

The West Midlands Rail Freight Interchange Order 201X

Intended for
Four Ashes Limited

Document type
Report

Date
February 2017

WEST MIDLANDS INTERCHANGE TECHNICAL APPENDIX 2.5

| | |
|-------------|-------------------------------------|
| Revision | Final |
| Date | 1st February 2017 |
| Made by | Emma Jones |
| Checked by | Matt Royall |
| Approved by | Matt Royall |
| Description | Appendix 2.5 |

Ref UK15-22821_2-Appendix 2.5

CONTENTS

1. INTRODUCTION
2. METHODOLOGY
3. RESULTS
4. CONCLUSION

1. INTRODUCTION

This appendix forms part of the Environmental Statement for the West Midlands Interchange development proposals. It sets out the work that has been completed on the scheme in relation to daylight, sunlight and overshadowing.

The Secretary of State's scoping opinion stated insufficient information had been provided to support the request to scope daylight, sunlight and overshadowing out of the assessment. The Secretary of State noted that specific consideration should be given to potential effects on residential receptors on Croft Lane, to the north of the Proposed Development on the A5 and to the west of the A449.

2. METHODOLOGY

Additional work has been undertaken to model the building mass that will create shadows and the impact these may have on the surrounding areas. This has been undertaken using the illustrative masterplan and proposed height zoning parameter plan. The modelling was undertaken by Chetwoods using the computer software Autodesk Revit 2016. This enabled placement of the buildings in their actual ordnance survey location using world coordinates and then render the shadows at the selected day and time within the year. This is a very accurate process of determining building shadows.

3. RESULTS

The drawings appended to this report illustrate the following:

- 4049-1055-01 shows the distance required as to not effect sunlight entering a window using a cill height of 1600mm (shown via the dotted redline) from each building using the maximum building height proposed per plot. This therefore indicates that no existing property will have any impact from the proposed buildings to daylight entering their existing windows; and
- 4049-1060 to 1071 rev 01 show the shadows that will be created during key times and dates of the year. Please note that where the whole development is in shadow this is due to darkness at that time of the day. When the shadows are cast longer near to the period of total darkness it should be noted that the sun will have only just risen or set so the effect of the shadow at that time of day will be minimal. This therefore shows that no existing property will have any significant impact from the proposed buildings to overshadowing.

4. CONCLUSION

The modelling undertaken shows that no existing property will have any significant impact from the proposed buildings to overshadowing. On this basis and considering the modelling undertaken the decision has been taken to scope daylight, sunlight and overshadowing out of the assessment presented in the Environmental Statement.

FIGURES



1 21st March @ 8.00



2 21st March @ 9.00



3 21st March @ 10.00



4 21st March @ 11.00



5 21st March @ Noon



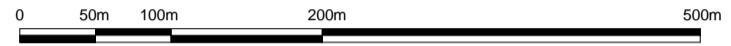
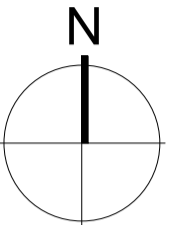
6 21st March @ 13.00

Notes:
Contractors must verify all dimensions on site before commencing any work or shop drawings. This drawing is not to be scaled. Use figured dimensions only.


Subject to statutory approvals and survey.
Areas:
Building areas are liable to adjustment over the course of the design process due to the ongoing construction detailing developments.

Ordinance Survey used in accordance with licence number 100031961

chetwoods
architects
32 frederick street birmingham B1 3HH
tel 0121 234 7500 fax 0121 234 7501 www.chetwoods.com



01 Updated to show building footprints 26/01/17 IK

| | |
|--|---|
|  West Midlands Interchange | |
| Project THE WEST MIDLANDS RAIL FREIGHT INTERCHANGE ORDER 201X | |
| Drawing Status ILLUSTRATIVE | |
| Drawing Title Drawing Size A1 SPRING SOLAR SHADOW SIMULATION STUDY | |
| Regulation 5 (2) (0) | Document 2.7 |
| Drawn IK Date 20/01/17 Drawing No. 4049 -1060 | Scale 1:15000 Reviewed PS Rev. 01 |

21st of March (Spring Equinox) - Sun Rise - 7.11 / Sun set - 19.20



7 21st March @ 14.00



8 21st March @ 15.00



9 21st March @ 16.00



10 21st March @ 17.00



11 21st March @ 18.00



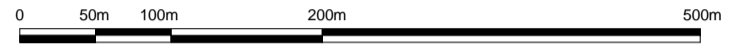
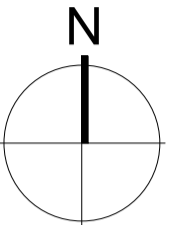
12 21st March @ 19.00

Notes:
Contractors must verify all dimensions on site before commencing any work or shop drawings. This drawing is not to be scaled. Use figured dimensions only.

Subject to statutory approvals and survey.
Areas:
Building areas are liable to adjustment over the course of the design process due to the ongoing construction detailing developments.

Ordinance Survey used in accordance with licence number 100031961

chetwoods
architects
32 frederick street birmingham B1 3HH
tel 0121 234 7500 fax 0121 234 7501 www.chetwoods.com



01 Updated to show building footprints 26/01/17 IK

| | |
|---|----------------------|
| | |
| Project THE WEST MIDLANDS RAIL FREIGHT INTERCHANGE ORDER 201X | |
| Drawing Status ILLUSTRATIVE | |
| Drawing Title SPRING SOLAR SHADOW SIMULATION STUDY | |
| Regulation 5 (2) (0) | |
| Document 2.7 | |
| Drawn IK | Date 20/01/17 |
| Scale 1:15000 | Reviewed PS |
| Drawing No. 4049 -1061 | Rev. 01 |

21st of March (Spring Equinox) - Sun Rise - 7.11 / Sun set - 19.20



1 21st June @ 8.00



2 21st June @ 9.00



3 21st June @ 10.00



4 21st June @ 11.00



5 21st June @ Noon



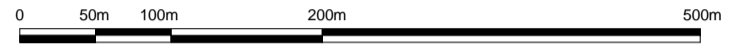
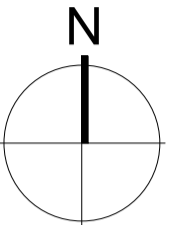
6 21st June @ 13.00

Notes:
Contractors must verify all dimensions on site before commencing any work or shop drawings. This drawing is not to be scaled. Use figured dimensions only.

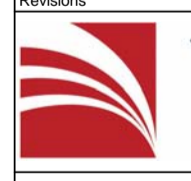
Subject to statutory approvals and survey.
Areas:
Building areas are liable to adjustment over the course of the design process due to the ongoing construction detailing developments.

Ordinance Survey used in accordance with licence number 100031961

chetwoods
architects
32 frederick street birmingham B1 3HH
tel 0121 234 7500 fax 0121 234 7501 www.chetwoods.com



01 Updated to show building footprints 26/01/17 IK

| | |
|--|---|
|  West Midlands Interchange | |
| Project THE WEST MIDLANDS RAIL FREIGHT INTERCHANGE ORDER 201X | |
| Drawing Status ILLUSTRATIVE | |
| Drawing Title Drawing Size A1 SUMMER SOLAR SHADOW SIMULATION STUDY | |
| Regulation 5 (2) (0) | Document 2.7 |
| Drawn IK Date 20/01/17 Drawing No. 4049 -1065 | Scale 1:15000 Reviewed PS Rev. 01 |

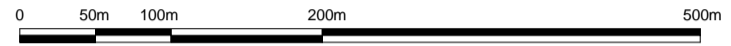
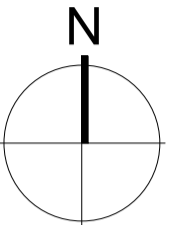
Notes:
Contractors must verify all dimensions on site before commencing any work or shop drawings. This drawing is not to be scaled. Use figured dimensions only.

Subject to statutory approvals and survey.

Areas:
Building areas are liable to adjustment over the course of the design process due to the ongoing construction detailing developments.

Ordinance Survey used in accordance with licence number 100031961

chetwoods
architects
32 frederick street birmingham B1 3HH
tel 0121 234 7500 fax 0121 234 7501 www.chetwoods.com



7 21st June @ 14.00

8 21st June @ 15.00

9 21st June @ 16.00



10 21st June @ 17.00

11 21st June @ 18.00

12 21st June @ 19.00

21st of June (Summer Solstice) - Sun Rise - 4.48 / Sun set - 21.32

01 Updated to show building footprints 26/01/17 IK

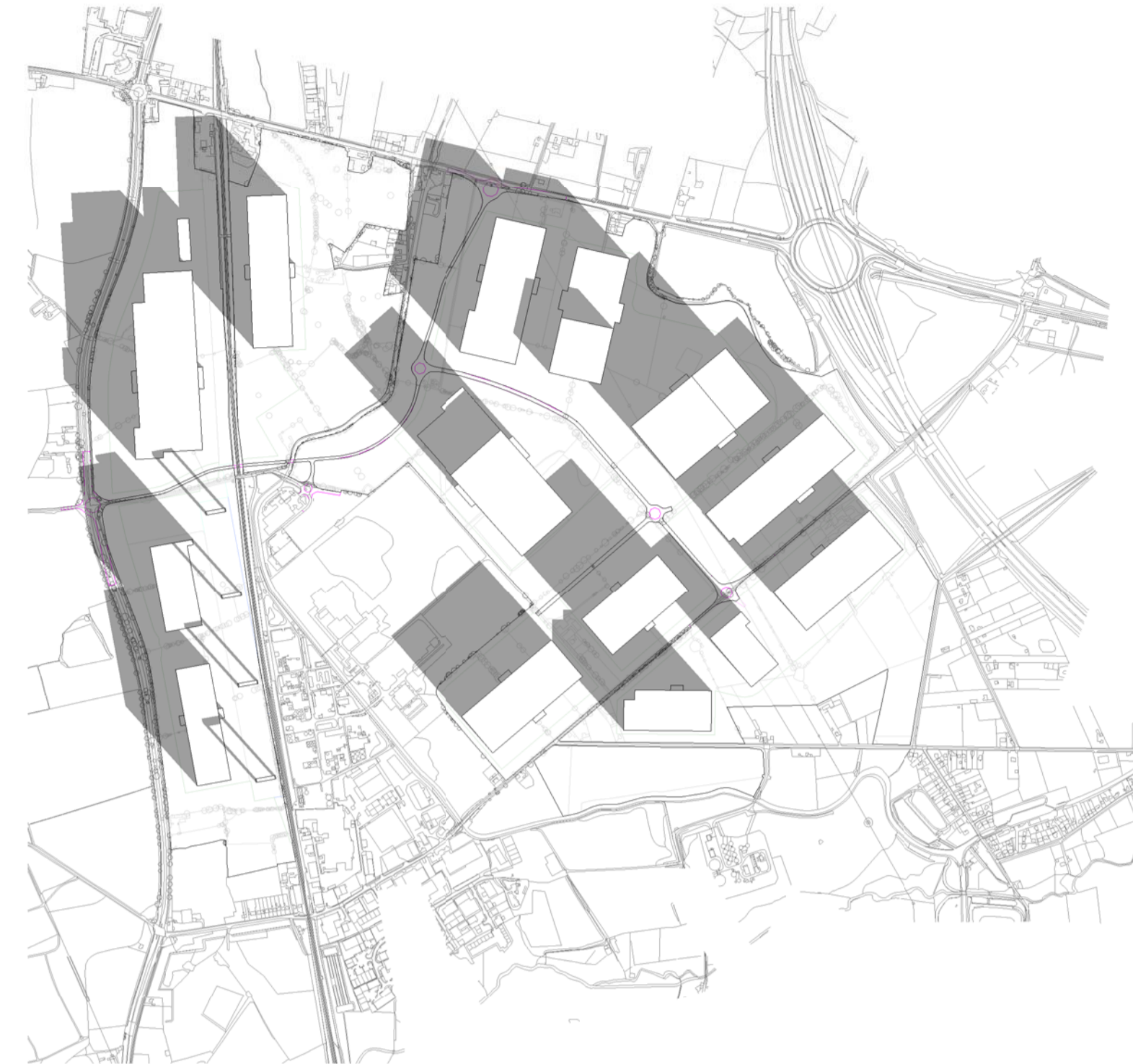
| | |
|--|-----------------|
| | |
| Project THE WEST MIDLANDS RAIL FREIGHT INTERCHANGE ORDER 201X | |
| Drawing Status ILLUSTRATIVE | |
| Drawing Title SUMMER SOLAR SHADOW SIMULATION STUDY | |
| Drawing Size A1 | |
| Regulation 5 (2) (0) | Document 2.7 |
| Drawn IK Date 20/01/17 | Scale 1:15000 |
| Reviewed PS | Rev. 01 |
| Drawing No. 4049 -1066 | |



1 21st December @ 8.00



2 21st December @ 9.00



3 21st December @ 10.00



4 21st December @ 11.00



5 21st December @ Noon



6 21st December @ 13.00

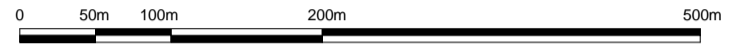
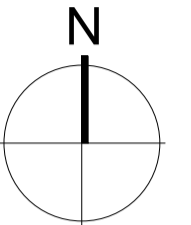
Notes:
Contractors must verify all dimensions on site before commencing any work or shop drawings. This drawing is not to be scaled. Use figured dimensions only.

Subject to statutory approvals and survey.


Areas:
Building areas are liable to adjustment over the course of the design process due to the ongoing construction detailing developments.

Ordinance Survey used in accordance with licence number 100031961

chetwoods
architects
32 frederick street birmingham B1 3HH
tel 0121 234 7500 fax 0121 234 7501 www.chetwoods.com



01 Updated to show building footprints 26/01/17 IK

| | |
|--|------------------------|
|  West Midlands Interchange | |
| Project THE WEST MIDLANDS RAIL FREIGHT INTERCHANGE ORDER 201X | |
| Drawing Status ILLUSTRATIVE | |
| Drawing Title WINTER SOLAR SHADOW SIMULATION STUDY | |
| Drawing Size A1 | |
| Regulation 5 (2) (0) | Document 2.7 |
| Drawn IK Date 20/01/17 Scale 1:15000 Drawing No. 4049 -1070 | Reviewed PS Rev. 01 |



7 21st December @ 14.00



8 21st December @ 15.00



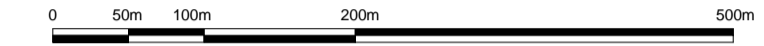
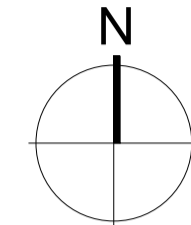
9 21st December @ 16.00

Notes:
Contractors must verify all dimensions on site before commencing any work or shop drawings. This drawing is not to be scaled. Use figured dimensions only.

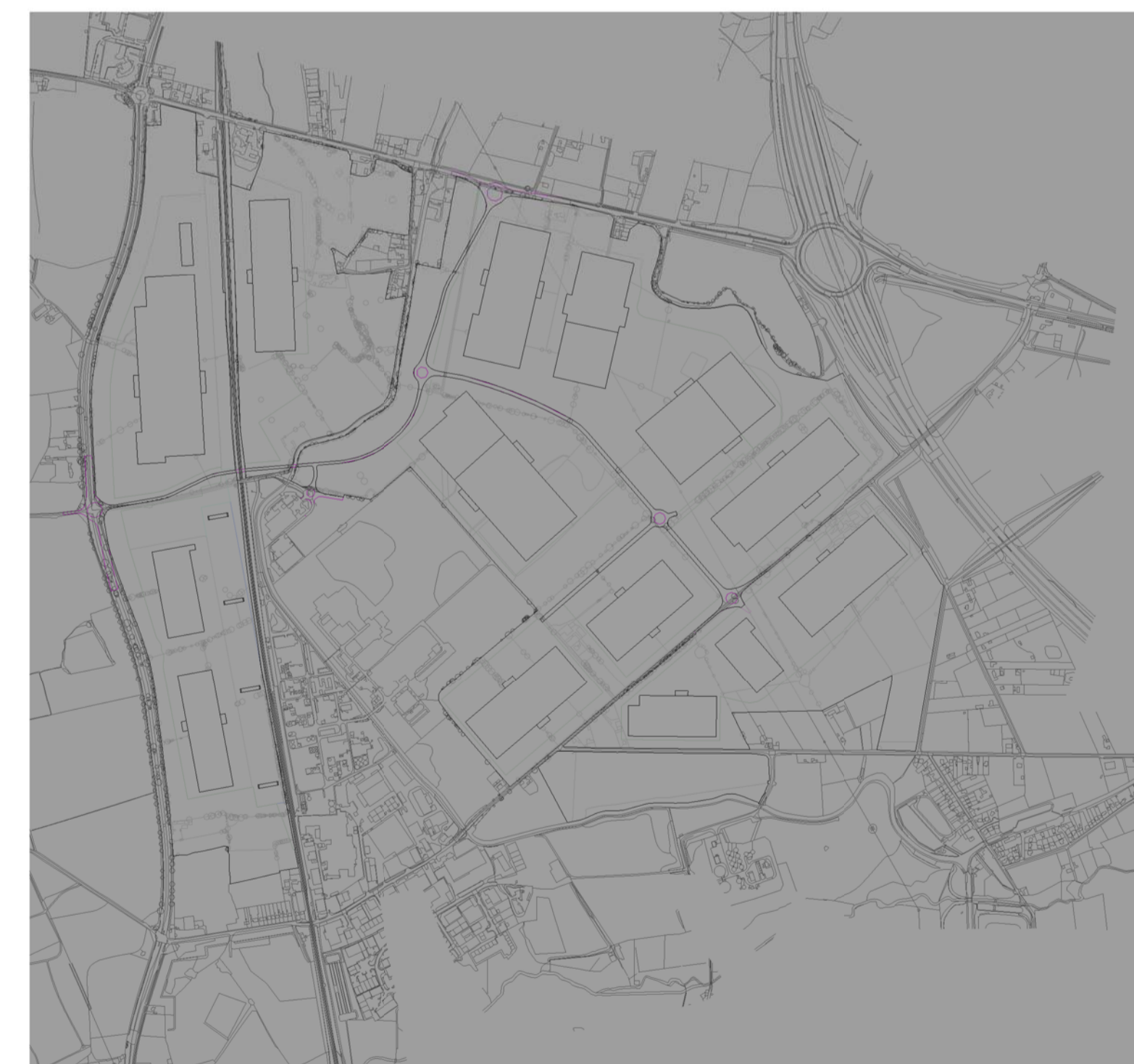
Subject to statutory approvals and survey.
Areas:
Building areas are liable to adjustment over the course of the design process due to the ongoing construction detailing developments.

Ordinance Survey used in accordance with licence number 100031961

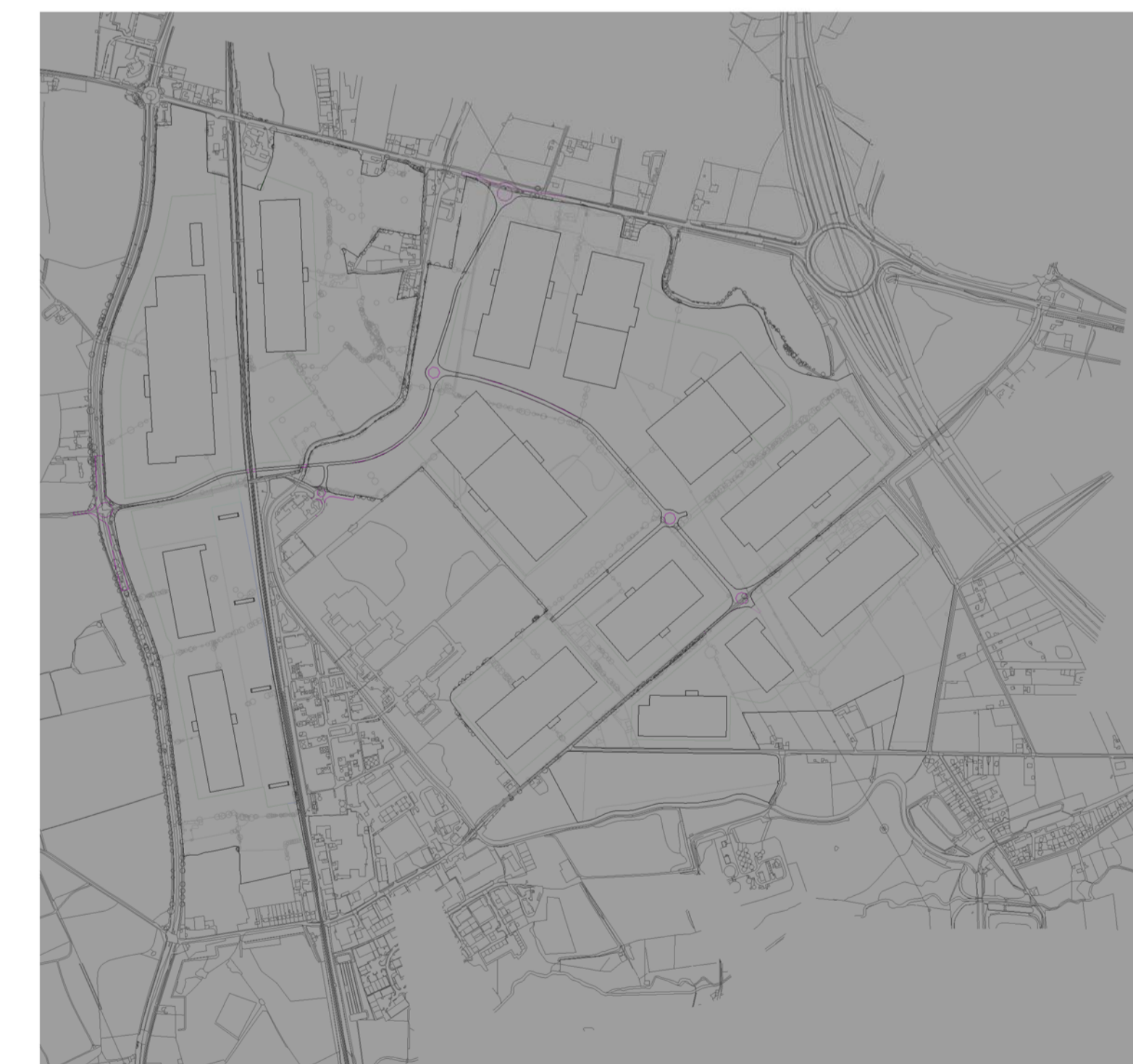
chetwoods
architects
32 frederick street birmingham B1 3HH
tel 0121 234 7500 fax 0121 234 7501 www.chetwoods.com



10 21st December @ 17.00




11 21st December @ 18.00



12 21st December @ 19.00

01 Updated to show building footprints 26/01/17 IK

| | |
|--|------------------------|
|  West Midlands Interchange | |
| Project THE WEST MIDLANDS RAIL FREIGHT INTERCHANGE ORDER 201X | |
| Drawing Status ILLUSTRATIVE | |
| Drawing Title WINTER SOLAR SHADOW SIMULATION STUDY | |
| Drawing Size A1 | |
| Regulation 5 (2) (0) | Document 2.7 |
| Drawn IK Date 20/01/17 Scale 1:15000 Drawing No. 4049 -1071 | Reviewed PS Rev. 01 |

21st of December (Winter Solstice) - Sun Rise - 9.21 / Sun set - 16.51