Site location
ii. Existing Site levels
iii. A single Site inspection
iv. Building measured survey by Technics

All comments and opinions contained in this Report, including any conclusions are based on information available to Beam Consulting Engineers during investigations prior to completion of the Report. Conclusions drawn by Beam Consulting Engineers may differ if the available information is subsequently found to be inaccurate, incomplete or misleading. Beam Consulting Engineers accept no responsibility should this prove to be the case, nor if additional information exists or becomes available in relation to this site. This also applies to recommendations made by Beam Consulting Engineers.

Except as otherwise requested by the Client, Beam Consulting Engineers are not obliged and disclaim any obligation to update the report for events outside Beam Consulting Engineers' direct control taking place after:

i. The date on which the appraisal was undertaken, and
ii. The date on which the Report is issued.

Beam Consulting Engineers make no representation whatsoever in relation to the legal significance of findings reported or any legal matters referred to in the following report.

This document is a structural appraisal report in relation to redevelopment works at the former Coop Supermarket, Church Road North, Wavertree, Liverpool for Lidl Great Britain Ltd. The information presented and recommendations/conclusions stated are based on single site inspection only.

This report does not deal with any aspect of foul or surface water drainage in relation to the property.

2.0 INSPECTION

2.1 **Main Building** (original building and associated brickwork surrounding superficial extensions)

The original building is an early form of steel frame structure common in "art deco" cinemas of the time, where steel columns are embedded within the external brick walls or externally expressed brick piers (See Appendix C for historic note). All elevations are solid brick with the brick piers only evident in the North and South elevations. There is a full building height feature window formed in reinforced concrete above the main entrance at the Northwest corner. Low level surround extensions are present on the North and West elevations. The main roof of the building comprises steel angle trusses with steel angle purlins surmounted by corrugated asbestos/asbestos cement sheeting where the trusses are bolted to and supported by the steel columns embedded in the solid brick external walls and piers. Steel columns which provide support to the ancillary roof structure are also embedded in the East and West brick external walls. The steel columns embedded within the brick external walls also offer a stiffening effect to the walls in this early form of steel/masonry construction.

2.1.1 External Inspection

The main loadbearing walls of the original building are approximately 350mm thick solid brick whereas the more recent low level surround extensions are c300mm overall thick brick faced cavity masonry. The walls as a whole have not been repointed however there are a number of areas which have been repointed to some extent.

<u>North Elevation</u>
The mortar pointing is in poor condition. There are significant vertical cracks in a number of the brick piers. It is almost certain that steel within the brick piers will be in contact with the inner face of the bricks and as the wall faces predominantly North will not fully dry out on a seasonal basis, thus the cracks are the result of corroding steel columns. The extent of steelwork corrosion is likely significant and will have been ongoing for most of the life of the building. Rainwater goods appear in poor condition. (See photograph nos 1, 2, 3 and 4)

<u>West Elevation</u>
The mortar pointing is in poor condition. (See photograph no 1)

<u>Feature Window at NW Corner</u>
The feature window is formed entirely in reinforced concrete. Concrete from the 1930s, especially where the concrete is of doubtful condition, is recognised as being generally of poor strength particularly in relation to the performance requirements of an institutional class building. The concrete is spalling comprehensively, and corroding reinforcement is visible. (see photograph nos 1 and 8)

<u>South Elevation</u>
The mortar pointing is in poor condition in many areas, and substantial areas of brickwork can be seen to have been replaced most notably at brick piers. Similar problems with corrosion of steelwork embedded with solid brickwork is anticipated. Rainwater goods appear in poor condition. (See photograph nos 9 and 10)

East Elevation
The wall is in poor condition and seems to be within a poorly ventilated space being in close proximity to fencing and adjacent property. The wall also seems to be subject to restricted light and hence warm sunlight in better weather. The wall appears to be quite damp and the mortar pointing is in poor condition. (See photograph nos 5, 6 and 7)

2.2 The Single Storey Side/Rear Extension

This part of the building is a single storey multi-bay steel portal frame surmounted by a metal cladding roof on metal purlins with brick external leaf cavity masonry walls. Inspection of this part of the building was only available from the west side and from the roof access gantry structure.

2.2.1 External Inspection

The external walls are approximately 300mm wide cavity masonry, brick external leaf. The West elevation seems in reasonable order however from the roof gantry it is evident the South and East elevations are subject to considerable vegetation growth although access to these areas was not available at the time of inspection.

West Elevation
This elevation is in reasonable condition.

South Elevation
No access available.

East Elevation
No access available.

Roof
Viewing of the pitched roof from the access gantry allowed mainly distant inspection. The metal roof cladding is in poor condition with most of the protective coating having disappeared and significant surface rusting of the metal cladding. The small area of flat roof at the roof gantry access point seemed intact where is was visible to see the asphalt surface through detritus. The flashing along the joint between the single storey roof and the main building South elevation was poor along its full length and appeared to have been badly installed. (See photograph no 11)

2.3 Internal Inspection

The interior of the building has been significantly modified to facilitate the previous varied uses of the building since it ceased to operate as a cinema. A number of original structural features of the building remain, either in full or have been partially removed. Although physical investigation has not been undertaken at this point, elements such as the proscenium arch, upper and lower balcony structures at least partly remain, as described in other sections of this Report.

2.3.1 Ground Floor

Main Building Area
The main building ground floor area is understood to be the footprint of what was the original cinema area only. Original features and structure have been removed almost in entirety or altered

some time ago to accommodate the supermarket use at ground floor and leisure uses at floors above. The ground floor seems to be a concrete slab largely tiled over. There are a number of different floor slab levels and the concrete quality is unknown. The slab is unlikely to meet institution standards.

There are a number of columns which support what seems to be a very heavy concrete first floor above. The substantial floor above is supported on a considerable network of beams which can only be presumed to have been necessary to accommodate the weight from a large number of snooker tables for what was Riley Snooker Club.

There are other ancillary areas around the periphery of the main floor area along the West elevation wall which comprise brick walls supporting floors comprising reinforced concrete beams with clay "pots" infilling between the beams.

Single Storey/Extension Area

The ground floor seems to be similar to the main building floor, however the surface is largely covered in water which seems to be rainwater leaking from the poor condition roof above. (see photograph no 14)

2.3.2 First Floor

The first floor is above the ground floor to the main building area only. This floor is on a number of levels comprising the substantial concrete as described above, beam and "pot" structure to the ancillary areas and substantial tiered timber staging areas elsewhere. Within the ancillary areas the feature window reinforced concrete structure in the NW corner could be seen to exhibit substantial spalling of concrete and exposed corroding steel reinforcing bars. (See photograph no 19)

Limited investigation of the timber staging area whereby ceiling tiles, carpet tiles and small areas of flooring could be removed revealed that:

Upper circle

Raking steel members are present below what appears to be the tiered aged timber decking which will have formed the upper circle. Different types of timber decking are noted below carpet tiles with screeding to disguise the joint in the decking surface. The line of the joint forms a curve across the entire floor surface interrupted by the more recent lift shaft suggesting that at least some of the upper circle structure remains below staging where some of the structure may have been cut out, although it was not proven that any steelwork structure has been removed. (See photograph no 17)

Circle

This area was not investigated however a similar curved screeded joint in the differing types of floor decking was noted below the carpet tiles. This suggests the original circle structure is hidden within the staging. (See photograph no 18)

2.3.3 Second Floor

This floor is limited to the ancillary areas immediately adjacent to the East and West elevations formed with brick walls, reinforced concrete floor beams and clay "pots" with the feature window in the NW corner as elsewhere. The reinforced concrete to the feature window in the NW corner is in the same poor condition as at first floor where substantial spalling of concrete and exposed corroding steel reinforcing bars are evident. (See photograph nos 12 and 13)

2.3.4 Third Floor

This floor is limited to the ancillary areas immediately adjacent to the East and West elevations formed with brick walls, reinforced concrete floor beams and clay "pots" with the feature window in the NW corner as elsewhere. The reinforced concrete to the feature window is in the same very poor condition as at first and second floors where substantial spalling of concrete and exposed corroding steel reinforcing bars are evident.

The Proscenium Arch is noted as being intact adjacent to the wall line along the ancillary areas to the East side. The screen curtain supports from cinema times are noted as being connected to the Proscenium Arch steel beam. The Proscenium Arch is major element of structure of the original cinema building and is vital to the continued stability of the original building. (See photograph no 15)

Parallel to the Proscenium Arch is a reinforced concrete beam which appears to have acted as a tie across the full width of the building. This beam has been cut through and partially removed in sections meaning that this important element of structure can no longer fulfil its function. This is a significant weakness in the remaining structure of the original building. (See photograph no 16)

The solid brick walls to the ancillary and stairwell areas exhibit many areas where damp penetration is significant and this is only to be expected due to the height of the building, exposure to driving wind and rain at height, and the fact that there is no barrier to the horizontal movement of moisture. In some areas this is also affecting the ends of the reinforced concrete roof beams.

2.4 Roof

2.4.1 Main Building Roof

Safe entry was not possible into the roof void above the large areas below. The roof covering is noted in the 2020 Building Asbestos Register as being of cement containing Chrysotile with a surface area of 2000m². All steel columns are embedded within the solid brick walls at high level where moisture penetration and exposure to adverse weather conditions is greatest. All columns will have corroded to some extent, the effect of which is evident in photographs noted elsewhere which is a concern for the stability of the building and roof in particular.

<u>Ancillary Areas Roofs</u>

The ancillary area roofs are flat. The roof protection to the flat roofs is not accessible. There is some risk that the upper surface of the reinforced concrete roof beams could have been affected by moisture and corrosion over time if any water leakage has occurred which is a concern due to the signs of moisture penetration through the building fabric elsewhere. Corroding reinforcement is a serious concern. (See photograph no 20)

2.4.2 Roof to Single Storey Section

The metal cladding roof is in poor condition and is corroding extensively. Water penetration is evident on the internal ground slab suggesting that the roof leaks extensively. The support structure to the cladding seems to be performing adequately. (See photograph nos 11 and 14)

3.0 Structural Appraisal

3.1 Condition

The building structure is tired and well beyond the standard commercial design life of 50 years if the building is considered to be of institutional standard, less if not institutional.

A number of structural defects have been identified many of which have the potential to contribute to structural instability if not addressed in the short term.

The main roof to the original building contains Chrysolite which would need to be removed and this will be a quite monumental task considering accessibility, asbestos protection measures and temporary works. Such considerations should be taken account of in determining the most effective way forward for the future of this site.

It is noted that rainwater goods are on the point of collapse, the single storey roof cladding leaks comprehensively and very old vertical cracking in structural masonry is noted in numerous locations. This evidence points to the fact that the building has not been maintained to any degree in recent times, quite possibly over a period in excess of 25 years.

3.2 Option to Retain the Building and Renovate

The building can be renovated to a high standard with substantial investment. It must however be understood that the building can never be considered as new, near new, and a normal design life with little future maintenance is not realistic.

The walls of the original building are a solid brick and do not meet current standards of resistance to moisture penetration and even with protective systems there is no guarantee of success in this respect.

This is very important for the steelwork embedded within the brick walls which are clearly corroding to a significant extent.

Corroding steelwork can be exposed, cleaned and treated however once the chemical process of corrosion has begun it cannot be eliminated and the existing problems will simply repeat themselves within a few years.

The extent of corrosion of steelwork anticipated within the brick walls could be significant which may render a number of steel columns as unstable.

The full height of the reinforced concrete in the feature window is in such disrepair that the structural frame for this element would require reconstruction of its full height.

The roofs of both the original building and the single storey extension would need to be replaced in any renovation project.

Any option to renovate the building would need to encompass the following key structural elements, which is not an exhaustive list by any means:

Ref	***Headline repairs***	***Approx Extent***
1	Erect extensive scaffolding to entire length of perimeter walls in some locations both sides of the property ownership boundary for external works generally.	150m x 17m high 60m x 5m high
2	Incorporate major temporary works with internal scaffolding to facilitate the extensive repairs	c3000m² x 17m high
3	Strip all local brick surround/piers from all columns which offer roof support	30No x 17m high
4	Remove at least 50% of internal ground floor columns to facilitate retail operation which would involve complex and extensive temporary propping of concrete floor above	20No
5	Remove the failed reinforced concrete feature window full height	1No full height
6	Remove many of the internal staircases to optimise retail use	4No concrete
7	Remove and replace existing embedded columns	20No, 17m height
8	Clear extensive detritus	Full area
9	Careful removal of valuable art deco features for safe keeping	Various
10	Extensive asbestos removal	c3000m²
11	Remove all vegetation growth from perimeter walls	1700m²
12	Provide comprehensive protection measures to all art deco features not capable of removal	Widespread
13	Shotblast or otherwise clean all old steelwork to bare metal	45No x 17m high
14	Clean all other steelwork	Widespread
15	Repair reinforced concrete tie beam at top floor level	3No locations
16	Remove reinforced concrete feature window and rebuild replica	1No x 17m height
17	Paint and protection system to all steel in external walls	Extensive
18	Paint and protection system to all other structural steel	Extensive
19	Rebuild all brick piers	45No
20	Strip single storey roof cladding	600m²
21	Repoint all external brickwork after other brick repairs	3800m²
22	Remove all flat roof coverings and repair any concrete found to be damaged	150m²
23	Allow for major repairs/replacement to main asbestos cement roof	2000²
24	Allow for reinstatement and introduction of safe walking gantry within roof void assuming planning require it to be kept	1No
25	Provide deep steel support beams at ground floor level where columns removed	10No, 8m span at 125kg/m
26	Allow for extensive cut out and replacement of reinforced concrete floor and roof beams	150m²
27	Allow for making safe to all floors above.	Item
28	Allow for improving the standard of the existing concrete slab and replace at least 75% of the area	c2500m²

There would be substantial additional renovation, repair and alteration works required to convert the building to an operational retail store which would also require proper and detailed consideration. Such works would need to include architectural and building fabric repair works etc to ensure the future longevity of the building fabric.

In assessing the challenges and costs of renovating this building for re-use it must be understood that all elements have not been inspected due to finishes and building fabric covering key elements.

Taking account of this, there should be no misunderstanding that renovation and reuse of this building will require substantial investment with a very significant allowance for unexpected defects. In this respect it is vital that any cost estimate prepared is realistic.

3.3 Option to Demolish and Construct New Build Retail Unit

Demolition of the existing building and replacement with a new build retail unit is a straightforward option.

In selecting this option, consideration will need to be given to demolition of the largely still in place circle/balcony structure and heavy concrete construction within.

Consideration also will need to be given to the substantial party walls which run along the boundaries on two sides of the site.

4.0 Conclusions and Recommendations

4.1 Conclusions

The condition of the structural fabric of both the original building and all added parts have deteriorated significantly over the years. The structural fabric of the building has been so badly affected by inadequate maintenance of the building over the years there is a significant risk that the extent of repairs necessary is now so substantial so as to potentially make it an uneconomic proposition to successfully renovate the building. Fundamental problems in relation to conversion and renovation exist principally because some of the reinforced concrete elements cannot be economically corrected without replacement and similarly the complications associated with dealing with the certain irreversible steelwork corrosion within the brick embedded steel columns. Other considerable challenges would include removal of the substantial number of internal columns at ground level and the need to find additional structural means to support the very heavy and substantial concrete first floor previously installed for the Riley Snooker Club.

The extent of repairs necessary to this building are significant. It is likely that the inability of steelwork corrosion to be eliminated will render the prospect of raising commercial finance to support investment difficult. Such construction works would likely be largely incapable of a property owner securing insurance backed design and construction warranties.

The challenges presented in renovating and repairing this building will almost certainly generate costs and logistics which are so great that the only realistic option is to demolish and construct a new building. In the event that the structure is to be retained, it is vital that:

d) the works considered in section 3.2 of this Report are undertaken
e) as due to the nature of the proposed works it is practically impossible to identify the full extent until the works are underway, consideration will need to given to the inclusion of a carefully calculated and managed contingency sum for inclusion within the development appraisal
f) the contracting organisation responsible for the construction works be carefully selected from the ranks of specialist local heritage building contractors

4.2 Recommendations

This report expresses no view on the costs of the alternative works strategies however the significant problem in a property owner being able to secure funding on the basis of steelwork corrosion will be a challenge.

It is recommended that:

- To ensure cost certainty on the options to renovate or reconstruct, the client seeks professional construction cost advice
- Serious consideration is given to demolition of the existing building and construction of a new purpose built retail unit in place of the existing, given the extent of the work necessary to the existing structure

APPENDIX A
SITE PHOTOGRAPHS

PHOTO NO: 1 **DATE: 3 February 2021**

PHOTO NO: 2 **DATE: 3 February 2021**

PHOTO NO. 1	Feature window/entrance view
PHOTO NO. 2	North elevation – vegetation on wall noted

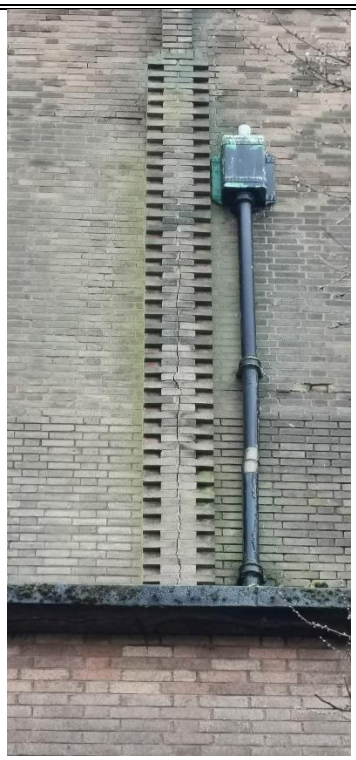

PHOTO NO: 3 **DATE: 3 February 2021**

PHOTO NO: 4 **DATE: 3 February 2021**

PHOTO NO. 3 PHOTO NO. 4	))North elevation - cracking and poor downpipes)

PHOTO NO: 5 **DATE: 3 February 2021**

PHOTO NO: 5 **DATE: 3 February 2021**

PHOTO NO. 5	East elevation from front
PHOTO NO. 6	East elevation from passage – poor repair and moss growth

PHOTO NO: 7 **DATE: 3 February 2021**

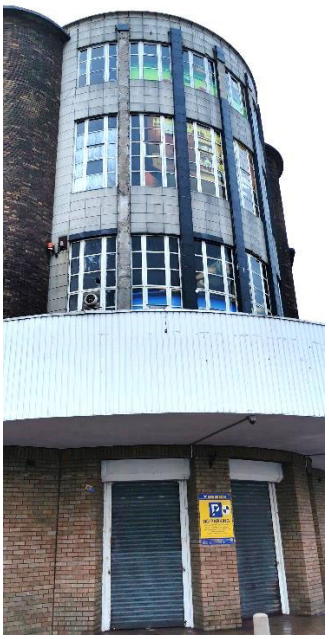

PHOTO NO: 8 **DATE: 3 February 2021**

PHOTO NO. 7	East elevation – moss growth
PHOTO NO. 8	Feature window – poor condition

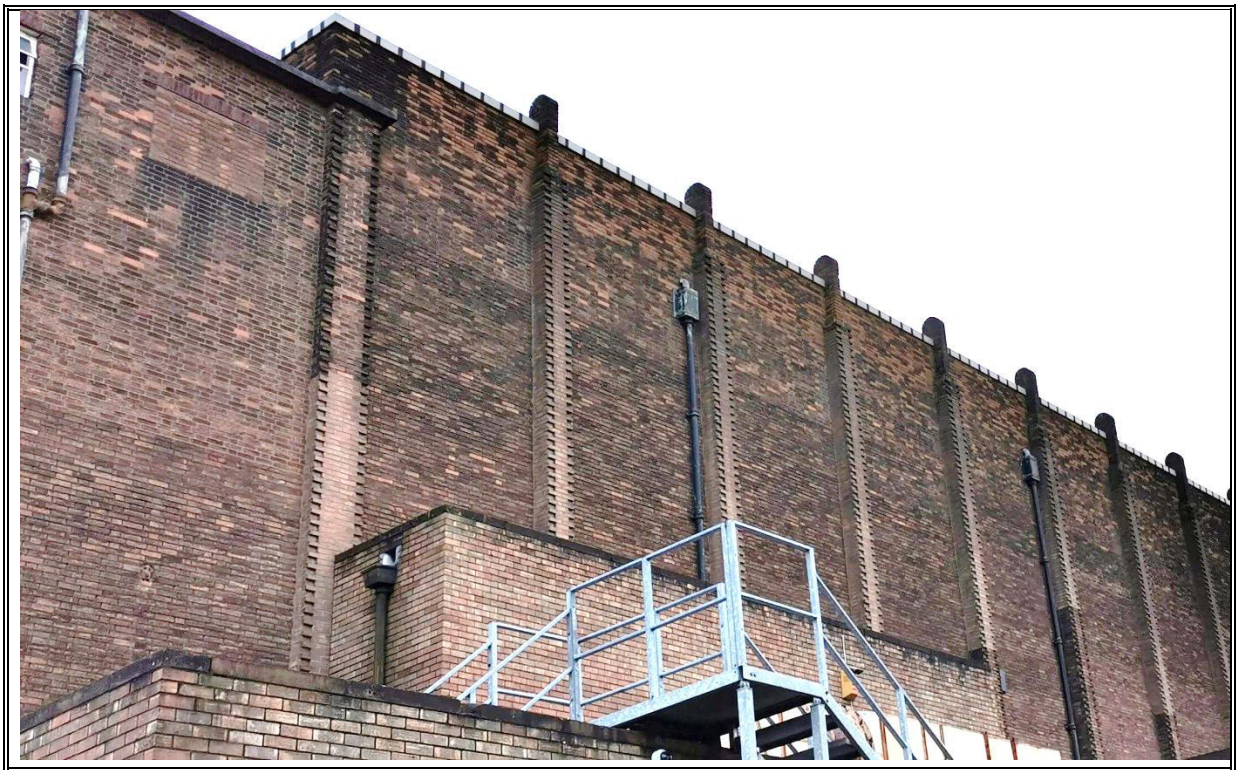

PHOTO NO: 9 **DATE: 3 February 2021**

PHOTO NO: 10 **DATE: 3 February 2021**

PHOTO NO. 9	South elevation main building – showing patchwork brickwork repairs and repointing
PHOTO NO. 10	South elevation poor repointing and rainwater goods

PHOTO NO: 11 **DATE: 3 February 2021**

PHOTO NO: 12 **DATE: 3 February 2021**

PHOTO NO. 11	Single storey roof – poor condition
PHOTO NO. 12	Feature window – crumbling reinforced concrete

PHOTO NO: 13 **DATE: 3 February 2021**

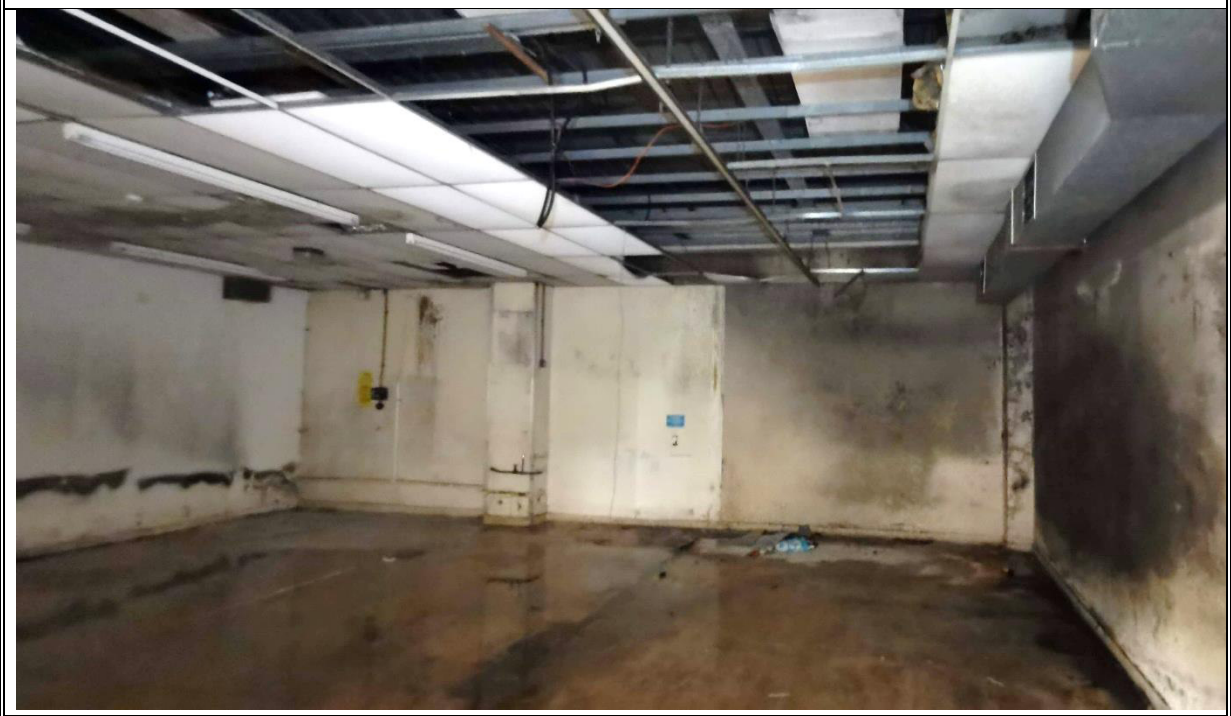

PHOTO NO: 14 **DATE: 3 February 2021**

PHOTO NO. 13	Feature window - corroding reinforcement
PHOTO NO. 14	Single storey section - wet floor from leaking roof

PHOTO NO: 15 **DATE: 3 February 2021**

PHOTO NO: 16 **DATE: 3 February 2021**

PHOTO NO. 15	Proscenium Arch
PHOTO NO. 16	Cut through tie beam

PHOTO NO: 17 **DATE: 3 February 2021**

PHOTO NO: 18 **DATE: 3 February 2021**

PHOTO NO. 17	Raking beam within circle floor
PHOTO NO. 18	Line of screed above presumed upper balcony

PHOTO NO: 19 **DATE: 3 February 2021**

PHOTO NO: 20 **DATE: 3 February 2021**

PHOTO NO. 19	Typical reinforced concrete beam and clay "pot" floor
PHOTO NO. 20	Flat roof edge cantilevers – sign of corroding within reinforcement

APPENDIX B
EXISTING FLOOR PLANS
Technics Drawing No. 5058-1220-01A (sheets 1 to 5)

Ground Floor

GENERAL NOTES:

1. The survey grid is Ordnance Survey National Grid, computed using Lecia Smartnet RTK Network
2. Surveyed boundary features are not necessarily legal boundaries.
3. Dimensions should not be scaled. All dimensions should be checked on site before any fabrication / construction.
4. Copyright of all data produced by Technics Group shall remain with Technics Group unless otherwise specifically agreed.
5. Information provided should not be altered or modified in any way. It should not be used for any purpose other than for which it was intended and should not be issued to other parties without prior agreement of Technics Group.
6. Technics Group cannot accept responsibility for any damage to computer systems which may result from viruses which may be contained in the data provided.
7. If the AutoCAD drawing is being read by any system other than AutoCAD it should be checked against a hard copy. Technics Group cannot accept liability for omissions.
8. All utilities have been identified to the best of the surveyors knowledge. The correct identification of the utility types can not be 100% guaranteed, therefore these should be independently verified prior to use in any design and building works.
9. All pipe diameters and levels are assumed to be correct, however due to non entry to inspection chambers, these should be verified before any works commence.
10. All drainage connections shown are sounded only. They have not been water tested. Services may be obscured by parked cars, leaf litter or building materials etc.
11. External eaves levels are surveyed to lowest tile position.
12. Contours, if applicable, are not shown over hard standing, gravel, banking or flower borders.
13. Preliminary data is generally unchecked therefore it is not guaranteed.

LEGEND:

- Assumed Line no data
- Building
- Door
- Furniture
- Height
- Invert Height
- Levels
- Plant
- Railing
- Sanitary
- Soffitt
- Step
- Walkway
- Window

LEVELS:

56.65	Height Level
9.14	Level observed through void or feature/ceiling
5.41	Soffit Height

HAZID warning tag - this symbol means there is important information that needs to be read regarding an asset

NB: Topographical legend not applicable if Technics utility survey is overlaid onto client's topographical survey.

QLD	Utility line taken from records provided by client and or site features.
GPR	Utility \ feature found using ground probing radar which maybe non-metallic.
RF	Utility \ feature found using radio frequency locating equipment.

STN1 E=458043.509 N=340010.635 H=30.825 Survey control station

Unable to survey area with GPR due to poor ground conditions.

Buildings

OS Buildings

Area not surveyed.

Unidentified subsurface distortion designated with GPR

Overhead electrical tower

X4 Number of ducts entering or exiting the inspection pit

GPR Baseline

SERVICE DEPTHS:

* Depths of services can be measured from different points:

A 1.20 B 1.20 C 1.20

A Indicates where GPR depth is measured from.
B Indicates where depth is measured from when using radio frequency.
C Indicates where depth is taken from on drainage pipes using a tape measure.

ABBREVIATIONS:

Designation:

BLKD	Blockage	MAR	Man Entry Required	UTL	Unable to Lift
D	Depth to Utility	MKR	Marker Post	UTT	Unable to Trace
DIA	Diameter	NFI	No Further Information	WO	Wash Out
DOC	Depth to Cover	NVP	No Visible Pipe		
DTB	Depth to Base	NVV	No Visible Valve		
EOT	End of Designation	OSA	Out of Survey Area		
GPR	Ground Penetrating Radar	P/S	Poor Signal		
ID	Invert Depth	PEV	Polyethylene Valve		
IL	Invert Level	SOR	Start of Run		

Floor Plan:

C=	Ceiling height
FFL-	Finished Floor Level
C/M	Corrugated Metal
C/L	Chain Link

Topographic

BOL	Bollard	RE	Rodding Eye		
BT	British Telecom Cover	RS	Road Sign		
DK	Drop Kerb	RSC	Rolled Steel Column		
EL	Electricity Cover	RSJ	Rolled Steel Joist		
EP	Electricity Pole	RWP	Rain Water Pipe	C/P	Chesnut Paling
FH	Fire Hydrant	SC	Stop Cock	HR	Hand Rail
FFP	Flagged Footpath	SP	Sign Post	I/R	Iron Railing
FL	Floor Level	SS	Street Name Sign	Lat	Lattice
G	Gully	STP	Stand Pipe	P/C	Post and Chain
GM	Gas Meter	SV	Stop Valve	P/R	Post and Rail
GV	Gas Valve	SVP	Soil Vent Pipe	P/W	Post and Wire
HT	Height	TFP	Tarmac Footpath	Ret	Retaining Wall
IC	Inspection Cover	THL	Threshold Level		
LP	Lamp Post	TL	Traffic Light		
LH	Lamp Hole	TP	Telegraph Pole		
MH	Manhole	VP	Vent Pipe		
NB	Notice Board	WM	Water Meter		
OSBM	Ordnance Survey Bench Mark	WP	Waste Pipe		
P	Post	WT	Wall Top		
PB	Post Box	WV	Water Valve		

SURVEY AND DATUM INFORMATION:

ALL LEVELS ARE ORTHOMETRIC HEIGHTS RELATED TO OSGM15 GPS DATUM, COMPUTED USING LEICA SMARTNET RTK NETWORK.

UTILITY NOTES:

No utilities were surveyed as part of this project.

WEATHER CONDITIONS:

Dry

A	22/01/2021	First Issue	LW
P	20/01/2021	Preliminary	LW
Rev.	Date	Revision	Signed

DO NOT SCALE!

Client:	Lidl		
Project:	Church Road North, Wavertree		
Survey Quality:	Measured Building		
Start Date of Survey:	20/12/2020		
Drawing Status: Final	Surveyed: LJM	Drawn: JG	Approved: LJM
Digital File: 5058-1220-01_Ground Floor.dwg	Original Size: A0	Scale: 1:100	Sheet: 1 of 5

Drawing No.: 5058-1220-01	Revision: A

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Fax: 01302 338920
e-mail: Lee.Mcnichol@technicsgroup.com

Sheet

Metres 0 1 2 3 4 5 6 7 8 9 10

First Floor

Sheet

Sheet

Sheet

GENERAL NOTES:

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11. External eaves levels are surveyed to lowest tile position.
12. Contours, if applicable, are not shown over hard standing, gravel, banking or flower borders.
13. Preliminary data is generally unchecked therefore it is not guaranteed.

LEGEND:

Assumed Line no data
Building
Door
Furniture
Height
Invert Height
Levels
Plant
Railing
Sanitary
Soffitt
Step
Walkway
Window

LEVELS:

56.65 Height Level
9.14 Level observed through void or feature/ceiling
5.41 Soffit Height

HAZID warning tag - this symbol means there is important information that needs to be read regarding an asset

NB: Topographical legend not applicable if Technics utility survey is overlaid onto client's topographical survey.

QLD Utility line taken from records provided by client and or site features.
GPR Utility \ feature found using ground probing radar which maybe non-metallic.
RF Utility \ feature found using radio frequency locating equipment.

STN1 E=458043.509 N=340010.635 H=30.825 Survey control station

Unable to survey area with GPR due to poor ground conditions.

Buildings

Area not surveyed.

OS Buildings

Unidentified subsurface distortion designated with GPR

Overhead electrical tower

X4 Number of ducts entering or exiting the inspection pit

GPR Baseline

SERVICE DEPTHS:

* Depths of services can be measured from different points:

A 1.20 B 1.20 C 1.20

A Indicates where GPR depth is measured from.
B Indicates where depth is measured from when using radio frequency.
C Indicates where depth is taken from on drainage pipes using a tape measure.

ABBREVIATIONS:

Designation:

BLKD	Blockage	MAR	Man Entry Required	UTL	Unable to Lift
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DIA	Diameter	NFI	No Further Information	WO	Wash Out
DOC	Depth to Cover	NVP	No Visible Pipe		
DTB	Depth to Base	NVV	No Visible Valve		
EOT	End of Designation	OSA	Out of Survey Area		
GPR	Ground Penetrating Radar	P/S	Poor Signal		
ID	Invert Depth	PEV	Polyethylene Valve		
IL	Invert Level	SOR	Start of Run		

Floor Plan:

C=	Ceiling height
FFL-	Finished Floor Level
C/M	Corrugated Metal
C/L	Chain Link

Topographic

BOL	Bollard	RE	Rodding Eye		
BT	British Telecom Cover	RS	Road Sign		
DK	Drop Kerb	RSC	Rolled Steel Column		
EL	Electricity Cover	RSJ	Rolled Steel Joist		
EP	Electricity Pole	RWP	Rain Water Pipe	C/P	Chesnut Paling
FH	Fire Hydrant	SC	Stop Cock	HR	Hand Rail
FFP	Flagged Footpath	SP	Sign Post	I/R	Iron Railing
FL	Floor Level	SS	Street Name Sign	Lat	Lattice
G	Gully	STP	Stand Pipe	P/C	Post and Chain
GM	Gas Meter	SV	Stop Valve	P/R	Post and Rail
GV	Gas Valve	SVP	Soil Vent Pipe	P/W	Post and Wire
HT	Height	TFP	Tarmac Footpath	Ret	Retaining Wall
IC	Inspection Cover	THL	Threshold Level		
LP	Lamp Post	TL	Traffic Light		
LH	Lamp Hole	TP	Telegraph Pole		
MH	Manhole	VP	Vent Pipe		
NB	Notice Board	WM	Water Meter		
OSBM	Ordnance Survey Bench Mark	WP	Waste Pipe		
P	Post	WT	Wall Top		
PB	Post Box	WV	Water Valve		

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UTILITY NOTES:

No utilities were surveyed as part of this project.

WEATHER CONDITIONS:

Dry

A	22/01/2021	First Issue	LW
P	20/01/2021	Preliminary	LW
Rev.	Date	Revision	Signed

DO NOT SCALE!

Client:	Lidl		
Project:	Church Road North, Wavertree		
Survey Quality:	Measured Building		
Start Date of Survey:	20/12/2020		
Drawing Status: Final	Surveyed: LJM	Drawn: JG	Approved: LJM
Digital File: 5058-1220-01_First Floor.dwg	Original Size: A0	Scale: 1:100	Sheet: 2 of 5

Drawing No.: 5058-1220-01	Revision: A

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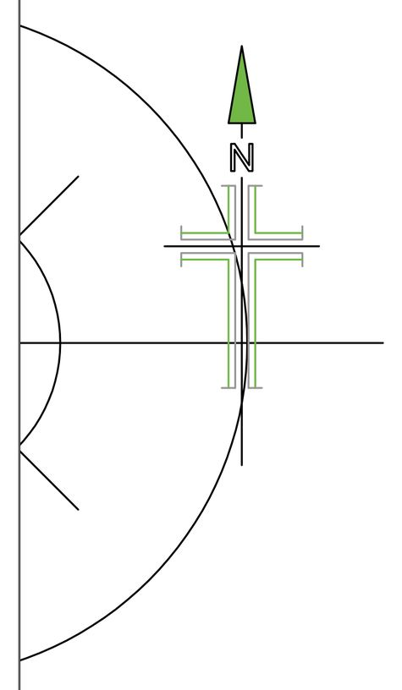

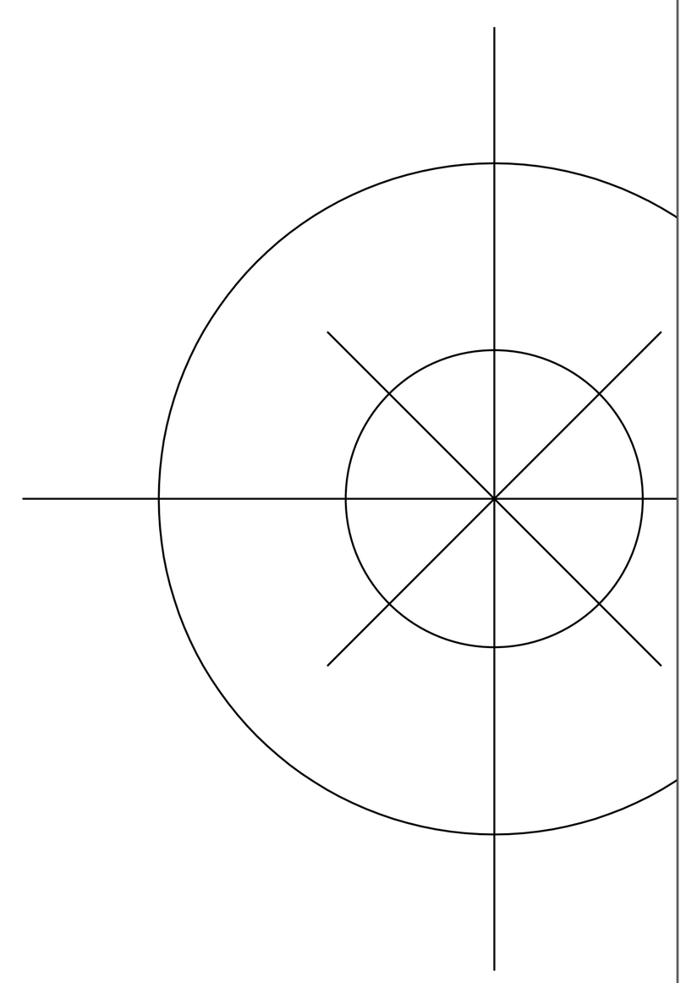

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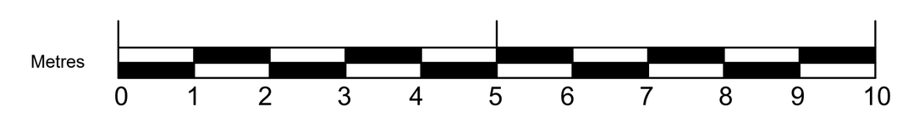

Sheet

Second Floor

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13. Preliminary data is generally unchecked therefore it is not guaranteed.

LEGEND:

- Assumed Line no data
- Building
- Door
- Furniture
- Height
- Invert Height
- Levels
- Plant
- Railing
- Sanitary
- Soffitt
- Step
- Walkway
- Window

LEVELS:

- 56.65 Height Level
- 9.14 Level observed through void or feature/ceiling
- 5.41 Soffit Height

HAZID warning tag - this symbol means there is important information that needs to be read regarding an asset

NB: Topographical legend not applicable if Technics utility survey is overlaid onto client's topographical survey.

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RF Utility \ feature found using radio frequency locating equipment.

STN1 E=458043.509 N=340010.635 H=30.825 Survey control station

Unable to survey area with GPR due to poor ground conditions.

Area not surveyed.

Unidentified subsurface distortion designated with GPR

X4 Number of ducts entering or exiting the inspection pit

Buildings

OS Buildings

Overhead electrical tower

GPR Baseline

SERVICE DEPTHS:

* Depths of services can be measured from different points:

A 1.20 B 1.20 C 1.20

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DTB	Depth to Base	NVV	No Visible Valve		
EOT	End of Designation	OSA	Out of Survey Area		
GPR	Ground Penetrating Radar	P/S	Poor Signal		
ID	Invert Depth	PEV	Polyethylene Valve		
IL	Invert Level	SOR	Start of Run		

Floor Plan:

C=	Ceiling height
FFL-	Finished Floor Level
C/M	Corrugated Metal
C/L	Chain Link

Topographic

BOL	Bollard	RE	Rodding Eye		
BT	British Telecom Cover	RS	Road Sign		
DK	Drop Kerb	RSC	Rolled Steel Column		
EL	Electricity Cover	RSJ	Rolled Steel Joist		
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G	Gully	STP	Stand Pipe	P/C	Post and Chain
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UTILITY NOTES:

No utilities were surveyed as part of this project.

WEATHER CONDITIONS:

Dry

A	22/01/2021	First Issue	LW
P	20/01/2021	Preliminary	LW
Rev.	Date	Revision	Signed

DO NOT SCALE!

Client:	Lidl		
Project:	Church Road North, Wavertree		
Survey Quality:	Measured Building		
Start Date of Survey:	20/12/2020		
Drawing Status: Final	Surveyed: LJM	Drawn: JG	Approved: LJM
Digital File: 5058-1220-01_Second Floor.dwg	Original Size: A0	Scale: 1:100	Sheet: 3 of 5

Drawing No.: 5058-1220-01	Revision: A

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Fax: 01302 338920
e-mail: Lee.Mcnichol@technicsgroup.com

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Third Floor

GENERAL NOTES:

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LEGEND:

- Assumed Line no data
- Building
- Door
- Furniture
- Height
- Invert Height
- Levels
- Plant
- Railing
- Sanitary
- Soffitt
- Step
- Walkway
- Window

LEVELS:

56.65 Height Level
9.14 Level observed through void or feature/ceiling
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STN1 E=458043.509 N=340010.635 H=30.825 Survey control station

Unable to survey area with GPR due to poor ground conditions.
Buildings
Area not surveyed.
OS Buildings
Unidentified subsurface distortion designated with GPR
Overhead electrical tower
X4 Number of ducts entering or exiting the inspection pit
GPR Baseline

SERVICE DEPTHS:

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Floor Plan:

C=	Ceiling height
FFL-	Finished Floor Level
C/M	Corrugated Metal
C/L	Chain Link

Topographic

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UTILITY NOTES:

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WEATHER CONDITIONS:

Dry

Rev.	Date	Revision	Signed
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DO NOT SCALE!

Client:	Lidl		
Project:	Church Road North, Wavertree		
Survey Quality:	Measured Building		
Start Date of Survey:	20/12/2020		
Drawing Status: Final	Surveyed: LJM	Drawn: JG	Approved: LJM
Digital File: 5058-1220-01_Third Floor.dwg	Original Size: A0	Scale: 1:50	Sheet: 4 of 5
Drawing No.: 5058-1220-01			Revision: A

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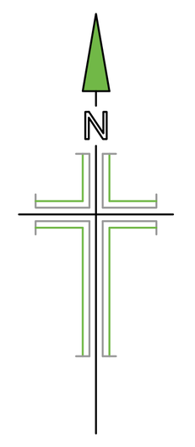
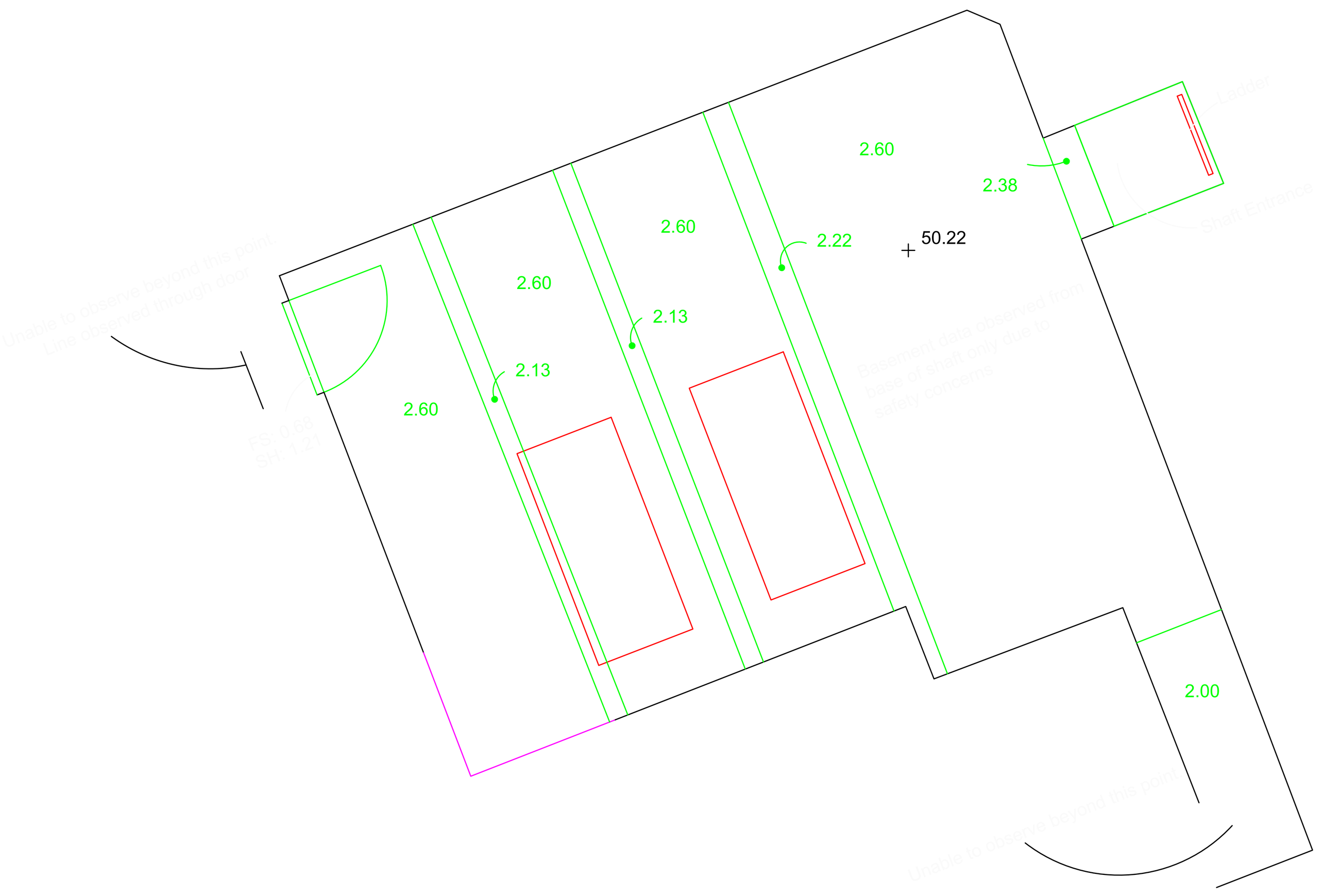
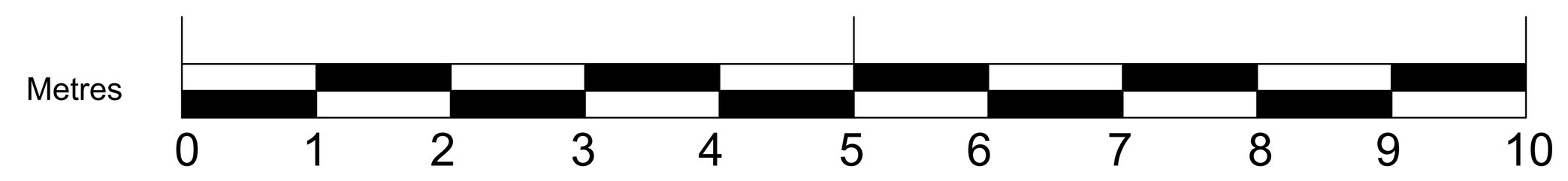
Sheet







Basement

Sheet

Sheet

Sheet

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WEATHER CONDITIONS:

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Start Date of Survey:	20/12/2020		
Drawing Status: Final	Surveyed: LJM	Drawn: JG	Approved: LJM
Digital File: 5058-1220-01_Basement.dwg	Original Size: A0	Scale: 1:50	Sheet: 5 of 5

Drawing No.:	Revision:
5058-1220-01	A

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APPENDIX C
EXTRACT, OCTOBER 1934 THE STRUCTURAL ENGINEER
"STEELWORK IN CINEMA AND THEATRE CONSTRUCTION"

STEELWORK IN CINEMA AND THEATRE CONSTRUCTION*

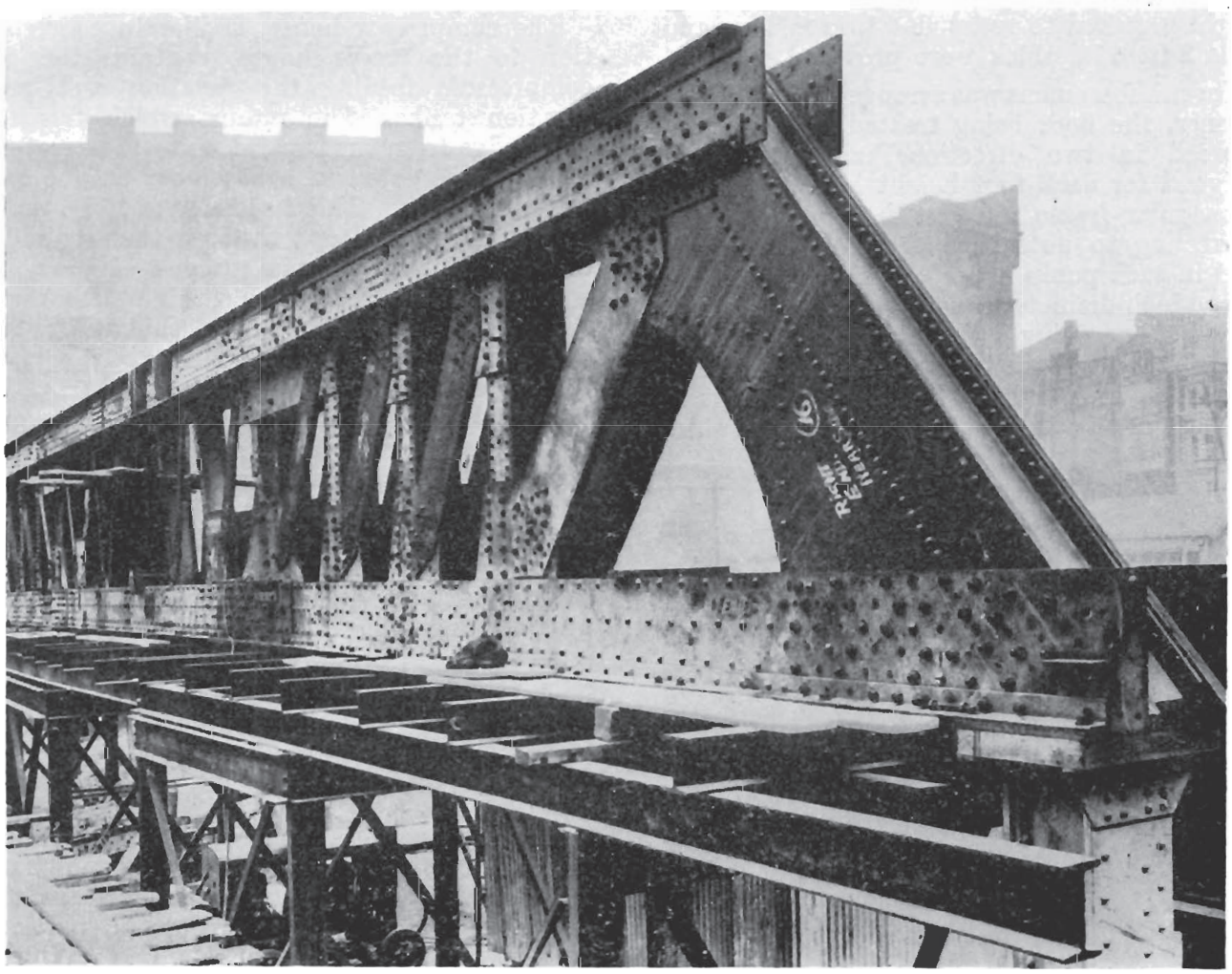
By G. E. COOPER (Associate Member).

FEW buildings present so many difficulties to the architect and engineer as cinemas and theatres, and apart from the exacting limitations imposed by various authorities which tend to cause complications, there remains the major question of method of construction.

To conform to the high standards of comfort called for by present-day audiences, a more or less standardised form of balcony construction has come into vogue—standardised as regards principle, but varying considerably in details.

* *Précis of paper read before the South Wales and Monmouthshire Branch of the Institution of Structural Engineers on the 22nd January and the 12th February, 1934.*

First we have the main girder which supports the rakers and cantilever and therefore the major portion of the dead and live load of the balcony. Usually it is a built up girder of plates and angles, occasionally a lattice construction, dependent on span, loading and permissible depth. Depth is generally the greatest restriction, and the relationship of depth to span should be in the neighbourhood of 1/12 with a limit in depth of web plate to 90 in. for plate girders. Outside these limits the adoption of lattice construction would doubtless prove more economical.



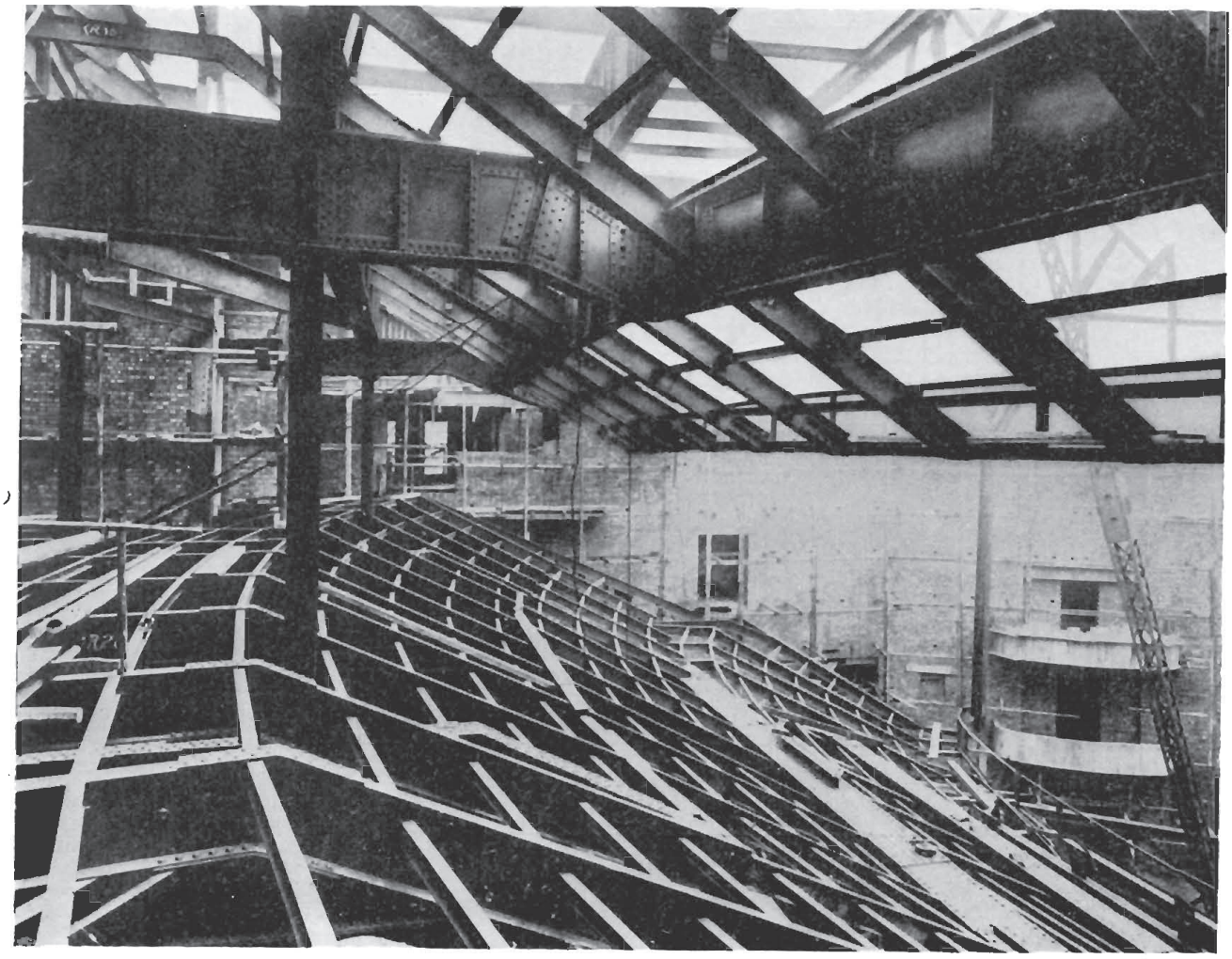
Main Girder, Dominion Theatre.

To maintain reasonable cantileverage in radial balconies, wing girders are introduced to carry the side rakers, whilst in unusually large balconies, or for constructional reasons, a secondary girder is sometimes introduced parallel to the main girder and supported on the wing girders.

Rakers and cantilevers present an interesting problem and may be of several types. For reasons of cost, the designer's aim should be to utilise joist sections, but this is not always possible, due to the peculiar structural and architectural requirements, and one is forced to adopt the lattice or built up types.

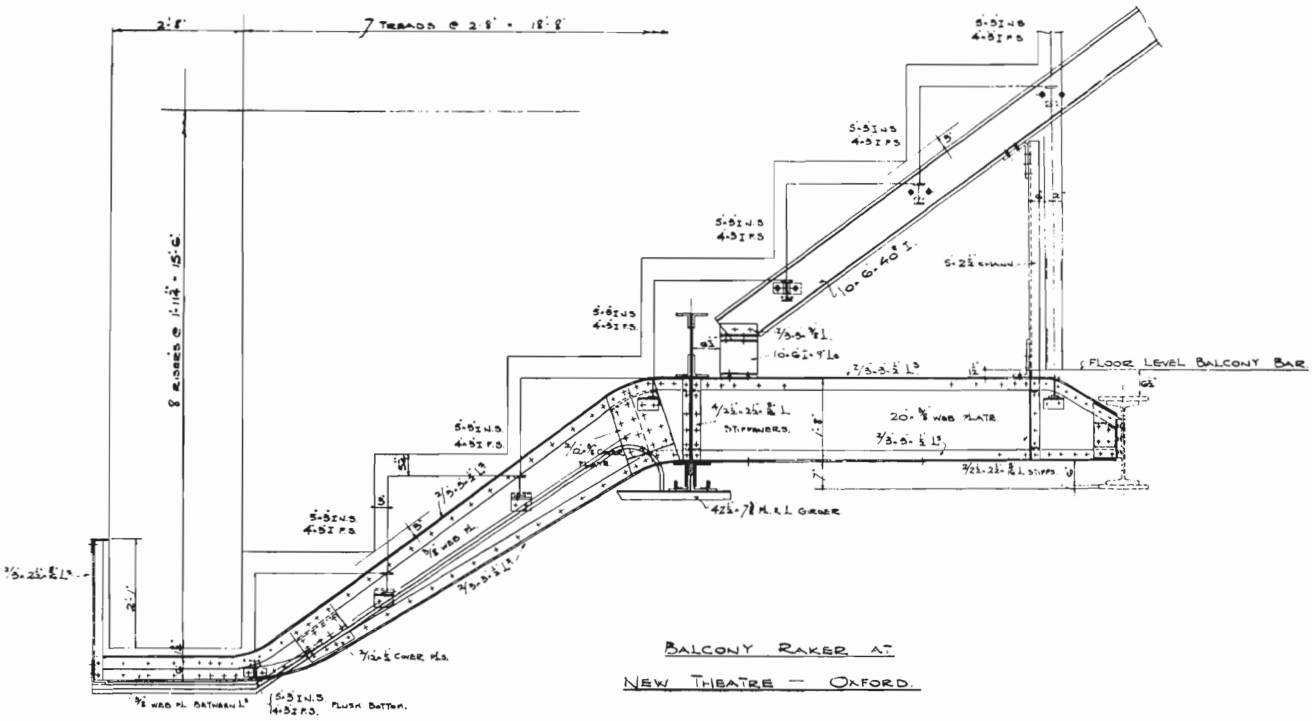
The latter type lends itself admirably where the contour of a curved ceiling has to be followed, as is generally the case of an upper circle or gallery. Here, of course, the ceiling line must follow approximately the stepping line in order to give headroom over the balcony below.

Deflection is important, and must be carefully considered. Since the deflection of each girder in a balcony varies it will be found that when the rakers are fixed the levels of the cantilever tips will not be correct unless great care has been taken. The varying deflections are communicated from the main girder, through the wing girders and secondary girder to the cantilever tips so that any error is considerably multiplied. Theory is not a reliable guide in deciding a camber to obviate this difficulty, and experience suggests that the very least camber is best ; probably $\frac{1}{16}$ in. for every 10 ft. of span of girder is a reliable proportion. Experience and careful designing alone can help the engineer in this intricate problem, whilst the necessity for girders as deep as possible and riveted connections is clearly indicated.



Balcony and Circle, Dominion Theatre.

Steelwork in Cinema and Theatre Construction.



Steelwork in Cinema and Theatre Construction.

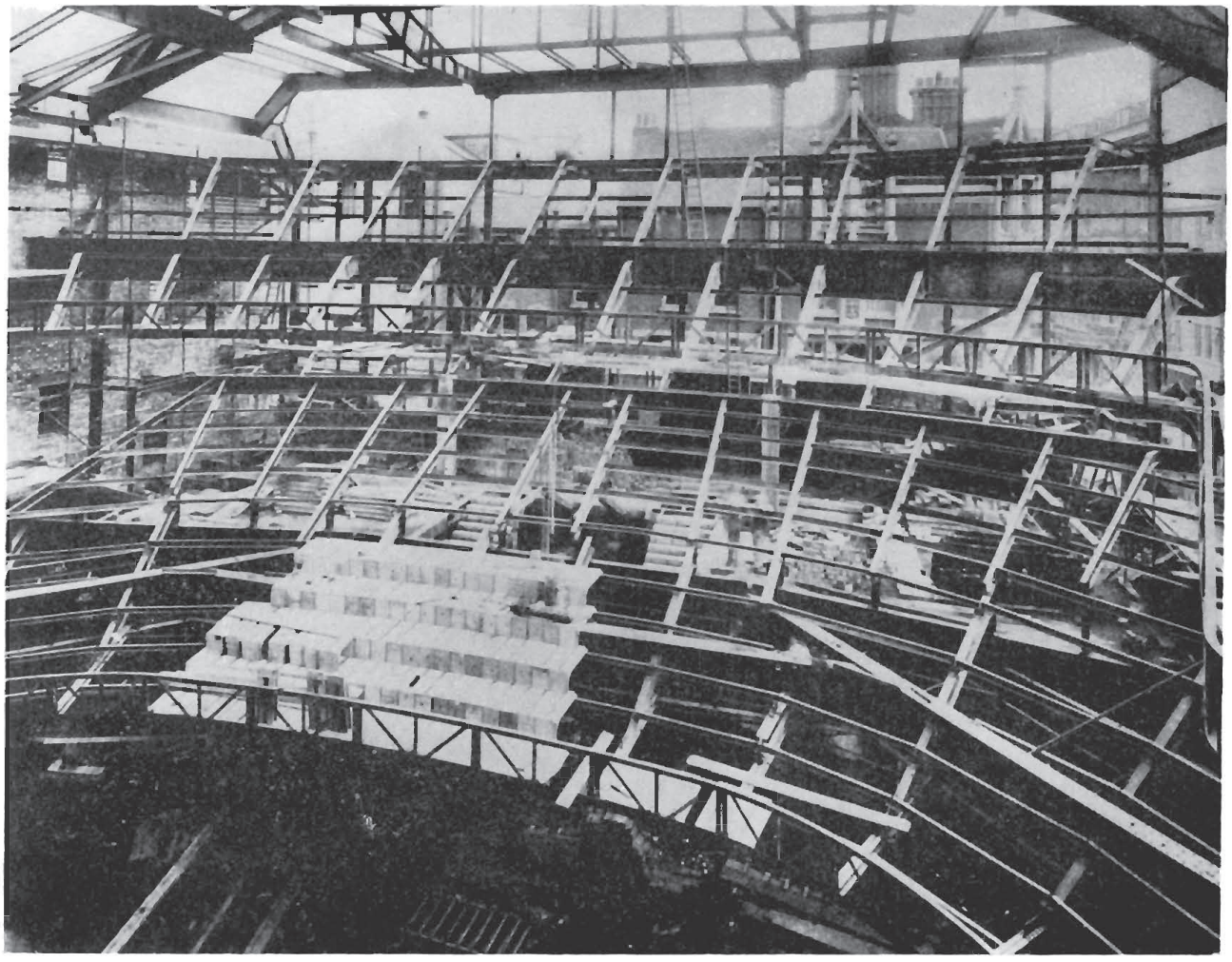
Thrust. Theoretically the horizontal thrust on the balcony steel is equal to the vertical load multiplied by the sine of the angle of inclination of the rakers, and it would therefore appear that the framing to the side walls and foyers has to absorb considerable lateral load.

Whilst undoubtedly a thrust does not occur, providing the main girders are sufficiently rigid and the rakers are well connected to the foyer framing, practical experience tends to prove that this thrust is not nearly so large as calculated, and apart from the two precautions mentioned, no exceptional measures need be adopted to deal with it.

Stepping. Several types of balcony stepping are in vogue, but I suggest that steel filler joists and precast concrete steppings are a combination difficult to improve upon for the following reasons. First, the joists are not costly, the fabrication charges being negligible as they are templated with the main steelwork. Secondly, they are erected with the rakers and main steelwork, no special operations being necessary. Thirdly, in conjunction with precast steps all delay in fixing the latter is avoided, because they can be cast by the makers from the engineer's layout at the same time as the steel is being fabricated. Lastly, steel fillers bolted to the rakers give a positive stiffening to the whole balcony. I think, therefore, that we can claim that this construction is initially cheap, and, more important from the architects' and builders' points of view, avoids delay.

It is not advisable to have stepping joists with less than $2\frac{1}{2}$ in. flanges—a flange width of 3 in. being desirable. Generally such joists need not exceed 5 in. × 3 in. or 6 in. × 3 in.

Steelwork lends itself admirably for forming

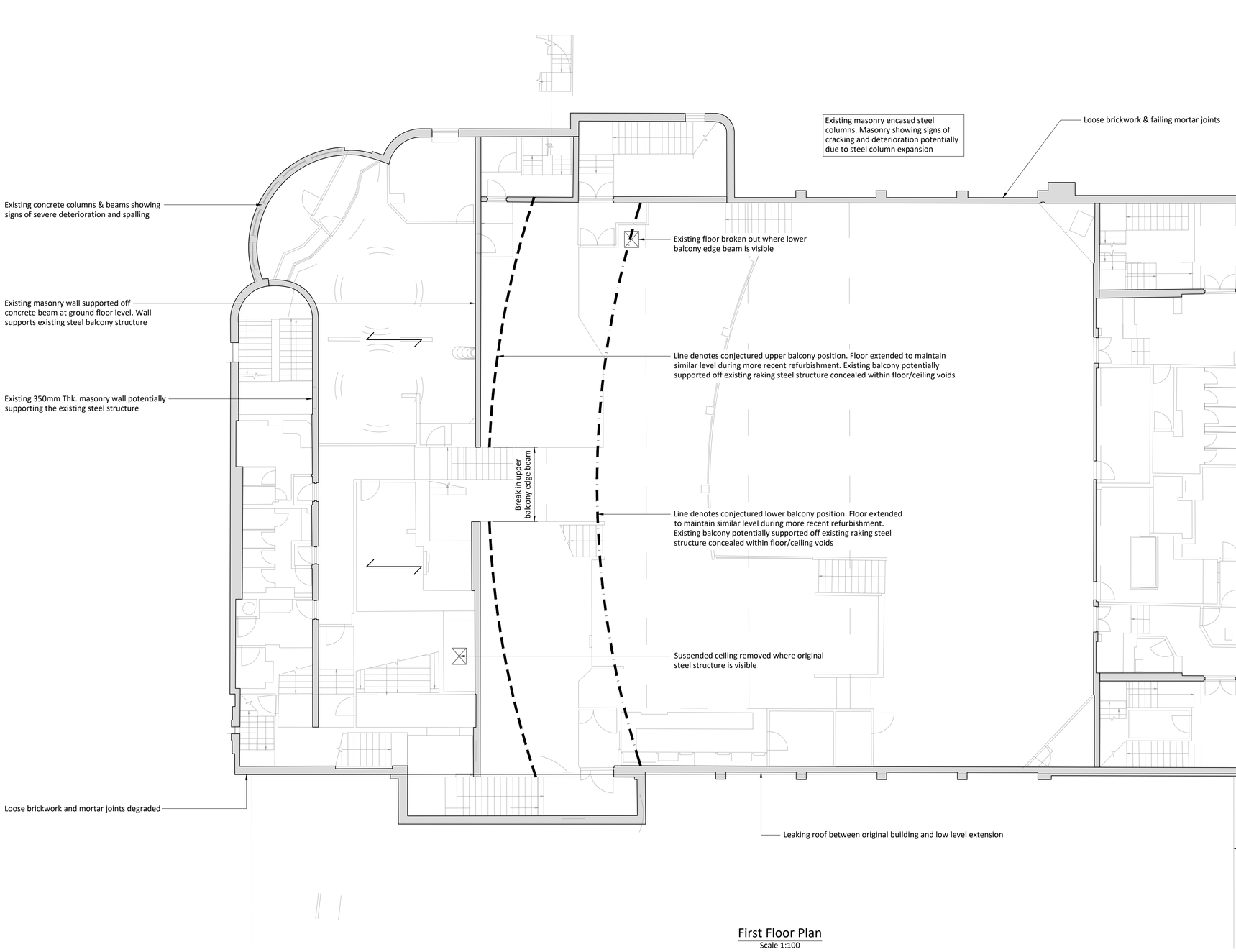


Balcony, Oxford Theatre, showing pre-cast stepping.

Steelwork in Cinema and Theatre Construction.

APPENDIX D
INSPECTION RECORD DRAWINGS
Drawing Nos. 09-143-001 & 09-143-002

A1



First Floor Plan
Scale 1:100

Key

- Denotes span of existing raking beams
- Denotes existing conjectured lower balcony line
- Denotes existing conjectured upper balcony line
- Denotes existing masonry walls

DESCRIPTION	REV	DATE	CHK	APR

beamconsulting

Beam Consulting
14 Bond Street
Wakefield
WF1 2QP
Tel: 01924 361653
Fax: 01924 364631

PROJECT
Church Road North
Wavertree

DRAWING TITLE
Inspection Notes
(Sheet 1 of 2)

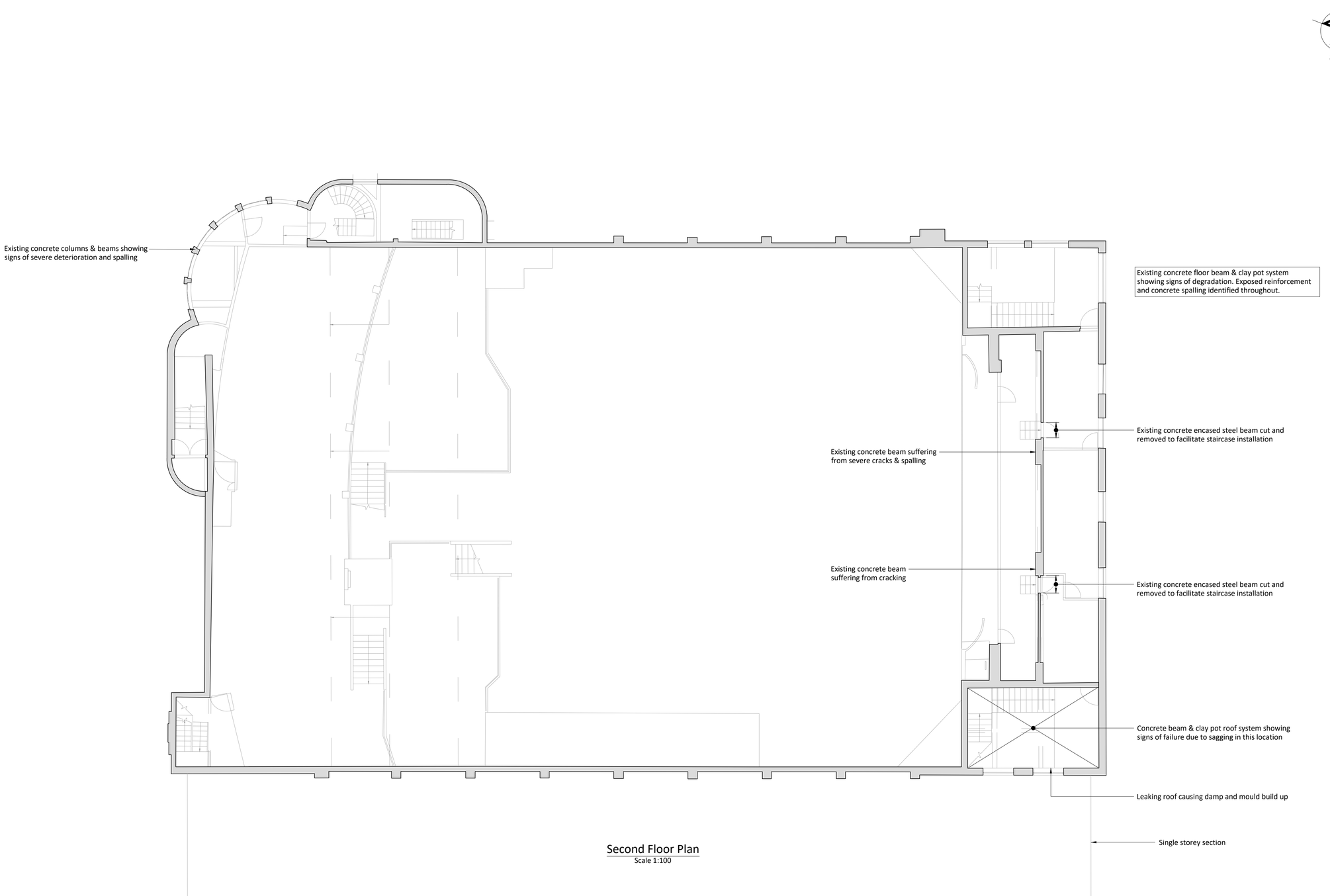
CLIENT
Lidl Great Britain Limited

STATUS
Information

DRAWN	KK	DATE	08/02/2021
CHECKED	KGP	SCALE	AS SHOWN @ A1
APPROVED	-		

DRAWING NUMBER	REVISION
09-143-001	-

A1



Second Floor Plan
Scale 1:100

DESCRIPTION	REV	DATE	CHK	APR

beamconsulting

Beam Consulting
14 Bond Street
Wakefield
WF1 2QP
Tel: 01924 361653
Fax: 01924 364631

PROJECT
Church Road North
Wavertree

DRAWING TITLE
Inspection Notes
(Sheet 2 of 2)

CLIENT
Lidl Great Britain Limited

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DRAWING NUMBER	REVISION
09-143-002	-