Project name	**Union Place, Worthing, West Sussex**
Issued to	Client and project team
Document title	Response to HSE comments re: Fire Statement
Document date	7th March 2024
RBFC reference	2022-05 LT1
Prepared by	Matthew Ryan – Director & Fire Engineer

Project address: Union Place Car Park and Site of former Police Station, Union Place, Worthing, BN11 1LG (project has recently been renamed 'Union Gardens')

LPA and application number: Adur & Worthing, AWDM/1618/23

HSE reference number: pgo-4720

1 Background and purpose of this document

As part of the recent planning application process relating to the Union Place (now known as 'Union Gardens') scheme in Worthing, a supporting Fire Statement was required to be submitted for the scheme to Adur & Worthing Councils/ Health & Safety Executive (HSE), as the development falls within the scope of a relevant building under Planning Gateway One.

Red Brick Fire Consulting Limited was appointed to develop the fire safety strategy and associated deliverables for the scheme during the RIBA Stage 2 design process completed in 2023, with the following two key documents produced as part of this:

- *RIBA Stage 2: Concept Design fire safety strategy* document, dated 1st November 2023 (Revision 1), reference 2022-05 R1.
- *231101 Fire Statement form (Planning Gateway One) - Union Place, Worthing (RIBA 2)* dated 1st November 2023 (completed Fire Statement proforma).

The above two documents were included as part of the wider project information pack submitted to the local planning authority, via ECE Planning.

Following the local planning authority's consultation with the HSE under Planning Gateway One in relation to the proposed scheme and submitted Fire Statement, a copy of the subsequent HSE's comments (as stated in a *Advice to the local planning authority* document produced by the HSE, reference pgo-4720, dated 26th January 2024) have been provided to the project team.

As part of the project team's review of the HSE document, Red Brick Fire Consulting Limited has been asked to provide a response to each of the comments raised. The proceeding section of this report therefore provides a suitable response based upon the information available at the time; the intention is that this report is further shared with the local authority planning department via ECE Planning.

Red Brick Fire Consulting Limited | www.redbrickfire.co.uk | Company registered in England & Wales; company number 13933147 | Registered office: 85 Great Portland Street, First Floor, London, England, W1W 7LT

2 Response to comments raised in the HSE produced *Advice to the local planning authority* document, reference pgo-4720 (Planning Gateway One)

Where considered necessary/ appropriate, Red Brick Fire Consulting Limited responds as follows to the comments raised by the HSE in their *Advice to the local planning authority* document, reference pgo-4720, dated 26th January 2024.

(Note: responses provided to comments in the order listed in the original HSE document referenced above)

Scope of consultation

Items 1.1 to 1.9

No response deemed needed; comments raised under these items for background information/ context only.

Consultation

Fire service access and facilities

Items 1.10 – 1.12

The RIBA Stage2 fire safety strategy has identified that the proposed building services 'lobbied riser' concept is a deviation from Figure 6 of BS9991: 2015 guidance. The intention is however to provide significantly robust fire resisting construction/ additional protected lobby between the contents of the proposed building services riser shafts and the smoke ventilated common corridor spaces to address this proposed deviation.

In the context of firefighting shaft design, note that clause 50.3.1 of BS9991: 2015 states '*Only services associated with the fire-fighting shaft, such as ventilation systems and lighting for the shaft, should pass through or be contained within the fire-fighting stair*'. Similarly, Approved Document B Volume 1 (2019, inc. 2020 and 2022 Amendments) Figure 15.1(b) shows the firefighting shaft enclosure for residential buildings not including the full extent of the common corridor space. Therefore, on all above ground floor levels it is considered that the proposed building services lobbied risers are consistent with guidance expectations. At ground floor level it is acknowledged that the building services lobbied risers will be accessed from the final exit route corridors from the staircase in Blocks B and C; the current proposal has been considered reasonable on the basis that the services risers will be robustly lobbied from the final exit route, the final exit route will be provided with smoke ventilation protection, and there will also be an additional final exit route available from the staircases on to the external podium at 1st floor.

Items 1.13 to 1.15

See section 8.3.10 of the RIBA Stage 2 fire strategy document for the project.

Under current BS9990: 2015 guidance, a dry rising fire main installation could be designed to have an 18m horizontal portion of pipework then a vertical portion if pipework serving floors with a height of up to 50m above ground floor level; the most onerous portion in terms of water transport can be expected to be the vertical pipework where there will be a ca.1bar pressure loss through static head per 10m of vertical fire main. In the case of Union Place, the horizontal portions of fire main are currently proposed to exceed the recommended 18m (the longest horizontal pipework distance will likely be in the region of ca.25m) but the vertical portion is much less than 50m, with Block B having the highest vertical run to 10th floor/ca.33m. Therefore, at this stage, in comparable terms it is considered that the dry fire main proposals for Union Place will be within acceptable

Red Brick Fire Consulting Limited | www.redbrickfire.co.uk | Company registered in England & Wales; company number 13933147 | Registered office: 85 Great Portland Street, First Floor, London, England, W1W 7LT

limits when compared against what could be accepted under guidance for a dry fire main in a building scenario with a top floor of up to 50m (i.e. the potential pressure loss for the proposed horizontal fire main runs will still be less than the pressure loss that could be experienced for a fully BS9990: 2015 compliant fire main serving floors up to a height of 50m above ground floor level).

Further design detail relating to this item will be included in the RIBA 3 and 4 fire strategy documents, once the team has a better definition of fire main inlet positioning and anticipated pipe runs for each dry fire main installation. To confirm, no reliance is being placed upon 'past precedents' to justify the proposed fire main arrangements for the Union Place project.

External wall systems – internal angles

Items 1.16 to 1.18

As acknowledged in the RIBA Stage 2 fire safety strategy document there are some instances where windows to flat units are within ca.850mm and at 90º to the AOV window serving the adjacent the common corridor space. These internal angles have been reviewed thus far in the context of guidance given in clauses 29(a)/ Figure 31 of BS9991: 2015 and 20.3.1 of BS9999: 2017. At RIBA Stage 2 it was considered that a case specific justification based on the provision of the proposed automatic fire suppression system protection (which can reasonably be expected to control if not extinguish an outbreak of fire) could be put forward and further developed as part of the onward RIBA Stages 3 and 4 design process. The aforementioned BS9991/ BS9999 guidance does not account for sprinkler system protection being present; in the case of Union Place all residential apartments will be provided with sprinkler system protection, with this system expected to significantly reduce the potential impact of fire from the compartment of fire origin. Notwithstanding this, and to clarify, materials which become part of an external wall (including internal angles), or specified attachment, for the development are required to achieve European Classification A2-s1, d0 or A1 (classified in accordance with the reaction to fire classification), as the development qualifies as a 'relevant building' under Regulation 7 of the Building Regulations 2010.

Supplementary Information

Fire service access and facilities

Items 2.1 and 2.2

The existing public highway roadways surrounding the development site are Union Place, High Street, and Chatsworth Road. Union Place and High Street are two-way roads, with Chatsworth Road being a one-way road. All of these roads are currently relied upon by the local fire and rescue service and other emergency services to access the existing buildings located near to the development site, and are considered to be appropriate for fire service pump appliance use.

Item 2.3 to 2.5

Whilst further fire service vehicle tracking information will need to be confirmed by the project team as part of the onward RIBA Stages 3 and 4 design process, the intention is that the gate/site access road will be of an adequate width for fire service pump appliances, with appropriate reversing/ turning area provided.

Red Brick Fire Consulting Limited | www.redbrickfire.co.uk **|** Company registered in England & Wales; company number 13933147 **|** Registered office: 85 Great Portland Street, First Floor, London, England, W1W 7LT

Items 2.6 to 2.9

Benchmark design guidance is not entirely clear on how areas such as the proposed covered ground floor car park and plant rooms are addressed for buildings where a fire main installation is provided to support fire service access for the above the ground levels.

Therefore, and as outlined in the RIBA Stage 2 fire strategy document for the project, the initial consideration has been whether adequate fire service perimeter access can be provided to the car park as an independent use; it is considered that this can be achieved.

In addition, the proposed automatic sprinkler system protected covered car park areas and associated plant rooms are expected to fall within 60m hose coverage from fire appliance parking positions around the site. Being that for a sprinkler protected building it is permitted to have hose distances of up to 60m from a fire main outlet in a firefighting shaft to the furthest points of the floor plate, the aforementioned 60m hose coverage to the covered car park/ plant rooms is considered comparable and acceptable in this specific case.

Note, the hose distances in excess of 60m referenced in the RIBA Stage 2 fire strategy document for the project are to a small area of external/ open air car parking to the west of the development site, which will be able to be approached by the fire service from external from multiple directions. Benchmark fire safety guidance does not provide explicit limits on hose distances to open air car parking; in this specific case it is considered that the proposed 65-72m hose distances involved to this small area of external car parking is reasonable.

For item 2.9, the HSE comments that *"Fire safety guidance states that: "… 34m is the maximum distance firefighters should penetrate into a fire compartment to conduct rescue", particularly when considering the wearing of breathing apparatus and carrying heavy equipment"*. It is unclear which fire safety guidance document is being referenced and in what context (it is presumed that reference might be being made to the ODPM produced *Physiological Assessment of Firefighting, Search and Rescue in the Built Environment Fire Research Technical Report 2/2005* (2004)). Fire safety guidance such as Approved Document B permits hose distances of up to 60m from a fire main outlet in a firefighting shaft to the furthest points of the floor plate where automatic sprinkler system protection is provided, with this distance potentially being within one compartment; the hose coverage at ground floor level within the proposed covered car park and to the plant rooms is being considered comparable to this guidance.

Items 2.10 and 2.11

Noted; continued liaison with the local fire and rescue service in relation to the design of the development and fire service access arrangements is expected to be completed as part of the onward RIBA Stages 3 and 4.

Items 2.12 and 2.13

See section 4.10 of the RIBA Stage 2 fire strategy document for the project, that states:

At this stage it is considered that the design of the less than 2m wide common balcony for Block D should be able to accord with the above outlined BS9991: 2015 guidance (and this will continue to be reviewed during RIBA Stages 3 and 4), with the exception of the 45m hose distance criterion. In this specific case it is proposed that a ca.55m hose distance (+10m) is acceptable from the single stair to the furthest point of the furthest dwelling (Figure 21) on the basis that all of the flat units in Block D will be protected by an automatic sprinkler system. The above BS9991: 2015 guidance for balcony/deck approach does not account for the presence of automatic sprinkler system protection, which can reasonably be expected to control (if not extinguish) an outbreak of fire in the flat units. The proposed arrangements for Block D also involves an additional smoke ventilated lobby being provided between single staircase and the external balcony, which will help firefighters to utilise the dry fire main

Red Brick Fire Consulting Limited | www.redbrickfire.co.uk **|** Company registered in England & Wales; company number 13933147 **|** Registered office: 85 Great Portland Street, First Floor, London, England, W1W 7LT

outlet on the fire floor as this additional lobby will provide an increased level of fire/ smoke protection. The majority (ca.45m) of the proposed ca.55m hose distance will also be along the balcony itself rather than within a flat unit, with the route along the balcony being intuitive/ straight forward and the flat units all being single level only. Overall, it is considered on a risk basis that in the context of the specific proposed design that the additional +6m hose distance presents an increased risk to firefighters; however, this specific item will need to be reviewed and agreed with building control and the local fire and rescue service as part of RIBA Stage 3.

Note, the proposed hose distances for Block D will also be within the 60m hose distance limit being applied to the other residential areas of the development.

Items 2.14 to 2.15

See section 8.3 of the RIBA Stage 2 fire strategy document for the project, which highlights the following deviations:

- Block B: a single firefighting shaft is proposed.
- Block C: a single firefighting shaft is proposed.
- Block D: hose distances (see comments above under Items 2.12 and 2.13).

Electric vehicles

Item 2.16

The proposed dedicated Electric Vehicle (EV) parking spaces/ charging points are currently proposed to be positioned outside of the covered car park in external open air, within the development site boundary on the Chatsworth Road side of the site.

At present, current BS9991: 2015 and Approved Document B (2019, inc. 2020 and 2022 Amendments) guidance does not provide direction on how the hazards and risks relating to electric vehicles should be addressed in relation to Building Regulations compliance. Whilst some wider industry guidance is beginning to emerge, there does not appear to be an agreed consensus on where EV parking/ charging points need to be positioned and/or separated from a fire safety perspective when in an external situation.

As reflected in the RIBA Stage 2 fire safety strategy document, the issues relating to the provision of EV charging facilities needs to continue to be reviewed moving through RIBA Stages 3 and 4, and will need to include liaison with the appointed building control body for the project and the local fire and rescue service. As part of this, the proximity of the proposed spaces to the site boundary (and what these spaces are adjacent to in terms of site boundary walls, buildings, etc) will be further reviewed and considered.

Item 2.17

Noted.

Items 2.18 and 2.19

It is unclear what the intent of this comment is. The covered car park area will be provided with comprehensive automatic sprinkler system and automatic fire detection coverage, as outlined in the RIBA Stage 2 fire safety strategy. The car parking spaces external and outside of the covered car park and will be in open air. If the automatic fire detection system/ automatic sprinkler system providing coverage to the covered car park is

Red Brick Fire Consulting Limited | www.redbrickfire.co.uk **|** Company registered in England & Wales; company number 13933147 **|** Registered office: 85 Great Portland Street, First Floor, London, England, W1W 7LT

activated, then it is intended that the power supply to all of the EV charging points is isolated/ cut off. In addition to this automatic isolation/ cut off, it is also expected that a manual means of EV charging point isolation/ cut off.

Fire safety strategy considerations

Items 2.20 to 2.26

Noted; all items are subject to further review and development as part of the onward RIBA Stages 3 and 4.

Means of escape – open plan flats

Items 2.27 to 2.29

Noted; the RIBA Stage 2 fire safety strategy puts forward a fire engineering justification to support the proposed open plan flat designs. This will be subject to continued review during the onward RIBA Stages 3 and 4, and will need to be agreed with the appointed building control body for the project.

Hydrant provision

Items 2.30 and 2.31

See section 8.3 of the RIBA Stage 2 fire strategy document for the project; as stated in this, the local fire and rescue service has initially been consulted with respect to the location of the nearest existing fire hydrants to the development site, and *"the existing fire hydrant provision to the site will need to be further confirmed/ verified with reference to the local water supplier's infrastructure search information as part of RIBA Stage 3"*.

Green roofs/walls

Items 2.32 to 2.36

Noted; the comments raised will be considered and addressed as part of the onward RIBA Stage 3 and 4 design development work.

Means of escape – third party land

Item 2.37

Noted; this item will need to be reviewed by the client team for the project.

3 Next steps

This document produced by Red Brick Fire Consulting Limited will be issued to the client/ project team and ECE Planning for onward transmission and discussion with the local planning authority, in relation to the current planning application process for the proposed development.

It should be noted that the HSE comments document reference pgo-4720, dated 26th January 2024 states that the items raised in section 1 of their document are a 'substantive response', and that the additional items in section 2 of their document 'does not contribute to HSE's substantive response and should not be used for the purposes of decision making by the local planning authority'. Notwithstanding this, Red Brick Fire Consulting

Red Brick Fire Consulting Limited | www.redbrickfire.co.uk | Company registered in England & Wales; company number 13933147 | Registered office: 85 Great Portland Street, First Floor, London, England, W1W 7LT

Limited has provided a response where required to all items raised, to demonstrate that the project team is proactively reviewing and addressing the HSE comments raised at this stage.

4 Author competency statement

Matthew Ryan BEng, MSc, CEng, MIFireE is a qualified fire engineer, Chartered Engineer with the Engineering Council, and a current Member of the Institution of Fire Engineers. He has a specialist degree and Masters degree in Fire Engineering from the University of Central Lancashire and has 19 years' experience working in the fire safety sector (11 years working in the fire safety department of a fire and rescue service, and the remainder working as a private sector fire safety consultant/fire engineer). Matthew has been lead engineer on and developed detailed fire strategies for an eclectic range of projects ranging from new build multi occupancy developments, to existing landmark heritage buildings. He is a published author and has contributed to the development of technical fire safety standards and wider fire industry best practice guidance (for example, British Standards, CIBSE Guide E). Further CV information can be provided upon request.

Red Brick Fire Consulting Limited | www.redbrickfire.co.uk **|** Company registered in England & Wales; company number 13933147 **|** Registered office: 85 Great Portland Street, First Floor, London, England, W1W 7LT