

Anglia Square, Norwich Fire Statement

Dated March 2022

**Weston
Homes**





Title: Anglia Square Fire Statement
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Date: 30th March 2022
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Revision	Description	Author	Date
00	Issued for comment	Steven Marshall	17 th March 2022
01	Updated to include proposed external wall construction.	Steven Marshall	30 th March 2022

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1. Introduction

1.1 Overview

Marshall Fire has been appointed by Weston Homes to provide a fire statement for the proposed Anglia Square development in Norwich. Our role is therefore to assist in steering the scheme towards meeting the requirements of the Planning Gateway One submission.

This Fire Statement will consider the evolution of the development and the principles of the golden thread concept and will form the basis of the Fire Strategy for the development.

1.2 Purpose of this report

The purpose of this report is to present the principles of the development with regards to the requirements of Planning Gateway One. These principles will be subject to further development as the project progresses.

The project will need to comply with the requirements of Part B of the Building Regulations and therefore the information presented herein may be developed further such that compliance with the requirements of the Building Regulations can be achieved.

The contents of this report should therefore not be considered sufficient to form a part of the Building Regulations submission for the project and Building Regulation approval should be considered a risk until such time that approval in principle has been granted by the appointed Building Control Body.

The findings of this statement are based on the information available at the time of review. Marshall Fire cannot be held responsible for any subsequent changes to the design that we are not made aware of.

1.3 Scheme description

This planning application relates to the construction of a total of 14 new blocks located near the centre of Norwich City. All blocks will provide predominantly Residential accommodation in addition to typical ancillary accommodation, such as stores for refuge and cycles and plant rooms. Blocks A, D, F, H, J, J3, K/L and M will all include commercial units at ground floor and blocks A, E, G and J will also include parking accommodation.

The blocks will vary in height, between 4 and 9 storeys and will include a total of 8 blocks (A, E, F, G, H, J, K/L and M) that will have an uppermost storey greater than 18m in height. All other blocks will have an uppermost storey less than 18m above ground. Currently it is anticipated that all flats will be served by a single escape stair.

The figure below provides an overview of the masterplan for the site, with the darker blocks being the taller blocks in the development. A larger plan is provided in section 5.



Figure 1: Masterplan of the proposed development

2. Fire Statement

2.1 Section 1: Site address

Most blocks in the development are located to the North of the City centre on the land that is encircled by New Botolph Street, Edward Street, Magdalen Street, St Crispins Road and Pitt Street. Blocks B and C are located to the North of the main site, adjacent to New Botolph Street and Edward Street.

2.2 Section 2: Description of proposed development including any change of use

This planning application relates to the construction of a total of 14 new blocks located near the centre of Norwich City. All blocks will provide predominantly Residential accommodation in addition to typical ancillary accommodation, such as stores for refuge and cycles and plant rooms. In addition blocks A, D, F, H, J, J3, K/L and M will all include commercial units at ground floor and blocks A, E, G and J will also include parking accommodation.

The blocks will vary in height between 4 and 9 storeys and will include a total of 8 blocks (A, E, F, G, H, J, K/L and M) that will have an uppermost storey greater than 18m in height. All other blocks will have an uppermost storey less than 18m above ground. Currently it is anticipated that all flats will be served by a single escape stair. A summary of the accommodation is provided below.

No.	Block height (m)	No. of Storeys	Proposed use
A	23.475	9 (basement, plus ground to 7th floor)	Parking / Commercial / Residential
B	9.000	4 (ground to 3rd floor)	Residential
C	9.450	4 (ground to 3rd floor)	Residential
D	16.875	6 (ground to 5th floor)	Community use / Residential
E	20.550	7 (ground to 6th floor)	Parking / Residential
E/F	13.650	5 (ground to 4th floor)	Residential
F	21.450	8 (ground to 7th floor)	Commercial / Residential
G	23.100	8 (ground to 7th floor)	Parking / Residential
H	19.875	7 (ground to 6th floor)	Commercial / Residential
J	19.650	7 (ground to 6th floor)	Parking / Commercial / Residential
J3	7.500	3 (ground to 2nd floor)	Commercial / Residential
KL	19.650	6 (ground to 5th floor)	Commercial / Residential
M	20.250	7 (ground to 6th floor)	Commercial / Loading Bay / Residential

2.3 Section 3: Name of person completing the fire statement and relevant qualifications and experience

This document was written by Steven Marshall. Steven is a Chartered Engineer registered with the Engineering Council by the Institution of Fire Engineers, of which he is a full member (membership number 00037507).

Steven's main academic qualifications include a BEng (hons) in Mechanical and Manufacturing Engineering and an MSc in Fire and Explosion Engineering.

Steven has in excess of 20 years' experience working the fire safety design of buildings and has been responsible for the development of fire safety strategies for a very large number of building projects, of which include a significant number of large Residential developments.

2.4 Section 4: State what, if any, consultation has been undertaken on issues relating to the fire safety of the development; and what account has been taken of this

No pre-application consultation has been undertaken in relation to Fire Safety. However, the client has liaised with the planning authority on a number of occasions to discuss the application proposals.

2.5 Section 5: Site layout plan with block numbering as per building schedule referred to in section 6

A plan showing the block references is provided below.

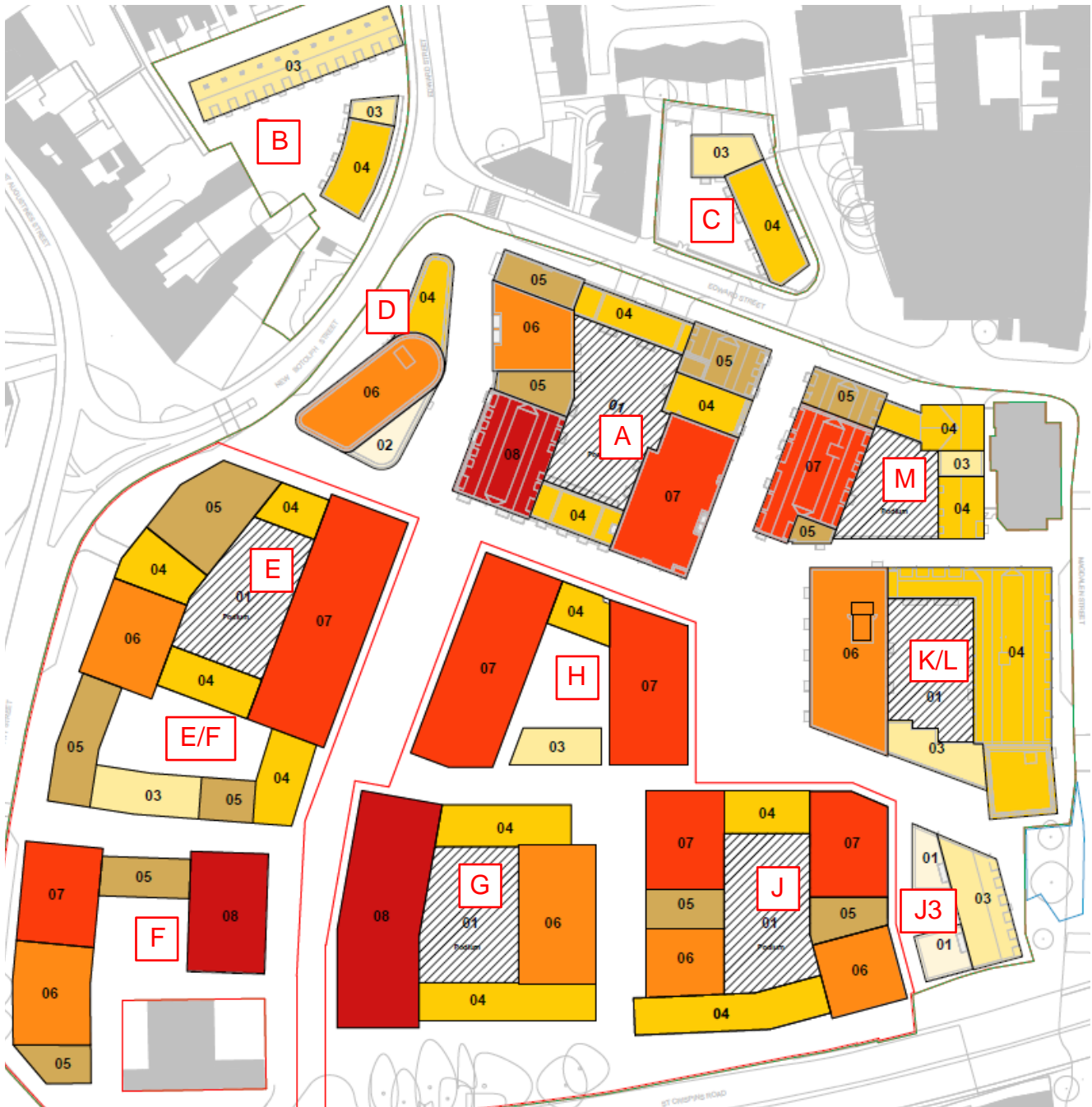


Figure 2: Block Identification Plan

2.6 Section 6: Building schedule

Table 1: Buildings Schedule Table

<i>Site Information</i>				<i>Building Information</i>		<i>Residential Safety Information</i>		
No.	Block height (m)	No. of Storeys	Proposed use	Balconies	External Wall Systems	Evacuation approach	Sprinklers	Accessible housing provided
A	23.475	9 (basement, plus ground to 7th floor)	Parking / Commercial / Residential	Yes	Brick external facing with modular inner construction including steel framing system within mineral wool insulation. All major components achieving A2-s1, d0 as required by Regulation 7(2).	Stay-put	Yes	Yes
B	9.000	4 (ground to 3rd floor)	Residential	Yes	As Block A.	Stay-put	Yes	Yes
C	9.450	4 (ground to 3rd floor)	Residential	Yes	As Block A.	Stay-put	Yes	Yes
D	16.875	6 (ground to 5th floor)	Community use / Residential	Yes	As Block A.	Stay-put	Yes	Yes
E	20.550	7 (ground to 6th floor)	Parking / Residential	Yes	As Block A.	Stay-put	Yes	Yes
E/F	13.650	5 (ground to 4th floor)	Residential	Yes	As Block A.	Stay-put	Yes	Yes
F	21.450	8 (ground to 7th floor)	Commercial / Residential	Yes	As Block A.	Stay-put	Yes	Yes
G	23.100	8 (ground to 7th floor)	Parking / Residential	Yes	As Block A.	Stay-put	Yes	Yes
H	19.875	7 (ground to 6th floor)	Commercial / Residential	Yes	As Block A.	Stay-put	Yes	Yes
J	19.650	7 (ground to 6th floor)	Parking / Commercial / Residential	Yes	As Block A.	Stay-put	Yes	Yes

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J3	7.500	3 (ground to 2nd floor)	Commercial / Residential	Yes	As Block A.	Stay-put	Yes	Yes
K/L	19.650	6 (ground to 5th floor)	Commercial / Residential	Yes	As Block A.	Stay-put	Yes	Yes
M	20.250	7 (ground to 6th floor)	Commercial / Loading Bay / Residential	Yes	As Block A.	Stay-put	Yes	Yes

Note: * Existing building with external masonry elevations housing habitable accommodation.

2.7 Section 7: Specific technical complexities

There has been a lot of changes to the fire safety guidance in recent years and there is currently a Draft BS 9991 document that was out for public comment until the 6th October 2021. This included some drastic changes to the approach to fire safety in residential apartment buildings that was considered the norm previously. Whilst the document is still in Draft status, Weston Homes will be incorporating the far more stringent guidance to the minimum required by the current guidance contained in either BS 9991:2015 or Approved Document B Volume 1. It is therefore considered that the proposals will provide a level of fire safety that far exceeds the minimum required by the current Building Regulation guidance.

Weston Homes will be providing sprinkler protection to all buildings even if they have an uppermost storey less than 11m above ground and this will provide coverage in accordance with the 2021 version of BS 9251, including a Category 4 system in blocks with an uppermost storey greater than 18m above ground.

In addition to the above, the external walls within the development will all be designed around the Regulation 7(2) principles, but applied to all buildings and not just those that are defined as Relevant Buildings under the Regulation 7(2) requirements. Therefore with regards to the combustibility of the contents of the external walls and provision of sprinkler protection, the shorter blocks will be afforded the same level of protection to that of the taller blocks.

The buildings will also be designed around the typical principles for a residential development with a stay-put strategy and therefore all floors will be compartment floors and all apartments will be designed as compartments and therefore when considering the above additional fire safety measures will provide a far greater level of property protection to the buildings to that implied by the minimum required by Building Regulation guidance.

Because the fire safety strategy for the blocks will be designed in accordance with the guidance contained in the Draft BS 9991 document all blocks with a lift will have enhancements so that the lift is an evacuation lift. In buildings with an uppermost storey greater than 18m above ground there will also be an additional firefighting lift provided. In accordance with the guidance in Draft BS 9991 the lift lobbies will be provided with dedicated ventilation and provide direct access to the escape stair, but no direct access to apartments.

Firefighting in the blocks with an uppermost storey greater than 18m above ground will be assisted by the provision of an evacuation alert systems that will be designed and installed in accordance with BS 8629. This will enable them to manually evacuate any floor (or floors) in the building at any one time. This is not currently proposed for the shorter blocks on account of the reduced number of apartments provided and the lower risk associated with firefighting in shorter properties.

A muster point will be identified so that in the event of a fire, all building occupants can escape to a fixed location. This will need to be outside of the building and in an ultimate place of safety. It is recommended that this is positioned in a safe place at the front of the building.

2.8 Section 8: Issues which might affect the fire safety of the development

It is currently considered that some of the apartments will adopt an open plan layout, whereby the bedrooms are accessed from the main living space. This is allowable under the guidance contained in Draft BS 9991, however the maximum size limit recommended for apartments without an enclosed kitchen is 8x4m. Therefore to ensure that the standards of life safety within these apartments is not compromised a detailed fire engineering review will be undertaken. This will examine the conditions that escaping occupants would be exposed to in the event of a fire by using detailed fire engineering analyses, including computational fluid dynamics and heat radiation calculations.

The above analyses will be undertaken in accordance with well established fire engineering codes of practice that are widely adopted throughout the industry. They will also be undertaken in conjunction with any special requirements of the appointed Building Control Body and their appointed third party reviewer.

Aside from the above, we consider that the development will be designed to the highest standards and therefore do not foresee any other significant risks at the current time.

2.9 Section 9: Local development document policies relating to fire safety

The project will be subject to the Planning Gateway One requirements.

2.10 Section 10: Fire service site plan

The proposed design for the access and facilities for the fire service will be in accordance with the requirements detailed in Draft BS 9991. Therefore all blocks will be provided with a dry rising main that is located within the stair core in each of the blocks.

In accordance with BS 9990 access to the blocks for fire service vehicles will be to within 18m of the dry riser inlet. The fire service access routes to within the site is shown below.

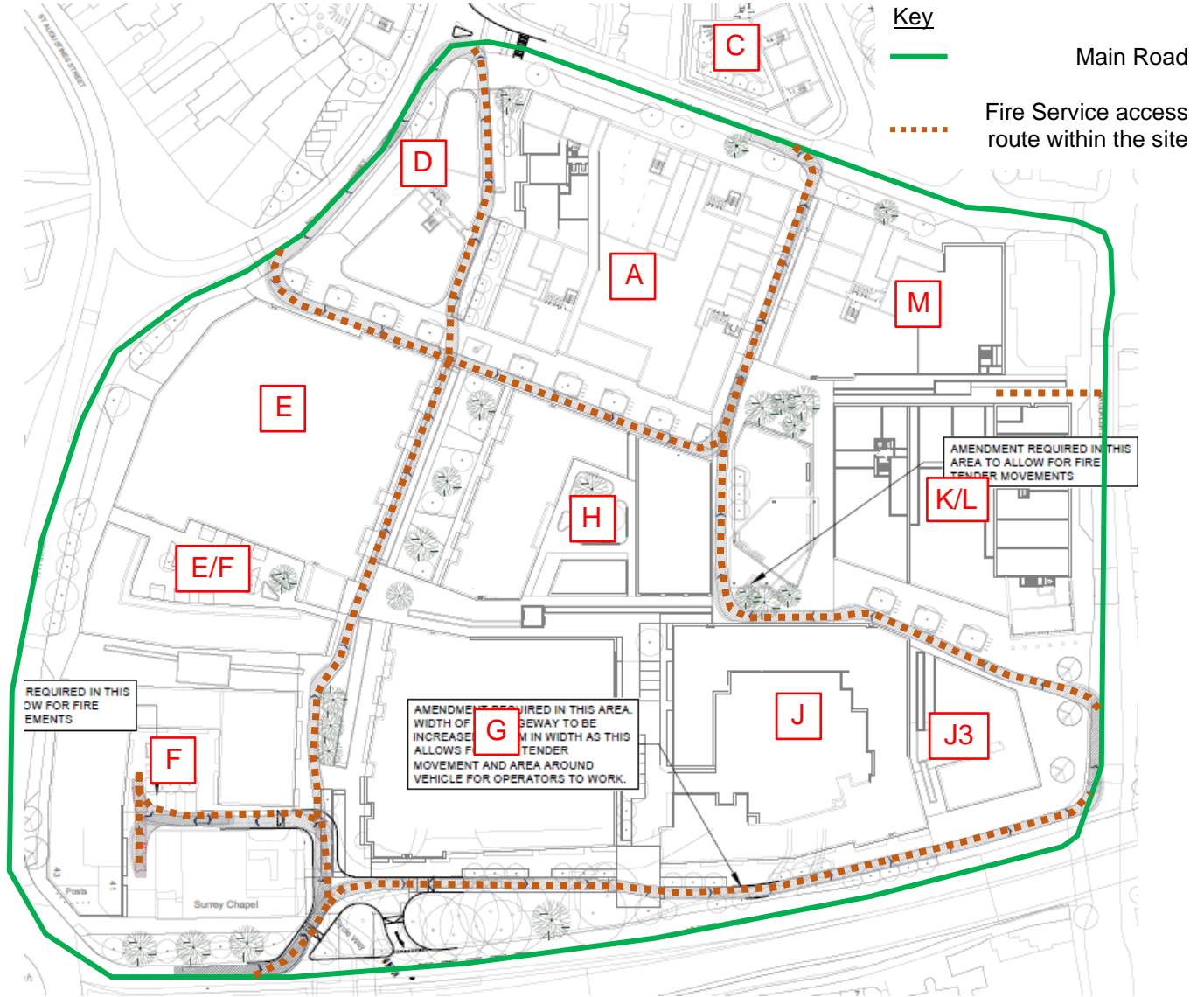


Figure 3: Indicative fire tender access points

2.11 Section 11: Emergency road vehicle access

Firefighting access is key for successful firefighting and therefore the appropriate provisions will be made regarding vehicular site access. Within each building, a dry riser will be provided with the inlet on the front façade and an outlet within the stair enclosure. The dry riser inlet will be located within 18m of the fire service vehicle hardstanding.

Turning facilities for fire service vehicles will be provided in any dead-end access route that is more than 20m long. Any access gates will be provided with a fire brigade lock only (no other padlocks or locking devices are permitted).

Table 2: Fire Service Appliance Access Route Requirements

Appliance Type	Min. width of road between kerbs	Min. width of gateways	Min. turning circle between kerbs	Min. turning circle between walls	Min. clearance height	Min. carrying capacity
Pump	3.7	3.1	16.8	19.2	3.7	12.5*
High Reach	3.7	3.1	26.0	29.0	4.0	17.0*

Note: * The minimum carrying capacity will be checked with the local fire brigade.

2.12 Section 12: Siting of fire appliances

Siting of the fire appliances will be within 18m of the buildings dry riser. This has been illustrated in Figure 3.

The dry riser inlet position for each building is to be visible from the fire tender hardstanding location and designed and installed in accordance with BS9990.

The design team will provide a site plan with the above items which will identify the design intent, this is part illustrated in Section 10.

2.13 Section 13: Suitability of water supply for the scale of development proposed

Existing hydrant locations for the site are required to be checked and new hydrants provided if necessary to ensure hydrants are located within 100m of an entry point to the building and not more than 90m apart. The water supplies will be via the towns main.

2.14 Section 14: Fire service site plan

The design team will provide a site plan, however see Figure 3 also.

2.15 Section 15: Signature

The following overview has been produced by Steven Marshall, Managing Director at Marshall Fire Ltd.



2.16 Section 16: Date

The following fire safety statement is dated 17/03/2022.

2.17 Conclusion

Having reviewed the documentation issued to Marshall Fire Ltd by Weston Homes, we consider that the overall design proposals for Anglia Square are considered to provide high standard of fire safety and exceed the minimum standards required by Planning Gateway One.

3. References

- I. BS 9991: 2015, Fire safety in the design, management and use in Residential buildings – Code of practice
- II. Draft BS 9991, Fire safety in the design, management and use in Residential buildings – Code of practice, dated 06 August 2021
- III. Fire Statement Guidance, Annex D Gov.co.uk
- IV. BS 5839-1:2017, Fire detection and fire alarm systems for buildings. Code of practice for system design, installation, commissioning and maintenance.
- V. BS 9990:2015, Non automatic fire-fighting systems in buildings. Code of practice.
- VI. BS 476 series: 1987, Fire tests on building materials.
- VII. BS EN 1366-3:2009, Fire resistance tests for service installations. Penetration seals.
- VIII. BR 187: 2014 External Fire Spread Building Separation and Boundary Distances.