

**Level 2 SFRA Site Assessment
Potential Sites along Mad Brook**

<u>Site ID/Ref</u>	<u>SHLAA Site/ ABD Number</u>	<u>SHLAA Name/ Full Ref</u>	<u>SHLAA LOCAL/ Site Name</u>	<u>Site Description</u>	<u>Flood Depth Assessment</u>	<u>Flood Velocity Assessment</u>	<u>Flood Hazard Assessment</u>	<u>Blockage Scenario</u>	<u>Recommendations</u>
117	Lord Silkin School/Three Oaks Primary School	Grange Avenue	Stirchley	The majority of this site lies within Flood Zone 1. The Mad Brook flows adjacent to the western boundary of the site and Flood Zones 3b, 3a and 2 extend into part of the site along the south western boundary. There is little difference in the extent of Flood Zones 3a and 2. This site has been allocated for employment use also (117-SHLAA).	The depth of the flooding in the affected area is typically between 20cm and 1.0m across the range of modelled return periods, with parts of the site affected by Flood Zone 2 showing depths of up to 1.2m along the western boundary of the site. In general the depth increases by approximately 30cm between the return periods.	Velocities across the affected parts of the site are negligible, typically being <0.1m/s across the modelled range of return periods.	Flood Hazard low to moderate across the range of affected range of return periods, with 'danger for some.' For the 1 in 1000 year (0.1% event) the flood hazard is moderate to significant, with 'danger for most' across the affected part of the site.	With a 75% blockage applied at culvert SJ 70488 06475, the extent, depth and velocity of flooding at this site are similar to the 100 year event. The flood hazard is also similar to the 100 year event with 'danger for most.'	The majority of the site lies within Flood Zone 1. The site has been allocated for both employment and residential use. The site is suitable for both residential and employment development providing the part of the site affected by Flood Zones 3b, 3a and 2 is left as open space. It is recommended that more vulnerable development be directed away from the part of the site affected by flooding and that the requirements for development in Flood Zone 1 are followed.
249	Land north The Bridge School	Brookside Avenue	Brookside	Site lies fully in Flood Zone 1. Holmer Lake lies to the east of the site with Flood Zone maps for the Mad Brook extending to within 10m of the site.	n/a	n/a	n/a	n/a	Follow requirements for development in Flood Zone 1.
250	Land east	Lake End Drive	Brookside	Site lies predominantly in Flood Zone 1, though Flood Zones 3b, 3a and 2 encroach on the eastern site of the site to the west of Holmer Lake. The Mad Brook itself does not flow through the site, flowing into Holmer Lake downstream of Holmer Farm Road. Water flows out of Holmer Lake via and overflow and under Queensway (A442).	Depth of flooding in the affected part of the site is approximately 30cm for the 1% AEP (1 in 100 year) event, increasing to depths of approximately 1.4m for the 0.1% AEP (1 in 1000 year) event. Generally depths are greatest towards the eastern boundary of the site.	Velocities across the affected parts of the site are negligible, typically <0.05m/s.	Flood hazard is generally low to moderate, with 'danger for some.' For the 0.1% AEP (1 in 1000 year) event a small part of the site along the eastern boundary is classified as significant, with 'danger for most.'	With a 75% blockage applied at culvert SJ 70488 06475, the extent, depth and velocity of flooding at this site are similar to the 100 year event. The flood hazard is also similar to the 100 year event with 'danger for most.'	Site lies predominantly in Flood Zone 1, though Flood Zones 3b, 3a and 2 encroach on the eastern site of the site to the west of Holmer Lake. It is recommended that the affected parts of the site are kept as open space.
368	Land fronting	Stirchley Road	Brookside	Site lies fully in Flood Zone 1.	n/a	n/a	n/a	n/a	Follow requirements for development in Flood Zone 1.
EMP8-POR	60090	TF60060090	Halesfield (Halesfield 23)	Site lies fully in Flood Zone 1	n/a	n/a	n/a	n/a	Follow requirements for development in Flood Zone 1.
EMP8-POR	60200	TF60060200	Halesfield (Plot 1 Halesfield 18)	Previous JFLOW outlines indicated that approximately 50% of the site is located within Flood Zone 3a and 2. Updated modelling has indicated that approximately 90% of the site lies within Flood Zone 2 and 50% within Flood Zone 3a (this is deemed to be predominantly surface water flood risk). The Mad Brook itself is culverted through the industrial site, however, modelling undertaken has indicated that water falling on this part of the catchment will follow a flow route through the allocated site. A drain is located to the south of the site; however, when visited it could be seen that it was not part of the Mad Brook.	Depth of flooding across the site is shallow (typically <30cm). There is little difference in the depth of water between the modelled return periods.	Velocities across the site are generally slow (<0.5m/s). Localised areas of flooding exhibit slightly faster velocities for higher return periods (up to approximately 1m/s for the 0.1% AEP (1 in 1000 year) event).	Flood hazard is categorised as danger for some across the affected parts of the site.	n/a	Flood Zones 2 and 3 affect this site, though the flood hazard is low, with low depths and velocities. Sites fully in lower risk Flood Zones (i.e. Flood Zone 1) should be considered first, but if the Sequential Test can be passed the site could be developed in accordance with Table D3 of PPS25, with more vulnerable development located in the areas of lowest risk within the site.

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EMP8-POR	60220	TF60060220	Halesfield (Halesfield 17)	Previous JFLOW outlines indicated that approximately 50% of the site is located within Flood Zone 3a and 2. Updated modelling has indicated that approximately 50% of this site lies within Flood Zone 2 (this is deemed to be predominantly surface water flood risk). The remainder of the site is within Flood Zone 1. The Mad Brook itself is culverted through the industrial site, however, modelling undertaken has indicated that water falling on this part of the catchment will follow a flow route through the allocated site.	Depth of flooding across the affected part of the site is negligible.	Velocities across the affected parts of the site are generally slow (<0.5m/s).	The prevalent hazard category is danger for some across the affected part of the site.	n/a	This site lies equally in Flood Zones 1 and 2, though the flood hazard is low, with low depths and velocities. Sites fully in lower risk Flood Zones (i.e. Flood Zone 1) should be considered first, but if the Sequential Test can be passed the site could be developed in accordance with Table D3 of PPS25, with more vulnerable development located in the areas of lowest risk within the site.
EMP8-POR			Halesfield (Halesfield 24)	This site is located within a purpose built flood storage area. Approximately 50% of the site is affected by Flood Zones 3b, 3a and 2. The Mad Brook is culverted beneath the Queensway (A442), with a small section of open channel before being culverted beneath the railway. The railway itself forms a barrier to flow creating a residual risk to this area. Downstream of the railway there is a small culvert which emerges from under the overflow, with three additional culverts further downstream which feed into the flood storage area. Inspection of the site during a site visit indicated that the flood storage area did not appear to have an outlet culvert, and it is therefore assumed that any floodwaters that enter here naturally drain away or dry up.	Part of the site forms a flood storage area with the depth of flooding being >1m for the range of modelled return periods. For the 0.1% AEP (1 in 1000 year) event depths reach up to approximately 4m in parts of the south western corner of the site. Depths increase by between 1m to 2m between the modelled return periods.	Velocities are generally low (<0.5m/s) across the range of modelled return periods.	The prevalent hazard category affecting this site is 'danger for most.' For the higher return periods the hazard at the south western corner of the site is 'danger for all.'	n/a	It is strongly recommended that alternative sites are considered in preference to this site as the area is acting as a purpose built storage area. It is very important that this area is maintained as such. This in addition to residual risk from the presence of the railway line across the western boundary of the site mean that the flood risk posed to the site is high.
141-SHLAA		E01155/002	Land to south of Stirchley Road (Brookfield)	The majority of the site lies within Flood Zone 1. The Mad Brook flows through the eastern extent of the site, with Flood Zones Flood Zones 3b, 3a and 2 affected part of the northern and eastern extent of the site. As the Mad Brook flows through the site it flows through two successive pools before entering a culvert and exiting the site in the south eastern corner. There may be some residual risk from surcharging of the culvert. The previous JFLOW outlines showed Flood Zones 3a and 2 as extending further into the site in comparison to the updated modelled outlines.	The depth of flooding is shallow for the range of return periods in the affected areas towards the northern boundary of the site (<30cm). Towards the eastern boundary of the site, depth of flooding is greater across the modelled events with depths of up to 1.2m for the 1% AEP (1 in 100 year) event and 1.8m for the 0.1% AEP (1 in 1000 year) event. This may be a result of surcharging of the culvert.	Velocities are relatively high in parts of the site, particularly along the eastern boundary on the left bank of the watercourse. Velocities range between 0.5 and 2.0m/s across the modelled return periods in some parts of the site.	Flood hazard is typically moderate to significant for most modelled return periods, with 'danger for most.'. For the 0.1% AEP (1 in 1000 year) event the flood hazard is predominantly significant to extreme, with 'danger for all.'	With a 75% blockage applied at culvert SJ 70488 06475, the extent, depth and velocity of flooding at this site are similar to the 100 year event. The flood hazard is also similar to the 100 year event with 'danger for all.'	The majority of the site lies within Flood Zone 1. In the affected parts of the site the flood hazard is typically moderate to significant, with some areas classified with extreme flood hazard. It is recommended that development be located within Flood Zone 1 and that the requirements for development in Flood Zone 1 are followed. For the affected parts of the site, there is little difference in the extent of Flood Zones 3b, 3a and 2; therefore, it is recommended that this area is left as open space.

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117-SHLAA	(also housing site 117)	E01953/002	Lord Silkin School/Three Oaks Primary School, Stir	The majority of this site lies within Flood Zone 1. The Mad Brook flows adjacent to the western boundary of the site and Flood Zones 3b, 3a and 2 extend into part of the site along the south western boundary. There is little difference in the extent of Flood Zones 3a and 2. This site has been allocated for employment use also (117-SHLAA).	The depth of the flooding in the affected area is typically between 20cm and 1.0m across the range of modelled return periods, with parts of the site affected by Flood Zone 2 showing depths of up to 1.2m along the western boundary of the site. In general the depth increases by approximately 30cm between the return periods.	Velocities across the affected parts of the site are negligible, typically being <0.1m/s across the modelled range of return periods.	Flood Hazard low to moderate across the range of affected range of return periods, with 'danger for some.' For the 1 in 1000 year (0.1% event) the flood hazard is moderate to significant, with 'danger for most' across the affected part of the site.	With a 75% blockage applied at culvert SJ 70488 06475, the extent, depth and velocity of flooding at this site are similar to the 100 year event. The flood hazard is also similar to the 100 year event with 'danger for most.'	The majority of the site lies within Flood Zone 1. The site has been allocated for both employment and residential use. The site is suitable for both residential and employment development providing the part of the site affected by Flood Zones 3b, 3a and 2 is left as open space. It is recommended that more vulnerable development be directed away from the part of the site affected by flooding and that the requirements for development in Flood Zone 1 are followed.
Cemetery Site 2	(Also employment site EMP8-POR (Halesfield 24))			This site is located within a purpose built flood storage area. Approximately 50% of the site is affected by Flood Zones 3b, 3a and 2. The Mad Brook is culverted beneath the Queensway (A442), with a small section of open channel before being culverted beneath the railway. The railway itself forms a barrier to flow creating a residual risk to this area. Downstream of the railway there is a small culvert which emerges from under the overflow, with three additional culverts further downstream which feed into the flood storage area. Inspection of the site during a site visit indicated that the flood storage area did not appear to have an outlet culvert, and it is therefore assumed that any floodwaters that enter here naturally drain away or dry up.	Part of the site forms a flood storage area with the depth of flooding being >1m for the range of modelled return periods. For the 0.1% AEP (1 in 1000 year) event depths reach up to approximately 4m in parts of the south western corner of the site. Depths increase by between 1m to 2m between the modelled return periods.	Velocities are generally low (<0.5m/s) across the range of modelled return periods.	The prevalent hazard category affecting this site is 'danger for most.' For the higher return periods the hazard at the south western corner of the site is 'danger for all.'	n/a	It is strongly recommended that alternative sites are considered in preference to this site as the area is acting as a purpose built storage area. It is very important that this area is maintained as such. This in addition to residual risk from the presence of the railway line across the western boundary of the site mean that the flood risk posed to the site is high.