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Site Category	Strategic Employment Sites
Site code	HOR9
Site name	Horley Business Park

Site details	OS Grid	528949, 141956	528949, 141956		
	Area	30.0H2			
	Aica	้ 50.9⊓a			
	Current land use	Greenfield			
	Proposed site use	Employment			
	NPPF Flood risk vulnerability	Less Vulnerable			
	Existing watercourses	No watercourses e several ordinary w	exist within the atercourses ar	site boundary. A main river a present to the west of the	watercourse and sites.
	Flood history	The EA Historic Fl had two recorded t east has recorded flooding.	ood Map identi fluvial flood inc incidents of int	ifies that the north and east of idents in 1960 and 1968. Th ternal property damage from	of the site have e B2036 to the surface water
			Proportion of	site at risk in Flood Zones	
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	24%	76%
	Fluvial	 Available inodefield data: Burstow Stream Model (Environment Agency, 2011) covers the west of the site, and the Upper Mole Model (Environment Agency 2006) covers the west of the site. Flood characteristics: The site lies beyond the 1 in 100-year (1% AEP) flood extent of Tilgate Brook and Burstow Stream, but a large area of the northern and eastern area of the site lies in Flood Zone 2. 			
Sources of		Proportion of site at risk (RoFSW)			
flood risk		30-уеа	ır	100-year	1,000-year
		2%3%1Description of surface water flow paths: The site shows potential for significant ponding at the north west o during 1 in 30-year (3.3% AEP) rainfall event and greater return peri- extends in a band to the centre of the site.The tracks running across the site currently provide linear surface w paths during the 1 in 1,000-year (0.1%) event, however this is likely to with the proposed development			15%
	Surface Water				h west of the site aturn periods. This surface water flow is likely to change
		Areas Susceptible to Groundwater Flooding Map class (risk of			
		groundwater emergence)			
Groundwater The east o groundwater west having			site, approxim s at or very ne ligible risk of g	nately half the area, is co ear the surface with the rem roundwater flooding.	nsidered to have aining area to the
	Reservoir	The south east of reservoir failure.	f the site falls	within the maximum exten	t of flooding from
	Canal	The site is not located within 100m of a canal.			





Site Category	Strategic Employment Sites
Site code	HOR9
Site name	Horley Business Park

	Defences	Defence Type	Standard of Protection	Co	ondition
		The site does not receive protection from flood defences.			
Flood risk		Culvert / structureThere are no structures on the site (identified at this stage) with the potential to block.			
management infrastructure	Residual risk	Impounded water body failure?	The site is within the extent of flooding from reservoir failure.		
		Defence breach /	Breach 2	Zone	
		overtopping?	The site is not at ris defences.	sk from	breach of
	Flood warning	The site lies within the "Burstow Stream at East and North Horley" flood warning area and Ilfield Brook, Upper River Mole, Gatwick Stream, Burstow Stream and Salfords Stream flood alert area.			
Emergency planning	Environment Agency flood warnings are now issued to individuals via the Flood Information Service.				
	Access and egress	Access and egress to this site may be achieved via the B2036 to the east which has a small risk of flooding from surface water and a recorded incident of property flooding from surface water. A connection from the A23 roundabout to the south could be considered.			
	Climate change	River Basin District	Central (Higher Central	Upper End
Climate	'2080s'	Thames	25%	35%	70%
Change	Implications for the site	Climate change is unlikely to sig of this site.	nificantly change the Flood	d Zone cla	ssification



Site Category	Strategic Employment Sites
Site code	HOR9
Site name	Horley Business Park

	Bedrock Geology	Wealdon Group, mudstone, siltstone and sandstone.	
	Superficial Geology	Sand and gravel river terrace deposits cover the whole of the site.	
	Soils	The south west of the site has slowly permeable loamy and clayey soils with impeded drainage, the north east of the site has naturally wet loamy soil with high groundwater.	
		SuDS should be designed around existing surface water flow paths and areas of ponding. Due to the existing flood risk to properties surrounding the site, surface water discharge should be restricted to greenfield runoff rates as a minimum.	
Requirement	SuDS	The slowly permeable soils present on the site and the high groundwater table may limit the opportunities for infiltration SuDS, however this large undeveloped site should be able to implement other SuDS features and designs.	
control and impact mitigation	ainage ol and pact jation	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.	
		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.	
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.	
	Historic Landfill Site	No part of the site is designated by the Environment Agency as historic landfill site.	
	Opportunities for flood risk betterment	Opportunity to implement exemplar SuDS design following CIRIA and SCC guidance on runoff rates and volumes, contributing to the reduction of flood peaks downstream.	
	Sequential Test an	d Exception Test requirements	
	24% of the site is wi	thin Flood Zone 2 and also at risk of surface water flooding.	
Recommend- ations for Local Plan policy	 The sequential test must be passed and it is expected that all built development will be located sequentially within Flood Zone 1. The Exception Test will be required: If More Vulnerable and Essential Infrastructure is located in FZ3a If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change If Essential Infrastrucutre is located in Flood Zone 3b 		
	Development will no Highly Vulr More Vulne	nt be permitted in the following scenarios: nerable development within FZ3a or FZ3a plus climate change and FZ3b. erable and Less Vulnerable development within FZ3b.	





Site Category	Strategic Employment Sites
Site code	HOR9
Site name	Horley Business Park

Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers
Flood risk assessment:
 At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required.
 Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage
 Groundwater flood risk in the north of the site should be investigated. Detailed modelling will be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated.
 Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. Cuidenes for site design and making development sofe.
Guidance for site design and making development safe:
 Development must seek opportunities to reduce overall level of flood risk at the site.
 The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent
 Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.



Site Category	Urban Extensions
Site code	SSW2
Site name	Land at Sandcross Lane, South Park, Reigate

Sile details	OS Grid reference	524954 148433			
	Area	16.58Ha			
	Current land use	Greenfield			
	Proposed site use	Urban Extension s	ite		
	Flood risk vulnerability	More vulnerable			
	Existing watercourses	An ordinary watero site and exits throu	course (draina ugh a culvert ເ	ge ditch) flows from the north Inder Slipshatch Road.	nern end of the
	Flood history	External property to boundary of the sin noted on the Surre	flooding has be te), and the nc ey Wetspots da	een reported along Whitehall orth-eastern tip of the site is c atabase.	lane (the western lose to a road
			Proportion of	f site at risk in Flood Zones	5
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	0%	100%
	Fluvial	 Available modelled data: There is no fluvial modelled data available for the ordinary watercourse on the site, and the Risk of Flooding from Surface Water mapping has been used as a proxy. Flood characteristics: Risk of flooding from Surface Water mapping suggests that localised flooding may occur from the unnamed ordinary watercourse that flows across the site. 			
		proxy. Flood characteris Risk of flooding fr may occur from th	stics: om Surface W e unnamed or	/ater mapping suggests that dinary watercourse that flows	localised flooding sacross the site.
Sources of		proxy. Flood characteris Risk of flooding fr may occur from th	stics: om Surface W e unnamed or Proportion	/ater mapping suggests that dinary watercourse that flows	localised flooding s across the site.
Sources of flood risk		proxy. Flood characteris Risk of flooding fr may occur from th 30-yea	stics: om Surface W e unnamed or Proportion r	/ater mapping suggests that dinary watercourse that flows n of site at risk (RoFSW) 100-year	localised flooding s across the site. 1,000-year
Sources of flood risk		proxy. Flood characteris Risk of flooding fr may occur from th 30-yea 3%	stics: om Surface W e unnamed or Proportion	/ater mapping suggests that dinary watercourse that flows n of site at risk (RoFSW) 100-year 7%	localised flooding across the site. 1,000-year 20.3%
Sources of flood risk	Surface Water	proxy. Flood characteris Risk of flooding fr may occur from th 30-yea 3% Description of su A significant surfa the site from nor southern end of th ponding from a 1 i	stics: om Surface W e unnamed or Proportion r urface water flow the water flow the water flow the water in a 1 in n 100-year or	/ater mapping suggests that dinary watercourse that flows n of site at risk (RoFSW) 100-year 7% low paths: path follows the ordinary w uth. Significant ponding is n 30-year event, and more ex 1 in 1000-year event.	localised flooding s across the site. 1,000-year 20.3% atercourse across likely towards the atensive flows and
Sources of flood risk	Surface Water Groundwater	proxy. Flood characteris Risk of flooding fr may occur from th 30-yea 3% Description of su A significant surfa the site from nor southern end of th ponding from a 1 i Areas Susceptibl groundwater eme	stics: om Surface W e unnamed or Proportion r Inface water fl water flow th west to so he site in a 1 in n 100-year or le to Groundw ergence)	/ater mapping suggests that dinary watercourse that flows n of site at risk (RoFSW) 100-year 7% low paths: path follows the ordinary w uth. Significant ponding is n 30-year event, and more ex 1 in 1000-year event.	atercourse across likely towards the site.
Sources of flood risk	Surface Water Groundwater	proxy. Flood characteris Risk of flooding fr may occur from th 30-yea 3% Description of su A significant surfa the site from nor southern end of th ponding from a 1 i Areas Susceptibl groundwater eme Negligible risk of g	stics: om Surface W e unnamed or Proportion r urface water flow the site in a 1 in n 100-year or the to Groundw ergence) proundwater flow	/ater mapping suggests that dinary watercourse that flows n of site at risk (RoFSW) 100-year 7% low paths: path follows the ordinary w uth. Significant ponding is n 30-year event, and more ex 1 in 1000-year event.	localised flooding s across the site. 1,000-year 20.3% Patercourse across likely towards the actensive flows and isk of
Sources of flood risk	Surface Water Groundwater Reservoir	proxy. Flood characteris Risk of flooding fr may occur from th 30-yea 3% Description of su A significant surfa the site from nor southern end of th ponding from a 1 i Areas Susceptibl groundwater eme Negligible risk of g The site does not a	stics: om Surface W e unnamed or Proportion r urface water flow the water flow the water flow the water in a 1 ir n 100-year or the to Groundwater flow at risk from res	/ater mapping suggests that dinary watercourse that flows n of site at risk (RoFSW) 100-year 7% low paths: path follows the ordinary w uth. Significant ponding is n 30-year event, and more ex 1 in 1000-year event. vater Flooding Map class (r poding. servoir flooding.	Iocalised flooding s across the site. 1,000-year 20.3% Patercourse across likely towards the across the site site. iikely towards the across flikely towards the across and iikely flows and



Site Category	Urban Extensions
Site code	SSW2
Site name	Land at Sandcross Lane, South Park, Reigate

	Defences	Defence Type Standard of Protection Condition			
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	There are no structures on the site (ide at this stage) with the potential to However the Ordinary Watercours crosses the site does exit the site culvert under Slipshatch Road, blockage risk may be present at this lo		e (identified I to block. ourse that site via a ad, so a nis location.
		Impounded water body failure?	The site is not at ri event of reservoir fail	sk of inunda ure.	ition in the
		Defence breach /	Brea	ch Zone	
		overtopping?	The site is not at risk from breach of defences.		
	Flood warning	The site lies outside the Flood A	lert Area for the River Mole and its tributaries.		
Emergency planning	Access and egress	Access to the site is possible from three sides. However significant risk of surface water flooding exists on Sliphatch Road on the southern side Whitehall Lane to the west and the northern part of Sandcross Lane to the east.			
	Climate change	River Basin District	Central	Higher Central	Upper End
Climate	'2080s'	Thames	25%	35%	70%
Change	Implications for the site	Climate change is unlikely to cha	ange the Flood Zone cl	assification o	f this site.



Site Category	Urban Extensions
Site code	SSW2
Site name	Land at Sandcross Lane, South Park, Reigate

	Bedrock Geology	Wealdon Group, Mudstone, Siltstone and Sandstone		
	Superficial Geology	No superficial deposits are known to exist on the site.		
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage.		
		The low permeability of this site suggests that infiltration systems may not be appropriate. However, sloping nature of the site west to east) allows opportunities for SuDS which drain by gravity, and there is potential to utilise the existing watercourse.		
Requirement for drainage	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.		
control and impact mitigation		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.		
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.		
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.		
	Opportunities for	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream and existing surface water flow paths leaving the site.		
	betterment	Opportunity to investigate the condition and capacity of the culvert at the southern edge of the site, and determine whether it can accept flows from the developed site. Culvert enlargement may be required if the asset is undersized.		
	Sequential Test an	d Exception Test requirements		
	The site is within Flo water flooding, whi Exception test if req	bod Zone 1 but does contain an Ordinary Watercourse and is at risk from surface ch should be taken into account when carrying out the Sequential Test and uired.		
Recommend-	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers			
ations for Local Plan policy	 Flood risk assessment: At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage Impacts of the development on flood risk to the wider catchment should assessed. 			
	Guidance for site design and making development safe:			
	DevelopmeThe surfact	ent must seek opportunities to reduce overall level of flood risk at the site. e water drainage strategy should ensure that the development does not increase		





Site Category	Urban Extensions
Site code	SSW2
Site name	Land at Sandcross Lane, South Park, Reigate
flood risk e • Safe acces • All develop flooding du (CIRIA Mat	Isewhere. s and egress should be demonstrated in the 1 in 100 plus climate change event. oment should adopt source control SuDS techniques to reduce the risk of the to post-development runoff. SuDS design should follow current best practice nual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple

• Drainage designs should 'design for exceedance' and accommodate existing surface water flow routes, with development located outside of existing flood risk areas.

Level 2 SFRA Detailed Site Summary Tables



Site code		SSW7			
Site name		Hartswood Nursery and land west Castle Drive, Reigate			
		L			
Site details	OS Grid reference	525543 147882			
	Area	1.59Ha			
	Current land use	Greenfield, with farm building			
	Proposed site use	Urban Extension site			
	Flood risk vulnerability	More vulnerable			
	Existing watercourses	A sluice, identified as a main river on the detailed river network map starts in the north-west corner of the site.			
	Flood history	No recorded incidents of fluvial flooding have been identified. Internal property flooding from surface water has been recorded on Dovers Green Road (A217) to the south of the site.			
			Proportion of site at risk in Flood Zones		
		FZ3b	FZ3a	FZ2	FZ1
		0.3%	0.3%	0.3%	99.7%
		Available modelled data:			
	Fluvial	The area of the site is covered by the Middle Mole Model currently being			
		updated.			
		Whilst the site pre	stics: adominantly ou	Itside E72 and E73 a small	area at the north-
		whist the site predominantly outside FZ2 and FZ3, a small area at the north- western corner of the site overlaps with FZ3. The impact of climate change of			
		this should be con	sidered.		-
Sources of			Proportion	of site at risk (RoFSW)	
flood risk		30-yea	ar	100-year	1,000-year
		2%		3%	8%
	Surface Water	Description of surface water flow paths:			
		with the Sluice in	a 1 in 30-ye	ar event. A smaller flow pa	ath may cross the

northern half of the site in a 1 in 1000-year event.

The site does not at risk from reservoir flooding.

The site is not located within 100m of a canal.

groundwater emergence)

Negligible risk of groundwater flooding.

Groundwater

Reservoir

Canal

Areas Susceptible to Groundwater Flooding Map class (risk of



Site code	SSW7
Site name	Hartswood Nursery and land west Castle Drive, Reigate

	Defences	Defence Type Standard of Protection Condition			ondition
	Delenote	The site does not receive protection from flood defences.			
Flood risk management infrastructure		Culvert / structure blockage?	There are no structures of at this stage) with the pot	on the site ential to b	e (identified block.
	Residual risk	Impounded water body failure?	d water body The site is not at risk of inundation in the event of reservoir failure.		tion in the
		Defence breach /	Breach Z	one	
		overtopping?	The site is not at ris defences.	sk from	breach of
	Flood warning	The north-west tip of the site lies within the "River Mole and its tributaries from Kinnersley Manor to South Hersham" Flood Alert Area.			
Emergency		Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
planning	Access and egress	The site can be accessed from the A217 to the east, Castle Drive to the North and an un-named road to the south. Castle Drive has a significant risk from surface water flooding.			
	Climate change	River Basin District Central Higher Central			
Climate	'2080s'	Thames	25%	35%	70%
Change	Implications for the site	Climate change is unlikely to cha	ange the Flood Zone classi	fication o	f this site.



Site code	SSW7
Site name	Hartswood Nursery and land west Castle Drive, Reigate

	Bedrock Geology	Wealdon Group, Mudstone, Siltstone and Sandstone	
	Superficial Geology	No superficial deposits are known to exist on the site.	
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage.	
		The low permeability of this site suggests that infiltration systems may not be appropriate. However, sloping nature of the site south to north) allows opportunities for SuDS which drain by gravity, and there is potential to utilise the existing drainage ditch to the north west.	
Requirement	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.	
for drainage control and impact mitigation		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.	
mugation	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.	
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.	
	Opportunities for flood risk	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream and existing surface water flow paths leaving the site.	
	betterment	Opportunity to investigate the condition and capacity of the drainage ditch at the north-western edge of the site, and determine whether it can accept flows from the developed site.	
	Sequential Test an	d Excention Test requirements	
	99% of site is within account when carry The sequential test	Flood Zone 1 but at risk from surface water flooding, which should be taken into ing out the Sequential Test and Exception test if required. should be applied within the site.	
Recommend-	Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:		
ations for Local Plan policy	 If More \ If Highly change. 	/ulnerable and Essential Infrastructure is located in FZ3a. Vulnerable development is located in FZ2 or Flood Zone 3a plus climate	
	 If Essen Development will provide the second s	tial intrastructure is located in Flood Zone 3b	
	Highly V	ulterable development within FZ3a or Flood Zone 3a plus climate change and	
	FZ3b. • More Vu	Inerable and Less Vulnerable development within FZ3b.	



Site code	SSW7
Site name	Hartswood Nursery and land west Castle Drive, Reigate

Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers
Flood risk assessment:
 At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. Consultation with the Local Authority and the Environment Agency should be undertaken at
an early stage
 Impacts of the development on flood risk to the wider catchment should assessed.
Guidance for site design and making development safe:
 Development must seek opportunities to reduce overall level of flood risk at the site.
• The surface water drainage strategy should ensure that the development does not increase flood risk elsewhere.
• Safe access and egress should be demonstrated in the 1 in 100 plus climate change event.
 All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
• Drainage designs should 'design for exceedance' and accommodate existing surface water flow routes, with development located outside of existing flood risk areas.



JBA consulting

Site code		SSW9			
Site name		Land at Dovers Farm, Woodhatch, Reigate			
Site details	OS Grid reference	525946 147946			
	Area	6.10Ha			
	Current land use	Greenfield			
	Proposed site use	Urban Extension site			
	Flood risk vulnerability	More vulnerable			
	Existing watercourses	Earlswood Brook, of the site. A drair likely to be flow int	classified as a nage ditch is pi o a culvert as	main river, is present at the resent on the southern side on the southern side on the site.	south-eastern tip of the site which is
	Flood history	No fluvial flood ever recorded as flooding	ents are record ng in 1968 app	led for the site. Earlswood B proximately 200 m south of th	rook was ne site.
			Proportion of	site at risk in Flood Zones	5
		FZ3b	FZ3a	FZ2	FZ1
		0.3%	0.3%	0.5%	99.5%
	Fluvial	Available modelled data: The area of the site is covered by the Middle Mole Model currently being updated. Flood characteristics: The south-east corner of the site lies within FZ2 and FZ3 of Earlswood Brook.			
		updated. Flood characteris The south-east co	stics: rner of the site	lies within FZ2 and FZ3 of E	Earlswood Brook.
		updated. Flood characteris The south-east co	stics: rner of the site Proportion	lies within FZ2 and FZ3 of E	Earlswood Brook.
Sources of		updated. Flood characteris The south-east co 30-yea	stics: rner of the site Proportion	lies within FZ2 and FZ3 of E of site at risk (RoFSW) 100-year	Earlswood Brook.
Sources of flood risk		updated. Flood characteris The south-east co 30-yea 1%	stics: rner of the site Proportion	lies within FZ2 and FZ3 of E of site at risk (RoFSW) 100-year 4%	Earlswood Brook. 1,000-year 14%
Sources of flood risk	Surface Water	updated. Flood characteris The south-east co 30-yea 1% Description of su A surface water f joining up with the southern boundar may occur during a	rner of the site Proportion r rface water fl low path is pr he course of y of the site. a 1 in 30-year	lies within FZ2 and FZ3 of E of site at risk (RoFSW) 100-year 4% ow paths: esent from the north-west of the drainage ditch, then in the case of this southerr event.	Earlswood Brook. 1,000-year 14% corner of the site, flowing along the n section, ponding
Sources of flood risk	Surface Water Groundwater	updated. Flood characteris The south-east co 30-yea 1% Description of su A surface water f joining up with tt southern boundar may occur during a Areas Susceptibl groundwater eme	rface water fl row path is proportion recourse of y of the site. a 1 in 30-year e to Groundwergence)	lies within FZ2 and FZ3 of E of site at risk (RoFSW) 100-year 4% ow paths: esent from the north-west of the drainage ditch, then in the case of this southerr event.	Earlswood Brook. 1,000-year 14% corner of the site, flowing along the n section, ponding
Sources of flood risk	Surface Water Groundwater	updated. Flood characteris The south-east co 30-yea 1% Description of su A surface water f joining up with th southern boundar may occur during a Areas Susceptibl groundwater eme Negligible risk of g	roundwater flow	lies within FZ2 and FZ3 of E of site at risk (RoFSW) 100-year 4% ow paths: esent from the north-west of the drainage ditch, then if in the case of this southerr event. rater Flooding Map class (r	Earlswood Brook. 1,000-year 14% corner of the site, flowing along the section, ponding risk of
Sources of flood risk	Surface Water Groundwater Reservoir	updated. Flood characteris The south-east co 30-yea 1% Description of su A surface water f joining up with the southern boundary may occur during a Areas Susceptible groundwater emer Negligible risk of g The south-east co from reservoir failu	rner of the site Proportion r rface water fl low path is pr he course of y of the site. a 1 in 30-year e to Groundwater proundwater flo proundwater flo proner of the site re.	lies within FZ2 and FZ3 of E of site at risk (RoFSW) 100-year 4% ow paths: esent from the north-west of the drainage ditch, then in the case of this southerr event. vater Flooding Map class (r oding. te falls within the maximum	Earlswood Brook. 1,000-year 14% corner of the site, flowing along the n section, ponding



Site code	SSW9
Site name	Land at Dovers Farm, Woodhatch, Reigate

	Defences	Defence Type	Standard of Protect	ion Co	ondition	
Flood risk management infrastructure	Derenoes	The site does not receive protection from flood defences.				
		Culvert / structure blockage?	The drainage ditch at site is likely to enter under the road.	The drainage ditch at the southern end of the site is likely to enter a culvert as it passes under the road.		
	Residual risk	Impounded water body failure?	The south-east corner of the site falls within the maximum extent of flooding from reservoir failure.		falls within ding from	
		Defense breach /	Breac	h Zone		
		overtopping?	The site is not at defences.	risk from	breach of	
Emergency	Flood warning	The south-east corner of the site lies within the "River Mole and its tributaries from Kinnersley Manor to South Hersham" Flood Alert Area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.				
planning	Access and egress	The site can be accessed from Ashdown Road to the north, Lonesome Lane to the east, and an un-named minor road at the south west. Of these Ashdown Road is likely to experience surface water flooding in a 1 in 1000-year event and Lonesome lane in a 1 in 30-year event.				
	Climate change	River Basin District	Central	Higher Central	Upper End	
Climate	'2080s'	Thames	25%	35%	70%	
Change	Implications for the site	The Flood Zones in this location are presently derived from broadscale modelling, however it is understood that the watercourse has been includ update to the Middle Mole model and it is understood that there will be ve limited impacts to the site as a result of climate change.			ale ncluded in be very	



Site code	SSW9
Site name	Land at Dovers Farm, Woodhatch, Reigate

	Bedrock Geology	Wealdon Group Mudstone, Siltstone and Sandstone.			
Requirement for drainage control and impact mitigation	Superficial Geology	No superficial deposits are known to exist on the site.			
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage.			
		The low permeability of this site suggests that infiltration systems may not be appropriate. However, sloping nature of the site east to west) allows opportunities for SuDS which drain by gravity, and there is potential to utilise both the existing drainage ditch to the north west and to discharge to the Earlswood Brook.			
	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.			
		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.			
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.			
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.			
	Opportunities for flood risk	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream and existing surface water flow paths leaving the site.			
	betterment	Opportunity to investigate the condition and capacity of the drainage ditch at the southern end of the site and its associated culverts, and determine whether it can accept flows from the developed site.			
	Sequential Test an	d Exception Test requirements			
	99% of site is within Flood Zone 1 but it is shown to be at risk from surface water flooding and from the ordinary watercourse on site, which should be taken into account when carrying out the Sequential Test and Exception test if required.				
	The sequential test should be applied within the site.				
Recommend-	Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:				
ations for Local Plan policy	 If More Vulnerable and Essential Infrastructure is located in FZ3a. If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change 				
	If Essen	tial Infrastructure is located in Flood Zone 3b			
	● Highly V	unerable development within FZ3a or Flood Zone 3a plus climate change and			
	FZ3b. • More Vu	Inerable and Less Vulnerable development within FZ3b.			



Site code	SSW9
Site name	Land at Dovers Farm, Woodhatch, Reigate

Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers
Flood risk assessment:
 At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required.
 Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage
Impacts of the development on flood risk to the wider catchment should assessed.
Guidance for site design and making development safe:
 Development must seek opportunities to reduce overall level of flood risk at the site.
• The surface water drainage strategy should ensure that the development does not increase flood risk elsewhere.
• Safe access and egress should be demonstrated in the 1 in 100 plus climate change event.
 All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
 Drainage designs should 'design for exceedance' and accommodate existing surface water flow routes, with development located outside of existing flood risk areas.

Site code		NWH1				
Site name		Land at Meath Green Lane, Horley				
Site details	OS Grid reference	527439 144957				
	Area	9.27Ha				
	Current land use	Greenfield.				
	Proposed site use	Urban Extension site				
	Flood risk vulnerability	More vulnerable				
	Existing watercourses	Burstow Stream forms the northern boundary of the site and is classified a main river.				
	Flood history	45% of the proposed site is in an area with recorded flood outline flooding is known to have occurred in 1968, 1990 and 2000.				
			Proportion of	site at risk in Flood Zones		
		FZ3b	FZ3a	FZ2	FZ1	
		39%	46%	55%	45%	
	Fluvial	The site lies within the area covered by the Burstow Stream Modelling study (Environment Agency 2011) Flood characteristics: A significant part of the site lies within Flood Zones 2 and 3 associated with Burstow Stream.				
		Proportion of site at risk (RoFSW)				
Sauraaa af		30-уеа	r	100-year	1,000-year	
flood risk		11%		23%	30%	
	Surface Water	Description of su Significant ponding in 30-year event, a	in response to a 1 w Stream.			
		Areas Susceptibl groundwater eme	e to Groundw ergence)	ater Flooding Map class (r	isk of	
	Groundwater	The northern 2/3rds of the site is at negligible risk of groundwater flooding, however the southern 1/3rd may experience groundwater levels at or very near the surface and is considered at risk of groundwater flooding.				
	Reservoir The site is not at risk from reservoir flooding.					
	Reservoir	The site is not at ri	sk from reserv	oir flooding.		





Site code	NWH1
Site name	Land at Meath Green Lane, Horley

		Defence Type Standard of Protection Condition			ondition
Flood risk management infrastructure	Defences	The site benefits from protection from the Upper Mole Flood Alleviation Scheme.			
		Culvert / structure blockage?	Culvert / structure Burstow Stream flows under Meath Grube blockage? Lane providing an opportunity for blockage		
	Residual risk	Impounded water body failure?	The site is not at risk of inundation in the event of reservoir failure.		
		Defense breech /	Breach	Zone	
		overtopping?	The site is not at defences.	risk from	breach of
Emergency planning	Flood warning	The site lies within the "Burstow Stream at East and North Horley" flood warning area and "Ilfield Brook, Upper River Mole, Gatwick Stream, Burstow Stream and Salfords Stream" flood alert area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
,	Access and egress	The site can be accessed from Meath Green Lane which runs across the site. This road lies within FZ3 where it crosses Burstow Stream, and is also at risk of flooding from surface water in this area in a 1 in 30-year event. Access will also be available from the North West Sector once this has been completed			
	Climate change	River Basin District	Central	Higher Central	Upper End
Climate	'2080s'	Thames	25%	35%	70%
Change	Implications for the site	The floodplain in this location is well constrianed by the local topography and therefore the Flood Zone 3a + 70% extent is only predicted to be marginally larger than the current Flood Zone 3a.			

Level 2 SFRA Detailed Site Summary Tables



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	Bedrock Geology	Wealdon Group Mudstone, Siltstone and Sandstone.			
Requirement for drainage control and impact mitigation	Superficial Geology	No superficial deposits are known to exist on the site.			
	Soils	The majority of the site is covered by loamy soils with naturally high groundwater that are naturally wet. The northern part of the site has slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils, with impeded drainage.			
	020	The low permeability of this site, naturally wet soils and high groundwater table suggest that infiltration systems may not be appropriate. SuDS should be designed to accommodate existing areas of fluvial and surface water flood risk. Drainage features at the south and southeast of the site should be designed to be resilient to fluvial flooding.			
	Subs	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.			
		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.			
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.			
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.			
	Opportunities for flood risk betterment	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream.			
	Sequential Test an	d Exception Test requirements			
	The Sequential Test must be passed. Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:				
	 If More Vulnerable and Essential Infrastructure is located in FZ3a. 				
	 If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate 				
	If Essential Infrastructure is located in Flood Zone 3b				
	Development will no	t be permitted in the following scenarios:			
Recommend-	 Highly V 	ulnerable development within FZ3a or Flood Zone 3a plus climate change and			
Local Plan	FZ3b.	Incrable and Less Vulnerable development within E72b			
policy	Recommendations	for requirements of site-specific Flood Risk Assessment including			
	guidance for developers				
	Flood risk ass	essment:			
	• At the planning application stage, a site-specific flood risk assessment (considering all				
	 Consultation 	on with the Local Authority and the Environment Agency should be undertaken at			
	an early sta	age.			
	 Detailed modelling will be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to 				



Site code	NWH1	
Site name	Land at Meath Green Lane, Horley	
 whether ex Climate ch 2016) for th Guidance for s Developme The develo and 3a + u preserved Safe acces Compensa plus appro Existing su design. Onsite atter peak flows All develop flooding du (CIRIA Ma benefits ind 	kisting detailed models need to be updated. hange modelling should be undertaken using the relevant allowances (February he type of development and level of risk. site design and making development safe: ent must seek opportunities to reduce overall level of flood risk at the site. opment should be designed using a sequential approach. Flood Zones 2 and 3, upper end climate change (subject to a detailed flood risk assessment) should be as public green space, with built development restricted to Flood Zone 1. ss and egress should be demonstrated in the 1 in 100 plus climate change event. tion storage would need to be provided for any land-raising within the 1 in 100 priate climate change flood extent urface water flow paths should be retained and incorporated within the site enuation options would need to be tested to ensure that altering the timing of leaving the site does not exacerbate flooding downstream. pment should adopt source control SuDS techniques to reduce the risk of ue to post-development runoff. SuDS design should follow current best practice nual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple cluding water quality, biodiversity, amenity, green infrastructure etc.	

Level 2 SFRA Detailed Site Summary Tables

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Site code		NWH2			
Site name		Land at Bonehurst Road, Horley			
Site details	OS Grid reference	528298 144516			
	Area	5.09Ha			
	Current land use	Greenfield			
	Proposed site use	Urban Extension site			
	Flood risk vulnerability	More vulnerable			
	Existing watercourses	Burstow Stream forms the north-eastern boundary of the site.			
Flood history 70% of the site flooding in 1968, and Bonehurst road fl boundary in December 2013.					up to the site
			Proportion of	site at risk in Flood Zones	
		FZ3b	FZ3a	FZ2	FZ1
		6%	7%	70%	30%
	Fluvial	The site lies within the area covered by the Burstow Stream Modelling study (Environment Agency 2011) Flood characteristics: A significant part of the site lies within Flood Zones 2 and 3 associated with Burstow Stream.			
		Proportion of site at risk (RoFSW)			
Sources of		30-yea	ar .	100-year	1,000-year
flood risk		1%		3%	15%
	Surface Water	Description of surface water flow paths: Significant ponding may occur in the north-east corner of the site in a 1 in 30- year event, and along the course of Burstow stream.			
	Groundwater	Areas Susceptibl groundwater eme	le to Groundw ergence)	vater Flooding Map class (r	isk of
		Negligible risk of groundwater flooding.			
	Reservoir	The site is not at risk of reservoir flooding.			
				nooung.	



Site code	NWH2
Site name	Land at Bonehurst Road, Horley

		Defence Type	Standard of Protect	ion Co	ondition
Flood risk management infrastructure	Defences	The site benefits from protection from the Upper Mole Flood Alleviation Scheme.			
	Providentiale	Culvert / structure blockage?	Upstream of the site under the A23 with flooding to the east – road and flood the no indicted in the climat maps	Burstow Stre a potentia which may rthern part o e change a	am passes I to cause overtop the f the site as nd RoFSW
		Impounded water body failure?	The site is not at ris	The site is not at risk of inundation in the event of reservoir failure.	
		Defence breach /	Bread	ch Zone	
		overtopping?	The site is not at defences.	risk from	breach of
Flood warning Emergency		The site lies within the "Burst warning area and "Ilfield Brook, Stream and Salfords Stream" flo Environment Agency flood warni Information Service.	ow Stream at East a Upper River Mole, Ga od alert area. ngs are now issued to i	nd North He atwick Strea ndividuals vi	orley" flood m, Burstow a the Flood
planning	Access and egress	Access to the site could be from the A23 to the east (Bonehurst Road) and to the west from Avondale Close. Both of these roads are likely to suffer from ponding during a 1 in 100-year event. The A23 next to the site recorded on the Surrey Wetspots database, and has recorded incidents of property flooding from surface water.			oad) and to suffer from rded on the rty flooding
	Climate change	River Basin District	Central	Higher Central	Upper End
Climate Change	'2080s'	Thames	25%	35%	70%
	Implications for the site	Climate change under a +70% scenario is likely to increase the extent of the 1 in 100 year event over the nothern part of the site, with extensive flooding across the A23.			nt of the 1 oding



Level 2 SFRA Detailed Site Summary Tables



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	Bedrock Geology	Wealdon Group Mudstone, Siltstone and Sandstone.		
Requirement for drainage control and impact mitigation	Superficial Geology	No superficial deposits are known to exist on the site.		
	Soils	The site is covered by loamy soils with naturally high groundwater that are naturally wet.		
		The naturally wet soils and high groundwater table suggest that infiltration systems may not be appropriate. SuDS should be designed to accommodate existing areas of fluvial and surface water flood risk. Drainage features at the south and southeast of the site should be designed to be resilient to fluvial flooding.		
	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.		
		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.		
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.		
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.		
	Opportunities for flood risk betterment	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream.		
	Sequential Test an	d Exception Test requirements		
	The Sequential Test must be passed. Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:			
	If More Vulnerable and Essential Infrastructure is located in FZ3a.			
	 IT Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change 			
	 If Essential Infrastructure is located in Flood Zone 3b 			
	Development will not be permitted in the following scenarios:			
ations for	Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and			
Local Plan	 FZ3b. More Vulnerable and Less Vulnerable development within FZ3b 			
policy	Recommendations for requirements of site-specific Flood Risk Assessment. including			
	guidance for devel	opers		
	Flood risk ass	essment:		
	 At the plat sources of 	flooding) and surface water drainage strategy will be required.		
	Consultation	n with the Local Authority and the Environment Agency should be undertaken at		
	an early sta	age.		
	Detailed m Environme	nt Agency and LLFA should be consulted to obtain the latest hydraulic modelling		





Site code	NWH2
Site name	Land at Bonehurst Road, Horley
 information whether ex Climate ch 2016) for ti The Enviro flood zone developme river corrid benefits. Guidance for s Developme The develo and 3a + u preserved Safe access Compensa plus appro Existing su design. Onsite atte peak flows All develo flooding du (CIRIA Ma benefits ind 	In for the site at the time of the flood risk assessment. They will advise as to kisting detailed models need to be updated. hange modelling should be undertaken using the relevant allowances (February he type of development and level of risk. comment Agency would expect to see no encroachment for development within a inclusive of climate change to ensure an adequate buffer is maintained. Any ent proposed here should look to incorporate additional enhancement along the lor that can potentially increase both flood risk management and environmental site design and making development safe: ent must seek opportunities to reduce overall level of flood risk at the site. opment should be designed using a sequential approach. Flood Zones 2 and 3, upper end climate change (subject to a detailed flood risk assessment) should be as public green space, with built development restricted to Flood Zone 1. as and egress should need to be provided for any land-raising within the 1 in 100 priate climate change flood extent urface water flow paths should be retained and incorporated within the site enuation options would need to be tested to ensure that altering the timing of leaving the site does not exacerbate flooding downstream. pment should adopt source control SuDS techniques to reduce the risk of ue to post-development runoff. SuDS design should follow current best practice inual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple cluding water quality, biodiversity, amenity, green infrastructure etc.



Site Category		Town Centre Development sites				
Site code		REI1				
Site name		Library & Pool Ho	use, Bancroft F	Road, Reigate		
	1					
Site details	OS Grid reference	525520 150144	525520 150144			
	Area	0.22Ha				
	Current land use	Brownfield				
	Proposed site use	Town Centre Development Site				
	Flood risk vulnerability	More vulnerable				
Existing watercourses An ordinary watercourse flows un two other water courses join this of and south. These then exit from the culvert.				nder the site in a culvert from on the southern edge of the the south-west corner of the	h the north, and site from the east site through a	
	Flood history	Flooding was reco property flooding f East.	Flooding was recorded 100 m to the west of the site in 1947 and 1968. Internal property flooding from surface water was recorded in Roebuck Close to the East.			
			Proportion of	site at risk in Flood Zones	;	
		FZ3b	FZ3a	FZ2	FZ1	
		14%	14%	35%	65%	
	Fluvial	Available modelled data: The site is not covered by any detailed modelled flood extents. Flood characteristics: Flood Zone 3 extends over the southern boundary of the site at the confluence of the ordinary watercourses. Flood Zone 2 is also present at the north part of the site.				
Sources of			Proportion	n of site at risk (RoFSW)		
flood risk		30-уеа	ar	100-year	1,000-year	
		3%	26%			
	Surface Water	Description of surface water flow paths: Surface water flow paths are present along the roads around 100-year event. Some ponding may occur at the southern edg 1 in 30-year event.		d the site in a 1 in dge of the site in a		
	Oreanderstan	Areas Susceptibl groundwater eme	le to Groundw ergence)	vater Flooding Map class (r	isk of	
	Groundwater	The site is at risk of groundwater flooding with water levels at or v surface.			at or very near the	
	Reservoir	The site is not at r	isk of reservoi	r flooding.		
	Canal	The site is not located within 100m of a canal.				



Site Category	Town Centre Development sites
Site code	REI1
Site name	Library & Pool House, Bancroft Road, Reigate

Flood risk management infrastructure Residual risk	Defence Type Standard of Protection Condition				
	Derenteed	The site does not receive protection from flood defences.			
		Culvert / structure blockage?	The culvert to the west or risk from blockage.	of the site	presents a
	Residual risk	Impounded water body failure?	ed water body The site is not at risk of inundation in the event of reservoir failure.		tion in the
		Defence breach /	Breach	Zone	
		overtopping?	The site is not at ri defences.	sk from	breach of
	Flood warning	The site lies within the "River Mole and its tributaries from Kinnersley Manor to South Hersham" Flood Alert area.			
Emergency		Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
planning	Access and egress	Access to the site is from Bancroft Road to the north. This road is likey to see surface water ponding during a 1 in 100-year event.			
	Climate change	River Basin District	Central	Higher Central	Upper End
Climate Change	'2080s'	Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to significantly change the Flood Zone classification, with flows in the vacinity of the site limited by the culverted watercourses around the site. Flood risk is likely to most significantly affected by potential blockage of the culverts.			ssification, rses ootential



Site Category	Town Centre Development sites
Site code	REI1
Site name	Library & Pool House, Bancroft Road, Reigate

Requirement for drainage control and impact	Bedrock Geology	Lower Greensand Group – Sandstone and Mudstone		
	Superficial Geology	No superficial deposits are known to exist at this site.		
	Soils	Freely draining slightly acid loamy soils.		
		The freely draining soils and local geology make infiltration SuDS a possibility, however the source protection zone needs to be considered in any scheme. Opportunities to deculvert the watercourse and incorporate into a SuDS scheme should be investigated.		
	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.		
mitigation		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.		
	Groundwater Source Protection Zone	The site lies within SPZ3 (Total Catchment)		
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.		
	Opportunities for flood risk betterment	The culvert exiting the site should be investigated as well as opportunities for using source control SuDS to manage runoff rates and volumes.		
	Sequential Test an	d Exception Test requirements		
	The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:			
	If More Vulnerable and Essential Infrastructure is located in FZ3a.			
	 IT Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change 			
	If Essential Infrastructure is located in Flood Zone 3b			
Recommend-	Development will not be permitted in the following scenarios:			
ations for	 Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and EZ3b 			
Local Plan policy	 More Vulnerable and Less Vulnerable development within FZ3b. 			
	Recommendations guidance for devel	ofor requirements of site-specific Flood Risk Assessment, including opers		
	Flood risk ass	essment:		
	At the play	nning application stage, a site-specific flood risk assessment (considering all flooding) and surface water drainage strategy will be required		
	Consultation an early sta	on with the Local Authority and the Environment Agency should be undertaken at age		
	 Groundwat 	er flood risk in the northeast of the site should be investigated.		



Site Category		Town Centre Development sites
Site code		REI1
Site name		Library & Pool House, Bancroft Road, Reigate
	 Detailed m Environme information whether ex Climate ch 2016) for th The EA ha additional e manageme 	odelling will be required to confirm Flood Zone and climate change extents. The nt Agency and LLFA should be consulted to obtain the latest hydraulic modelling of for the site at the time of the flood risk assessment. They will advise as to isting detailed models need to be updated. ange modelling should be undertaken using the relevant allowances (February ne type of development and level of risk. ave advised that any development proposed here should look to incorporate enhancement along the river corridor that can potentially increase both flood risk ent and environmental benefits.
	Guidance for s	ite design and making development safe:
	 Development must seek opportunities to reduce overall level of flood risk at the site. The development should be designed using a sequential approach. Flood Zones 2 and 3a + upper end climate change (subject to a detailed flood risk assessment) sho preserved as public green space, with built development restricted to Flood Zone 1. 	
	 Safe access and egress should be demonstrated in the 1 in 100 plus climate change of Compensation storage would need to be provided for any land-raising within the 1 in plus appropriate climate change flood extent 	
	 Onsite attenuation options would need to be tested to ensure that altering the tin peak flows leaving the site does not exacerbate flooding downstream. 	
	All develop flooding du (CIRIA Ma benefits inc	oment should adopt source control SuDS techniques to reduce the risk of the to post-development runoff. SuDS design should follow current best practice nual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple cluding water quality, biodiversity, amenity, green infrastructure etc.

Level 2 SFRA Detailed Site Summary Tables

JBA





Site code	RTC6
Site name	Gloucester Road Car Park, Redhill

Flood risk management infrastructure Residual	Defences	Defence Type	Standard of Protection	n Co	ondition
		The site does not receive protection from flood defences.			
		Culvert / structure blockage?	There are no structures at this stage) with the po	on the site otential to b	e (identified block.
	Residual risk	Impounded water body failure?	The site is within the maximum extent o reservoir flooding.		extent of
		Defence breach /	Breach	Zone	
		overtopping?	The site is not at r defences.	isk from	breach of
	Flood warning	The site is not covered by a Flood Alert or Warning area.			
Emergency planning	Access and egress	Access to the site is from a minor road off Gloucester Road to the south of the site. Both this and Gloucester Road has significant surface water ponding in a 1 in 30-year event.			outh of the onding in a
	Climate change	River Basin District	Central	Higher Central	Upper End
Climate Change	'2080s'	Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to sig	nificantly change the Floo	d Zone cla	ssification.



Site code	RTC6
Site name	Gloucester Road Car Park, Redhill

	Bedrock Geology	Lower Greensand Group – Sandstone and Mudstone		
Requirement for drainage control and impact mitigation	Superficial Geology	No superficial deposits are known to exist on the site.		
	Soils	Freely draining slightly acid loamy soils		
		The freely draining nature of the site provides opportunites for infiltration SuDS schemes. However consideration should be paid to the potential risk of high groundwater levels when designing the drainage systems.		
	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.		
		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.		
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.		
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.		
	Opportunities for flood risk betterment	The widespread nature of modelled surface water on the site in combination with the freely draining nature of the site suggest there is a significant opportunity for management of surface water to reduce surface water flow paths leaving the site.		
	Sequential Test an	d Exception Test requirements		
	The site is within Flood Zone 1 but at risk from surface water flooding, which should be taken into account when carrying out the Sequential Test and Exception test if required.			
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers			
Recommend- ations for Local Plan policy	 At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage Impacts of the development on flood risk to the wider catchment should assessed. Guidance for site design and making development safe: Development must seek opportunities to reduce overall level of flood risk at the site. The surface water drainage strategy should ensure that the development does not increase flood risk elsewhere. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple 			
	 benefits inc Drainage d flow routes 	cluding water quality, biodiversity, amenity, green infrastructure etc. esigns should 'design for exceedance' and accommodate existing surface water , with development located outside of existing flood risk areas.		

Site code		RTC5			
Site name		Former Longmead Centre			
Site details	OS Grid reference	527718 150488			
	Area	0.2Ha			
	Current land use	Brownfield			
	Proposed site use	Town Centre Deve	elopment Site		
	Flood risk vulnerability	More vulnerable			
	Existing watercourses	Redhill Brook lies 200m to the east of the site running north to south.			
	Flood history	No fluvial flooding is recorded on the site. Some surface water flooding with causing internal property damage has been recorded in Baxter Avenue within 50m of the south west edge of the site.			
			Proportion of	site at risk in Flood Zones	
		FZ3b	FZ3a	FZ2	FZ1
	Fluvial	0%	0%	0%	100%
		Not covered by any modelled extent.			
		Flood characteristics: Site is completely within Flood Zone 1.			
		30-year		100-year	1,000-year
Sources of flood risk		30%		55%	89%
	Surface Water	Description of su The site lies on a the site, adjacent be present on the widespread surface the majority of the Surface water floor from the site	cription of surface water flow paths: site lies on a significant flow path from west to east in the northern half of site, adjacent to the existing building on the site. Significant ponding may present on the east side of the site in the 1 in 30-year event. More espread surface water may be present in a 1 in 1000-year event covering majority of the site. ace water flooding is shown to impact all the major access routes to and on the site		
		Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)			
	Groundwater	The site is in an area at risk of groundwater flooding where groundwater levels are at or close to the surface.			
	Reservoir	The site is outside the maximum extent of flooding from reservoirs.			
	Canal	The site is not located within 100m of a canal.			





Site code	RTC5
Site name	Former Longmead Centre

Flood risk management infrastructure	Defences	Defence Type	Standard of Protect	ion Co	ondition	
		The site does not receive protection from flood defences.				
	Residual risk	Culvert / structureThere are no structures identified at this stage with the potential to block.				
		Impounded water body failure?The site is outside the maximum extent or flooding from reservoirs.			n extent of	
		Defence breach / overtopping?	Bread	Breach Zone		
			The site is not at defences.	risk from	breach of	
Emergency planning	Flood warning	The site lies within the "Redhill" Brook Flood Alert area and the "Redhill Brook at Redhill" Flood Warning area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.				
	Access and egress	Access is from Holland Close to the south via Fairfax or Baxter Avenue. Both of these roads are likely to experience surface water flooding in a 1 in 30-year event and therefore would restrict access to the site.				
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End	
		Thames	25%	35%	70%	
	Implications for the site	Climate change is unlikely to sig	nificantly change the FI	ood Zone cla	assification.	

Level 2 SFRA Detailed Site Summary Tables



	-			
Requirement for drainage control and impact mitigation	Bedrock Geology	Lower Greensand Group – Sandstone and mudstone		
	Superficial Geology	No superficial deposits are known to exist on the site.		
	Soils	Freely draining slightly acid loamy soils cover the site.		
		The freely draining nature of the soils, and local geology may allow the impementation of an infiltration SuDS scheme. However the groundwater levels may restrict this.		
	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.		
		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.		
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.		
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.		
	Opportunities for flood risk betterment	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream.		
	Sequential Test and Exception Test requirements			
	 The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required: If More Vulnerable and Essential Infrastructure is located in FZ3a. 			
	 If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate 			
	change.			
	• In Essential infrastructure is located in Flood Zone Sb Development will not be permitted in the following scenarios:			
Recommend-	Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and			
ations for	ations for FZ3b.			
Information vulnerable and Less Vulnerable development within F23b.				
policy	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers			
	Flood risk assessment:			
	 At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding, particularly surface water risk) and surface water drainage strategy will be required 			
	 Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage 			
	 Groundwater flood risk in the northeast of the site should be investigated. 			
	 Detailed m 	odelling will be required to confirm Flood Zone and climate change extents. The		

JBA consulting



Site code	RTC5	
Site name	Former Longmead Centre	
Environme informatior whether ex	nt Agency and LLFA should be consulted to obtain the latest hydraulic modelling for the site at the time of the flood risk assessment. They will advise as to tisting detailed models need to be updated.	
 Climate change modelling should be undertaken using the relevant allowances (Fel 2016) for the type of development and level of risk. The EA have advised that they would expect to see no encroachment for develo within flood zone 3 inclusive of climate change to ensure an adequate buffer is maintain the second se		
Guidance for s Developme Safe access and conside 	site design and making development safe: ent must seek opportunities to reduce overall level of flood risk at the site. ss and egress should be demonstrated in the 1 in 100 plus climate change event lering surface water risk.	
 Compensa plus appro Onsite atter peak flows All develop flooding du (CIRIA Ma benefits ind 	tion storage would need to be provided for any land-raising within the 1 in 100 priate climate change flood extent enuation options would need to be tested to ensure that altering the timing of leaving the site does not exacerbate flooding downstream. pment should adopt source control SuDS techniques to reduce the risk of le to post-development runoff. SuDS design should follow current best practice nual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple cluding water quality, biodiversity, amenity, green infrastructure etc.	
Level 2 SFRA Detailed Site Summary Tables

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Site code	RTC4
Site name	Colebrook, Noke Drive, Redhill

	Defences	Defence Type	Standard of Protectio	n Co	ondition
		The site does not receive protection from flood defences.			
Flood risk	Culvert / structure blockage?	Jockage?Redhill Brook enters a culvert 130 m to the east. This presents a risk from blocking.			
management infrastructure Impounded water body failure? The site flooding f		The site is within the flooding from reservoirs	is within the maximum extent of rom reservoirs.		
		Defense breach /	Breach	Zone	
		overtopping?	The site is not at i defences.	risk from	breach of
Emergency	Flood warning	The site lies within the "Redhill" Brook Flood Alert area and the "Redhill Brook at Redhill" Flood Warning area. Environment Agency flood warnings are now issued to individuals via the Flood			
planning	Access and egress Access is from Noke Drive to the south and St Anne's Drive to the Anne's Drive has some minor surface water flooding in a 1 in 1000 but would provide a suitable access and egress route. Noke Drive deadend to the east, may experience more widespread flooding in year fluvial event and therefore would provide restricted access to the				e north. St year event, , which is a a 1 in 100- ne site.
	Climate change allowances for	River Basin District	Central	Higher Central	Upper End
Climate	'2080s'	Thames	25%	35%	70%
Change	Implications for the site	The changes to flows within the climate change are predicted to year event in the south of the sit	Redhill Brook adjacent to lead to an increase the ex e of 10 to 25%.	the site as tent of the	a result of 1 in 100

Level 2 SFRA Detailed Site Summary Tables



	Bedrock Geology	Lower Greensand Group – Sandstone and mudstone			
	Superficial Geology	No superficial deposits are known to exist on the site.			
	Soils	Freely draining slightly acid loamy soils cover the site.			
		The freely draining nature of the soils, and local geology may allow the impementation of an infiltration SuDS scheme. However the groundwater levels in the northern part of the site may restrict this.			
Requirement for drainage control and	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.			
mitigation		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.			
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.			
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.			
	Opportunities for flood risk betterment	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream.			
	Sequential Test and Exception Test requirements				
	The Sequential Test is passed should the sequentially locate If More V If Highly	t must be passed (see Section 4 of main report). Only once the Sequential Test e Exception Test be applied. It is expected that all built development will be d within Flood Zone 1, but the Exception Test would be required: /ulnerable and Essential Infrastructure is located in FZ3a. Vulnerable development is located in FZ2 or Flood Zone 3a plus climate			
	change.				
	If Essent	tial Infrastructure is located in Flood Zone 3b			
Decommond	Highly V	ulnerable development within FZ3a or Flood Zone 3a plus climate change and			
ations for	FZ3b.				
Local Plan	More Vulnerable and Less Vulnerable development within FZ3b. Recommendations for requirements of site-specific Flood Risk Assessment, inclu guidance for developers				
policy					
	Flood risk ass	essment:			
	 At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required 				
	 Consultation with the Local Authority and the Environment Agency should be undertaken at 				
	 an early stage Groundwater flood risk in the northeast of the site should be investigated 				
	 Detailed modelling will be required to confirm Flood Zone and climate change extents. The 				
	Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling				

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Site code RTC4	
Site name	Colebrook, Noke Drive, Redhill
information whether exis Climate cha 2016) for the The EA har within flood Guidance for si Development The develop and 3a + up preserved a Safe access Compensati plus approp Onsite atter peak flows I All develop flooding due (CIRIA Man	Colebrook, Noke Drive, Redmin for the site at the time of the flood risk assessment. They will advise as to isting detailed models need to be updated. ange modelling should be undertaken using the relevant allowances (February ie type of development and level of risk. ve advised that they would expect to see no encroachment for development zone 3 inclusive of climate change to ensure an adequate buffer is maintained. ite design and making development safe: nt must seek opportunities to reduce overall level of flood risk at the site. pment should be designed using a sequential approach. Flood Zones 2 and 3, oper end climate change (subject to a detailed flood risk assessment) should be as public green space, with built development restricted to Flood Zone 1. s and egress should be demonstrated in the 1 in 100 plus climate change event. tion storage would need to be provided for any land-raising within the 1 in 100 priate climate change flood extent nuation options would need to be tested to ensure that altering the timing of leaving the site does not exacerbate flooding downstream. oment should adopt source control SuDS techniques to reduce the risk of e to post-development runoff. SuDS design should follow current best practice nual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple



Site Category	Urban Development sites
Site code	RED4
Site name	Church of the Epiphany, Mansfield Drive, Merstham

Site details	OS Grid reference	529775 153082			
	Area	0.33Ha			
	Current land use	Brownfield			
	Proposed site use	Urban Development Site			
	Flood risk vulnerability	More vulnerable			
	Existing watercourses	None present on the site. A culverted drain classified as an ordinary watercourse is present 200 north east of the site.			ordinary
	Flood history	No recorded flood his	story.		
		Pro	oportion of	site at risk in Flood Zones	5
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	0%	100%
	Fluvial	Available modelled data:			
		Not covered by any modelled extents. Flood characteristics:			
		Flood characteristic	s:		
		Flood characteristic	s: Flood Zones	s.	
		Flood characteristic	s: flood Zones Proportior	s. n of site at risk (RoFSW)	
Sources of		Flood characteristic Not covered by any F 30-year	s: flood Zones Proportior	s. n of site at risk (RoFSW) 100-year	1,000-year
Sources of flood risk		Flood characteristic Not covered by any F 30-year 4%	s: lood Zones Proportior	s. n of site at risk (RoFSW) 100-year 25%	1,000-year 55%
Sources of flood risk	Surface Water	Flood characteristic Not covered by any F 30-year 4% Description of surfa A surface water flow This is likely to be puthe Huddleston Creso the existing building (Elood Zones Proportion Ace water fl path exists resent in a cent and Ma (although th	of site at risk (RoFSW) 100-year 25% ow paths: across the site from north e 1 in 30-year event, with por ansfield Drive each side of th is is likely to change post de	1,000-year 55% east to south west. nding occurring on te site, and around velopment).
Sources of flood risk	Surface Water Groundwater	Flood characteristic Not covered by any F 30-year 4% Description of surfa A surface water flow This is likely to be puthe Huddleston Cresc the existing building (Areas Susceptible to groundwater emerg	resert and Ma calthough th o Groundw ence)	or site at risk (RoFSW) 100-year 25% ow paths: across the site from north e 1 in 30-year event, with por ansfield Drive each side of th is is likely to change post de vater Flooding Map class (r	1,000-year 55% east to south west. nding occurring on he site, and around velopment).
Sources of flood risk	Surface Water Groundwater	Flood characteristic Not covered by any F 30-year 4% Description of surfa A surface water flow This is likely to be puthe Huddleston Cress the Huddleston Cress the existing building (Areas Susceptible to groundwater emerg Negligible risk from g	Elood Zones Proportion Proportion Ace water fl path exists resent in a cent and Ma calthough th o Groundw ence) roundwater	or site at risk (RoFSW) 100-year 25% ow paths: across the site from north e 1 in 30-year event, with por ansfield Drive each side of th is is likely to change post de vater Flooding Map class (r flooding.	1,000-year 55% east to south west. nding occurring on he site, and around velopment).
Sources of flood risk	Surface Water Groundwater Reservoir	Flood characteristic Not covered by any F 30-year 4% Description of surfa A surface water flow This is likely to be pr the Huddleston Cresc the existing building (Areas Susceptible to groundwater emerg Negligible risk from g Site is not at risk from	Elood Zones Proportion Proportion Acce water fl path exists resent in a cent and Ma calthough th o Groundwater n reservoir f	or site at risk (RoFSW) 100-year 25% ow paths: across the site from north e 1 in 30-year event, with por ansfield Drive each side of th is is likely to change post de vater Flooding Map class (r flooding. looding.	1,000-year 55% east to south west. nding occurring on ne site, and around velopment).



Site Category	Urban Development sites
Site code	RED4
Site name	Church of the Epiphany, Mansfield Drive, Merstham

	Defences	Defence Type	Standard of Protection	n Co	ondition
		The site does not receive protection from flood defences.			
Flood risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.			
management infrastructure	Residual risk	Impounded water body failure?	The site is not at risk of inundation in the event of reservoir failure.		
		Defence breach /	Breach	Zone	
		overtopping?	The site is not at r defences.	isk from	breach of
	Flood warning	The site is not covered by any flood warning or alert areas.			
Emergency planning	Access and egress	Access to the site is from Mansfield Road to the south. Surface water flooding is likely to occur on this road in a 1 in 30-year event immediately adjacent to the site.			ter flooding adjacent to
	Climate change allowances for	River Basin District	Central	Higher Central	Upper End
Climate	'2080s'	Thames	25%	35%	70%
Change Implications for the site		Climate change is unlikely to sig	nificantly change the Floo	d Zone cla	assification.



Site Category	Urban Development sites
Site code	RED4
Site name	Church of the Epiphany, Mansfield Drive, Merstham

	Bedrock Geology	Gault Formations and Upper Greensand Formation (Undifferentiated) – Mudstone, sandstone and limestone.		
	Superficial Geology	No superficial deposits are known to exist on the site.		
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage.		
		The low permeability of this site suggests that infiltration systems may not be appropriate. The slope of the site may allow opportunities for SuDS which drain by gravity.		
Requirement for drainage control and	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.		
mitigation		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.		
	Groundwater Source Protection Zone	No source protection zones exist close to the site.		
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.		
	Opportunities for flood risk bettermentOpportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction in surface water flooding south of th site.			
_	Sequential Test and Exception Test requirements			
	The site is within Flood Zone 1 but at risk from surface water flooding, which should be taken in account when carrying out the Sequential Test and Exception test if required.			
	Recommendations guidance for devel	for requirements of site-specific Flood Risk Assessment, including opers		
Recommend- ations for Local Plan policy Impa Guidance • Deve		essment: nning application stage, a site-specific flood risk assessment (considering all flooding) and surface water drainage strategy will be required. on with the Local Authority and the Environment Agency should be undertaken at age the development on flood risk to the wider catchment should be assessed. site design and making development safe: ent must seek opportunities to reduce overall level of flood risk at the site.		
	 The surface water drainage strategy should ensure that the development does not increase flood risk elsewhere. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. All development should adopt source control SuDS techniques to reduce the risk of 			
	flooding du	e to post-development runoff. SuDS design should follow current best practice		



Site Category	Urban Development sites
Site code	RED4
Site name	Church of the Epiphany, Mansfield Drive, Merstham

(CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple
benefits including water quality, biodiversity, amenity, green infrastructure etc.
Drainage designs should 'design for exceedance' and accommodate existing surface water
flow routes, with development located outside of existing flood risk areas.



Site code	RED5
Site name	Merstham Library, Weldon Way, Merstham

Site details	OS Grid reference	529463 152752		
	Area	0.26Ha		
	Current land use	Brownfield		
	Proposed site use	Urban Development Site		
	Flood risk vulnerability	More vulnerable		
Existing watercourses No watercourses exist on the site. A tributary along the western side of the Merstham Recre m south of the site.		e. A tributary of the Redhill B erstham Recreation Ground a	rook is located approximately 150	
	Flood history	Flooding from Redhill Brook occ and 1968.	urred 30-40m to the east of th	he site in 1947
		Proportion o	f site at risk in Flood Zones	
		FZ3b FZ3a	FZ2	FZ1
		0% 24%	36%	64%
	Fluvial	Covered by the Redhill Brook and Salfords Stream model (Environment Agency, 2014). Flood characteristics: The south west side of the site lies within Flood Zone 3.		
Sources of		Proportio	n of site at risk (RoFSW)	
Sources of		Proportio 30-year	n of site at risk (RoFSW) 100-year	1,000-year
Sources of flood risk		Proportio 30-year 0%	n of site at risk (RoFSW) 100-year 0%	1,000-year 0%
Sources of flood risk	Surface Water	Proportio 30-year 0% Description of surface water flow surface water flooding may occu the site from the east in a 1 in 10 A Surface Water flow path is associated with the Fluvial Flood	n of site at risk (RoFSW) 100-year 0% low paths: d risk exists on the site. Ho ir along Weldon Way, which p 00-year event. also present to the west of d Zones in this area.	1,000-year 0% owever, significant provides access to the site, which is
Sources of flood risk	Surface Water Groundwater	Proportio 30-year 0% Description of surface water flow surface water flooding may occu the site from the east in a 1 in 10 A Surface Water flow path is associated with the Fluvial Flood Areas Susceptible to Groundw groundwater emergence)	n of site at risk (RoFSW) 100-year 0% low paths: d risk exists on the site. Ho irr along Weldon Way, which p 00-year event. also present to the west of d Zones in this area. vater Flooding Map class (r	1,000-year 0% owever, significant provides access to the site, which is isk of
Sources of flood risk	Surface Water Groundwater	Proportio 30-year 0% Description of surface water f No modelled surface water flood surface water flooding may occu the site from the east in a 1 in 10 A Surface Water flow path is associated with the Fluvial Flood Areas Susceptible to Groundw groundwater emergence) Negligible risk of groundwater flo	n of site at risk (RoFSW) 100-year 0% low paths: d risk exists on the site. Ho ir along Weldon Way, which p 00-year event. also present to the west of d Zones in this area. vater Flooding Map class (r	1,000-year 0% owever, significant provides access to the site, which is isk of
Sources of flood risk	Surface Water Groundwater Reservoir	Proportio 30-year 0% Description of surface water f No modelled surface water flooding may occur the site from the east in a 1 in 10 A Surface Water flow path is associated with the Fluvial Flood Areas Susceptible to Groundw groundwater emergence) Negligible risk of groundwater flood Site is not at risk of reservoir flood	n of site at risk (RoFSW) 100-year 0% low paths: d risk exists on the site. Ho ir along Weldon Way, which p 00-year event. also present to the west of d Zones in this area. vater Flooding Map class (r poding.	1,000-year 0% owever, significant provides access to the site, which is isk of



Site code	RED5
Site name	Merstham Library, Weldon Way, Merstham

	Defences	Defence Type	Standard of Protection	on Co	ondition
Flood risk management infrastructure Residual	201011000	The site does not receive protection from flood defences.			
	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.		
		Impounded water body failure?	The site is not at risk of inundation in the event of reservoir failure.		tion in the
		Defense breach /	Breach	Zone	
		overtopping?	The site is not at defences.	risk from	breach of
Flood warnir	Flood warning	Site is covered by the Redhill Brook Flood Alert area.			
Emergency planning	Access and egress	Access to the site is from Weldon Way to the west. This may experience limited surface water flooding in a 1 in 100-year event, but no flood inciden have been reported. Further from the site surface water flow paths from the north and north ea may impead access to the site along Bletchingley Road, which is main route and out of the area.			experience d incidents north east ain route in
Climate Climate Change Implic the si	Climate change	River Basin District	Central	Higher Central	Upper End
	'2080s'	Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to sig at the site due to the confined na	nificantly change the Floo ature of the Flood Zone a	od Zone cla t this location	issification on.





	Bedrock Geology	Gault Formation and Upper Greensand Formation (Undifferentiated) – Mudstone, Sandstone and Limestone			
	Superficial Geology	No superficial deposits are known to exist on the site.			
Requirement for drainage control and	Soils	Freely draining slightly acid loamy soils that are freely draining.			
		The freely drainging soils and underlying geology provide the option of an infiltration SuDS scheme.			
	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.			
impact mitigation		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.			
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.			
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.			
	Opportunities for flood risk betterment	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of surface water flow paths leaving the site.			
	Sequential Test an	d Exception Test requirements			
	 The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required: If More Vulnerable and Essential Infrastructure is located in FZ3a. If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate 				
	change.				
	 If Essent Development will no 	tial Infrastructure is located in Flood Zone 3b			
	Highly V	ulnerable development within FZ3a or Flood Zone 3a plus climate change and			
Recommend- FZ3b.		Inerable and Less Vulnerable development within EZ3b			
Local Plan	Recommendations	for requirements of site-specific Flood Risk Assessment, including			
policy	guidance for developers				
	Flood risk ass	essment:			
	 At the plan sources of 	flooding) and surface water drainage strategy will be required.			
	Consultation with the Local Authority and the Environment Agency should be undertaken at				
	 an early state Groundwate 	age er flood risk in the north of the site should be investigated.			
	Detailed m	odelling will be required to confirm Flood Zone and climate change extents. The			
	Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to				
	whether ex	isting detailed models need to be updated.			



Site code	RED5
Site name	Merstham Library, Weldon Way, Merstham

Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk.
Guidance for site design and making development safe:
 Development must seek opportunities to reduce overall level of flood risk at the site.
• The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1.
• Safe access and egress should be demonstrated in the 1 in 100 plus climate change event.
 Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent
 Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream.
 All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water guality, biodiversity, amenity, green infrastructure etc.



Site code	RED8
Site name	Land at Reading Arch Road/Brighton Road, Redhill

Site details	OS Grid reference	527965 150240			
	Area	1.94Ha			
	Current land use	Brownfield			
	Proposed site use	Urban Developme	nt Site		
	Flood risk vulnerability	More vulnerable			
	Existing watercourses	Redhill Brook flow	s north to sout	h across the site within a cul	vert.
	Flood history	No recorded flood recorded extents a	ing from fluvial are present nor	sources are recorded on the rth and south of the site (194	e site, however 7 and 1968).
			Proportion of	site at risk in Flood Zones	
		FZ3b	FZ3a	FZ2	FZ1
		21%	53%	69%	31%
	Fluvial	Covered by the 2014). Flood characteris More than 50% of	Redhill and S stics: the site lies wi	Salford Stream model (Env thin Flood Zone 3 from Redh	ironment Agency, nill Brook.
		Proportion of site at risk (RoFSW)			
Sources of		30-уеа	ar	100-year	1,000-year
flood risk		11%		19%	41%
	Surface Water	Description of surface water flow paths: A surface water flow path may be present in the northern half of the site following the existing road / carpark. This may change post development, but there is potential for significant flows / ponding in a 1 in 30-year event.			
	Groundwater	Areas Susceptibl groundwater eme	e to Groundw ergence)	/ater Flooding Map class (r	isk of
		The site is in an area of significant risk of groundwater flooding (groundwater at or just below the surface).			
	Reservoir	The site is within t	he maximum e	extent of flooding from reserv	oir failure.
Canal		The site is not loca	ated within 100	om of a canal.	





Site code	RED8
Site name	Land at Reading Arch Road/Brighton Road, Redhill

	Defences	Defence Type	Standard of Protection	Co	ondition
Flood risk management infrastructure Residual risk	The site does not receive protection from flood defences.				
	Residual risk	Culvert / structure blockage?	Understand There are no structures on the site (identified at this stage) with the potential to block.		
		Impounded water body failure?	The site is within the maximum extent of flooding from reservoir failure.		extent of
		Defence breach /	Breach 2	one	
		overtopping?	The site is not at ris defences.	sk from	breach of
Flood warning	The site is covered by the Redhill Brook Flood Alert area and the "Redhill Brook at Redhill" Flood Warning area. Environment Agency flood warnings are now issued to individuals via the Flood				
planning Access and egress		Access to the site is from Brighton Road (A25). This is likey to experience surface water flooding in a 1 in 1000-year event at the site entrance and a 1 in 30-year event south of the site.			
Climate Change	Climate change	River Basin District	Central (Higher Central	Upper End
	'2080s'	Thames	25%	35%	70%
	Implications for the site	Climate change under a +70% s in 100 year event to greater thar	cenario is likely to increase the current Flood Zone 2	e the exte extent.	nt of the 1





Site code	RED8
Site name	Land at Reading Arch Road/Brighton Road, Redhill

	Bedrock Geology	Lower Greensand Group – Sandstone and Mudstone.			
Requirement	Superficial Geology	No superficial deposits are known to exist on the site.			
	Soils	Freely draining slightly acid loamy soils.			
		The freely draining nature of the site suggests that an infiltration SuDS scheme could be appropriate. However consideration should be paid to the potential risk of high groundwater levels when designing the drainage systems			
	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.			
control and impact		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.			
mitigation	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.			
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.			
	Opportunities for	The condition and capacity of the culvert crossing the site should be investigated to determine if culvert enlargement is required or whether an opportunity exists for daylighting.			
	betterment	Opportunity to implement an exemplar SuDS design following CIRIA and SCC guidance on runoff rates and volumes, contributing to the reduction of flood peaks downstream.			
	Sequential Test an	d Exception Test requirements			
	The Sequential Test is passed should the sequentially locate	t must be passed (see Section 4 of main report). Only once the Sequential Test e Exception Test be applied. It is expected that all built development will be d within Flood Zone 1, but the Exception Test would be required:			
	 If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. 				
Recommend-	If Essential Infrastructure is located in Flood Zone 3b Pevelopment will not be permitted in the following acception:				
ations for Local Plan	 Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. 				
policy	More Vulnerable and Less Vulnerable development within FZ3b.				
	Recommendations for requirements of site-specific Flood Risk Assessment, including				
	guidance for devel	opers			
	Flood risk ass	essment:			
	 At the plan sources of Consultation 	flooding) and surface water drainage strategy will be required. on with the Local Authority and the Environment Agency should be undertaken at			
	an early sta	age.			



Site code	RED8
Site name	Land at Reading Arch Road/Brighton Road, Redhill

 Detailed modelling will be required to confirm Flood Zone and climate change extents. Th Environment Agency and LLFA should be consulted to obtain the latest hydraulic modellin information for the site at the time of the flood risk assessment. They will advise as t whether existing detailed models need to be updated. Climate change modelling should be undertaken using the relevant allowances (Februar 2016) for the type of development and level of risk. Guidance for site design and making development safe: Development must seek opportunities to reduce overall level of flood risk at the site. The development should be designed using a sequential approach. Flood Zones 2 and 3 and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. Safe access and egress should need to be provided for any land-raising within the 1 in 10 plus appropriate climate change flood extent Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practic (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multipl benefits including water quality, biodiversity, amenity, green infrastructure etc. 	
 Guidance for site design and making development safe: Development must seek opportunities to reduce overall level of flood risk at the site. The development should be designed using a sequential approach. Flood Zones 2 and 3 and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event Compensation storage would need to be provided for any land-raising within the 1 in 10 plus appropriate climate change flood extent Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practic (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multipl benefits including water quality, biodiversity, amenity, green infrastructure etc. 	 Detailed modelling will be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated. Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk.
 Development must seek opportunities to reduce overall level of flood risk at the site. The development should be designed using a sequential approach. Flood Zones 2 and 3 and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event Compensation storage would need to be provided for any land-raising within the 1 in 10 plus appropriate climate change flood extent Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practic (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multipl benefits including water quality, biodiversity, amenity, green infrastructure etc. 	Guidance for site design and making development safe:
	 Development must seek opportunities to reduce overall level of flood risk at the site. The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.



Site code	RED2
Site name	Bellway House, Station Road, Merstham

	OS Grid reference	529107 153453			
	Area	0.2Ha			
	Current land use	Brownfield			
	Proposed site use	Urban Developme	nt Site		
	Flood risk vulnerability	More vulnerable			
	Existing watercourses	No watercourses e 200m south east c	exist on the site	e. A culverted ordinary water	course is present
	Flood history	There are no record 150m from the site	rded flood eve e (the other sid	nts on the site. Flooding occu e of the railway line).	urred in 1968
			Proportion of	site at risk in Flood Zones	5
		FZ3b	FZ3a	FZ2	FZ1
	Eluvial	0%	0%	0%	100%
	Fluviai	Available modelled data:			
		Flood characteristics:			
		The site is comple	toly within Eloy	ad Zono 1	
		The site is comple	tely within Floo	od Zone 1.	
		The site is comple	tely within Floo Proportior	od Zone 1. n of site at risk (RoFSW)	
		The site is comple	rely within Floo Proportion	od Zone 1. n of site at risk (RoFSW) 100-year	1,000-year
Sources of		The site is comple	Proportion	od Zone 1. n of site at risk (RoFSW) 100-year 0%	1,000-year 0.6%
Sources of flood risk	Surface Water	The site is comple 30-yea 0% Description of su The north-eastern in 1000-year ever north of the site	rface water fl part of the site	od Zone 1. n of site at risk (RoFSW) 100-year 0% ow paths: the has a very small area at risk om flows off the M25, which	1,000-year 0.6% k of ponding in a 1 n is located to the
Sources of flood risk	Surface Water	The site is comple 30-yea 0% Description of su The north-eastern in 1000-year ever north of the site Areas Susceptibl groundwater eme	rface water fl part of the site tresulting fro	od Zone 1. o of site at risk (RoFSW) 100-year 0% ow paths: e has a very small area at risk om flows off the M25, which vater Flooding Map class (r	1,000-year 0.6% k of ponding in a 1 n is located to the
Sources of flood risk	Surface Water Groundwater	The site is comple 30-yea 0% Description of su The north-eastern in 1000-year ever north of the site Areas Susceptibl groundwater eme Negligible risk of g	rface water fl part of the site to Groundwater flor e to Groundwater flor	od Zone 1. of site at risk (RoFSW) 100-year 0% ow paths: a has a very small area at risi m flows off the M25, which vater Flooding Map class (r	1,000-year 0.6% k of ponding in a 1 n is located to the
Sources of flood risk	Surface Water Groundwater Reservoir	The site is completed and a solution of supervision of supervision of supervision of the site and a solution of the	rface water fl part of the site tresulting from the solution of the site to Groundwater flow the solution of the site the solution of the sol	od Zone 1. of site at risk (RoFSW) 100-year 0% ow paths: a has a very small area at risi m flows off the M25, which vater Flooding Map class (r boding. voir flooding.	1,000-year 0.6% k of ponding in a 1 n is located to the



Site code	RED2
Site name	Bellway House, Station Road, Merstham

Flood risk management infrastructure	Defences	Defence Type	Standard of Protect	tion Co	ondition
		The site does not receive protection from flood defences.			
	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.		
		Impounded water body failure?	The site is not at risk of inundation in the event of reservoir failure.		
		Defence breach /	Bread	ch Zone	
		overtopping?	The site is not at defences.	risk from	breach of
		The site is within the Redhill Bro	ok Flood Alert area.		
Emergency planning	Flood warning	Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	Access to the site is from Station Road North to the south. There is minimal risk of surface water flooding on this road and it lies outside of the area at risk of fluvial flooding.			
Climate Change	Climate change allowances for	River Basin District	Central	Higher Central	Upper End
	'2080s'	Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to sig of this site.	nificantly change the Fl	ood Zone cla	assification



Site code	RED2
Site name	Bellway House, Station Road, Merstham

	Bedrock Geology	Gault Formation and Upper Greensand Formation (undifferentiated) – Mudstone, Sandstone and Limestone			
Requirement for drainage control and impact	Superficial Geology	No superficial deposits are known to exist on the site.			
	Soils	Slightly acid loamy and clayey soils with impeded drainage			
	SuDS	The nature of the soils on this site may limit the use of Infiltration SuDS.			
mitigation	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.			
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.			
	Opportunities for flood risk betterment	No significant opportunities for flood risk betterment are present at this site.			
	Sequential Test an	d Exception Test requirements			
	The site is within Flood Zone 1 but at some risk from surface water flooding, which should be taken into account when carrying out the Sequential Test and Exception test if required.				
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers				
	Flood risk assessment:				
	 At the plat sources of 	 At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. 			
Recommend-	Consultation	n with the Local Authority and the Environment Agency should be undertaken at			
Local Plan	 Impacts of 	age the development on flood risk to the wider catchment should be assessed.			
policy	Guidance for site design and making development safe:				
	 Development must seek opportunities to reduce overall level of flood risk at the site. The surface water drainage strategy should ensure that the development does not increase. 				
	 The surface water trainage strategy should ensure that the development does not increase flood risk elsewhere. 				
	• Safe access and egress should be demonstrated in the 1 in 100 plus climate change event.				
	 All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc. 				
	flow routes	, with development located outside of existing flood risk areas.			



Site code	RED1
Site name	Quarryside Business Park, Thornton Side, Redhill

Site details	OS Grid reference	528959 152056				
	Area	1.2Ha				
	Current land use	Brownfield	Brownfield			
	Proposed site use	Urban Developme	Urban Development Site			
	Flood risk vulnerability	More vulnerable				
	Existing watercourses	A culverted main r south-west corner the south east. Th Brook.	iver flows alon of the site into e main river co	g the western site boundary. an ordinary watercourse that ontinues south where it event	This splits in the at flows towards cually joins Redhill	
	Flood history	No recorded flood	history.			
			Proportion of	site at risk in Flood Zones		
		FZ3b	FZ3a	FZ2	FZ1	
		0%	0%	0%	100%	
	Fluvial	Available modelled data: No modelled extents cover this site.				
		Flood characteristics:				
		Site is completely within Flood Zone 1, however, significant ponding is modelled immediately to the west of the site on the opposite side of the railway that forms the western boundary of the site				
Sources of flood risk		Proportion of site at risk (RoFSW)				
noou nak		30-yea	ır	100-year	1,000-year	
		8%		14%	20%	
	Surface Water	Description of surface water flow paths: A significant surface water flow path associated with flows under the and from the north runs across the northern part of the site during a year event. Some ponding may occur along the western side and the west corner during a 1 in 100-year event.				
		Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Groundwater	The site lies within an area at risk of groundwater flooding with water at or just below the surface.				
		The site is within the maximum extent of reservoir flooding.				
	Reservoir	The site is within the	he maximum e	extent of reservoir flooding.		



Site code	RED1
Site name	Quarryside Business Park, Thornton Side, Redhill

	Defences	Defence Type	Standar	d of Protecti	ion Co	ondition	
	201011000	The site does not receive protection from flood defences.					
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	It is understood that a culverted watercourse runs along the western boundary of the site adjacent to the railway line. The culvert begins to the west of the railway and flooding as a result of a blockage of the culvert is not expected to directly impact the site			vatercourse of the site The culvert and flooding ulvert is not	
		Impounded water body failure?	The site reservoir	is within th flooding.	e maximun	n extent of	
		Defence breach /		Breac	h Zone		
		overtopping?	The site is not at risk from breach of defences.				
	Flood warning	The site is not covered by a Flood alert or Flood Warning area.					
Emergency planning	Access and egress	Access is via a Thorntonside which may experience some minor ponding fra surface water near the site entrance in a 1 in 100-year event. Access possible to the east but this road experiences significant ponding in a 1 in 3 year event.				Access is a 1 in 30-	
Climate Change	Climate change allowances for	River Basin District		Central	Higher Central	Upper End	
	'2080s'	Thames 25% 35% 70%				70%	
	Implications for the site	Climate change is unlikely to sig of this site.	nange the Flo	ood Zone cla	assification		





	Bedrock Geology	Lower Greensand Group – Sandstone and Mudstone			
Requirement for drainage control and	Superficial Geology	No superficial deposits are known to exist on the site.			
	Soils	Freely draining slightly acid loamy soils.			
		The freely draining soils and sandstone geology provide opportunities for an infiltration SuDS scheme. However the existing historic landfill site may limit this.			
	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.			
impact mitigation		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.			
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.			
	Historic Landfill Site	The eastern part of the site lies within a site designated by the EA as a histori landfill site. (Holmethorpe Trading Estate – Last input 1989).			
	Opportunities for flood risk betterment	Opportunities to de-culvert the watercourse on the west of the site with possibilities to incorporate into a SuDS scheme.			
	Sequential Test and Exception Test requirements				
	The site is within Flood Zone 1 but at risk from surface water flooding, which should be taken into account when carrying out the Sequential Test and Exception test if required.				
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers				
Recommend- ations for Local Plan policy	 Flood risk assessment: At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage Impacts of the development on flood risk to the wider catchment should assessed. 				
	Guidance for site design and making development safe:				
	 Developme 	ent must seek opportunities to reduce overall level of flood risk at the site.			
	 The surfact flood risk e 	e water drainage strategy should ensure that the development does not increase lsewhere.			
	 Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice 				





Site code	RED1
Site name	Quarryside Business Park, Thornton Side, Redhill

(CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple
benefits including water quality, biodiversity, amenity, green infrastructure etc.
Drainage designs should 'design for exceedance' and accommodate existing surface water
flow routes, with development located outside of existing flood risk areas.



Site code	RED9
Site name	East Surrey Hospital

	reference	Grid prence528405 148250a15.5Harrent land useBrownfieldposed siteHospitalMore vulnerableMore vulnerable				
	Area					
	Current land use					
	Proposed site use					
	Flood risk vulnerability					
	Existing watercourses	An un-named ordinary watercourses flow along the northern west facing edg of the site and is culverted in places, and Earlswood Brook flows along the south-eastern boundary and enters a culvert to the south west.				
	Flood history	No recorded flood h	nistory.			
		Р	Proportion of	site at risk in Flood Zones	5	
		FZ3b	FZ3a	FZ2	FZ1	
		0.1% Available modelle	0.1% d data:	0.1%	99.9%	
	Fluvial	The site is located close to the source of the Earlswood Brook, which is currently not modelled in detail. Flood characteristics: Flood Zone 3 of Earlswood Brook is located at the southerly tip of the site. However this is not expected to impact the potential development of the site.				
		Flood Characterist Flood Zone 3 of E However this is not	ics: arlswood Bro expected to i	ook is located at the southe mpact the potential developr	erly tip of the site. ment of the site.	
Sources of		Flood characterist Flood Zone 3 of E However this is not	ics: arlswood Bro expected to i Proportion	ook is located at the southe mpact the potential developr of site at risk (RoFSW)	erly tip of the site. ment of the site.	
Sources of flood risk		Flood characterist Flood Zone 3 of E However this is not 30-year	ics: arlswood Brc expected to i Proportion	ook is located at the southe mpact the potential developr of site at risk (RoFSW) 100-year	erly tip of the site. ment of the site. 1,000-year	
Sources of flood risk	Surface Water	Flood characterist Flood Zone 3 of E However this is not 30-year 9% Description of sur Significant flow path boundaries of the s a 1 in 1000-year ev southern edge of th to the railway line to The surface water upper reaches of th	ics: arlswood Bro expected to i Proportion face water fl hs and pondir ite in the 1 in yent. A secon the site and sign the west of the flow paths for the Earlswood	ook is located at the souther mpact the potential developm of site at risk (RoFSW) 100-year 15% ow paths: ng are present along the nor 30-year event, with more ex and surface water flow path is gnificant ponding is predicted the site, which may impact ac ollow the ordinary watercou	arly tip of the site. ment of the site. 1,000-year 36% thern and western ttensive ponding in present along the t to occur adjacent ccess to the site. urse that form the ast of the site.	
Sources of flood risk	Surface Water Groundwater	Flood characterist Flood Zone 3 of E However this is not 30-year 9% Description of sur Significant flow path boundaries of the s a 1 in 1000-year ev southern edge of th to the railway line to The surface water upper reaches of th Areas Susceptible groundwater emer	rics: arlswood Bro expected to i Proportion face water flows and pondir ite in the 1 in yent. A second the west of the west of the flow paths for e Earlswood to Groundwe gence)	ook is located at the souther mpact the potential developm of site at risk (RoFSW) 100-year 15% ow paths: ng are present along the nor 30-year event, with more ex and surface water flow path is gnificant ponding is predicted the site, which may impact are ollow the ordinary watercou Brook and originate to the ear vater Flooding Map class (r	thern and western a present along the d to occur adjacent ccess to the site.	
Sources of flood risk	Surface Water Groundwater	Flood characterist Flood Zone 3 of E However this is not 30-year 9% Description of sur Significant flow path boundaries of the s a 1 in 1000-year ev southern edge of th to the railway line to The surface water upper reaches of th Areas Susceptible groundwater emer Negligible risk of gro	ics: arlswood Bro expected to i Proportion face water fl hs and pondir ite in the 1 in yent. A secon the site and sign the west of the flow paths fr e Earlswood to Groundw rgence) oundwater flo	ook is located at the souther mpact the potential developm a of site at risk (RoFSW) 100-year 15% ow paths: ng are present along the nor 30-year event, with more ex and surface water flow path is gnificant ponding is predicted the site, which may impact ac ollow the ordinary watercou Brook and originate to the ea vater Flooding Map class (r	arly tip of the site. ment of the site. 1,000-year 36% thern and western ttensive ponding in present along the to occur adjacent ccess to the site. urse that form the ast of the site.	
Sources of flood risk	Surface Water Groundwater Reservoir	Flood characterist Flood Zone 3 of E However this is not 30-year 9% Description of sur Significant flow path boundaries of the s a 1 in 1000-year ev southern edge of th to the railway line to The surface water upper reaches of th Areas Susceptible groundwater emer Negligible risk of gro	ics: arlswood Bro expected to i Proportion face water flows and pondir ite in the 1 in vent. A secon the site and sign the west of the flow paths free Earlswood to Groundwater flow e within an ar	ook is located at the souther mpact the potential developm of site at risk (RoFSW) 100-year 15% ow paths: ng are present along the nor 30-year event, with more ex and surface water flow path is gnificant ponding is predicted the site, which may impact ac ollow the ordinary watercou Brook and originate to the ear vater Flooding Map class (r	thern and western a reserve to a constrain the site. 1,000-year 36% Thern and western tensive ponding in a present along the d to occur adjacent access to the site. Urse that form the ast of the site. isk of g.	



Site code	RED9
Site name	East Surrey Hospital

	Defences	Defence Type	Standard o	of Protectio	on Co	ndition
		The site does not receive protection from flood defences.				
Flood risk management infrastructure	Residual risk		The culvert along the northern edge and to the south west present a risk of blockage.			
		Culvert / structure blockage?	Blockage of culverts under the railway line to the west of the site may result in significant ponding around the site, which may impact access.			
		Impounded water body failure?	The site doe reservoir floo	The site does not lie within an area at risk of reservoir flooding.		
		Defence breach /		Breach	Zone	
		overtopping?	The site is not at risk from breach of defences.			
	Flood warning	The lies within the "River Mole and its tributaries from Kinnersley Manor to South Hersham" Flood Warning Area.				
Emergency planning	Access and egress	Safe access is possible from Canada Avenue (West of Site). Access may limited from Three Arch Road to the South and Royal Earlswood Road to the north due to surface water flooding in a 1 in 30-year event. Three Arch Road also within within Flood Zone 3b at the southern side of the site.				ss may be load to the ch Road is
Climate Change	Climate change allowances for	River Basin District		Central	Higher Central	Upper End
	'2080s'	Thames		25%	35%	70%
	Implications for the site	Climate change may increase th of the site.	e extent of Flo	ood Zones i	nto the sou	ithern part

Level 2 SFRA Detailed Site Summary Tables



	Bedrock Geology	Wealden Group – Mudstone, Siltstone and Sandstone.			
	Superficial Geology	No superficial deposits are known to exist on the site.			
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage.			
		The impeded drainage may resrict the implementation of an infiltration SuDS scheme.			
Requirement for drainage control and	SuDS	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.			
impact mitigation		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.			
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.			
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.			
	Opportunities for flood risk betterment	Opportunities to de-culvert the watercourse to the south west to reduce risk of blockage. De-culverting the watercourse to the north could provide an opportunity to incorporate into a SuDS scheme.			
	Sequential Test and Exception Test requirements				
	 The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required: If More Vulnerable and Essential Infrastructure is located in FZ3a. If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. If Essential Infrastructure is located in Flood Zone 3b 				
Recommend-	 Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b 				
ations for Local Plan policy	 More Vulnerable and Less Vulnerable development within FZ3b. 				
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers				
	 Flood risk asse At the plan sources of Consultation an early station Groundwatt Detailed m Environme 	essment: nning application stage, a site-specific flood risk assessment (considering all flooding) and surface water drainage strategy will be required. on with the Local Authority and the Environment Agency should be undertaken at age ter flood risk in the northeast of the site should be investigated. odelling will be required to confirm Flood Zone and climate change extents. The nt Agency and LLFA should be consulted to obtain the latest hydraulic modelling			



Site code	RED9
Site name	East Surrey Hospital

information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated.
 Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk.
Guidance for site design and making development safe:
 Development must seek opportunities to reduce overall level of flood risk at the site.
• The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1.
• Safe access and egress should be demonstrated in the 1 in 100 plus climate change event.
 Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent
 Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream.
 All development should adopt source control SuDS techniques to reduce the risk of
flooding due to post-development runoff. SuDS design should follow current best practice
(CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple
benefits including water quality, biodiversity, amenity, green infrastructure etc.

Site Category		Traveller Sites				
Site code		Old Rectory 1				
Site name		The Old Rectory				
		r				
Site details	OS Grid reference	527926, 159550				
	Area	0.24 Ha				
	Current land use	Brownfield				
	Proposed site use	Traveller site				
	NPPF Flood risk vulnerability	Highly Vulnerable				
	Existing watercourses	No watercourses exist within or close to the site boundary.				
	Flood history	The EA Historic Flood Map does not show any recorded incidents of floo on the site.				
Proportion of site at risk in Flood Z						
		FZ3b	FZ3a	FZ2	FZ1	
		0%	0%	0%	100%	
		Flood characteris	ed data: The s	is contained completely with	in Flood zone 1.	
			Proportion	of site at risk (RoFSW)	Γ	
		30-yea	ar	100-year	1,000-year	
Sources of		0%		0%	23%	
flood risk	Surface Water	ow paths: run north to south across th lowever this may alter w	paths: n north to south across the site during the 1 vever this may alter with the proposed			
		Areas Susceptibl	e to Groundw ergence)	ater Flooding Map class (r	isk of	
	Groundwater	Groundwater levels across most of the site are typically greater than 5m below the surface. On the south-east corner of the site, groundwater levels may be between 0.5m and 5m below the surface.				
	Reservoir	The site is not at r	isk of flooding f	rom reservoir failure.		
		The site is not at risk of flooding from reservoir failure.				





Site Category	Traveller Sites
Site code	Old Rectory 1
Site name	The Old Rectory

	Defences	Defence Type	Standard of Protectio	on Co	ondition	
	Derenteed	The site does not receive protec	tion from flood defences.			
Flood risk		Culvert / structure blockage?	ulvert / structure ockage? There are no structures on the site (identified at this stage) with the potential to block.			
management infrastructure	Residual risk	Impounded water body failure?	The site is not at ri reservoir failure.	isk of floo	oding from	
		Defence breach /	Breach	Zone		
		overtopping?	The site is not at i defences.	risk from	breach of	
		The site lies outside of any Flood	d Warning or Flood Alert	areas.		
Emergency	Flood warning	Environment Agency flood warnings are now issued to individuals via the Flood Information Service.				
planning	Access and egress	Access and egress to this site may be achieved via the B278 which the site to the east. Some surface water flooding may be present on north and south of the site, although the immediate vicinity of the site it unlikely to experience flooding.				
	Climate change	River Basin District	Central	Higher Central	Upper End	
Climate	'2080s'	Thames	25%	35%	70%	
Change	Implications for the site	Climate change is unlikely to sig of this site.	nificantly change the Floo	od Zone cla	ssification	

Level 2 SFRA Detailed Site Summary Tables



	Bedrock Geology	White chalk subgroup.
	Superficial Geology	Deposits of clay with flints cover the whole of the site.
	Soils	The site has shallow lime-rich soils over chalk or limestone that are freely draining.
Requirement	0.00	SuDS should be designed around existing surface water flow paths and areas of ponding. The freely draining nature of the soils present on the site offer opportunites for infiltration SuDS, however the site's location within a groundwater source protection zone needs to be considered during the design process.
for drainage control and impact mitigation	5005	Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.
		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.
	Groundwater Source Protection Zone	The site lies within Zone 1 (Inner Zone).
	Historic Landfill Site	No part of the site is designated by the Environment Agency as historic landfill site.
	Opportunities for flood risk betterment	Opportunity to implement exemplar SuDS design following CIRIA and SCC guidance on runoff rates and volumes, contributing to the reduction of flood peaks downstream.
	Sequential Test an	d Exception Test requirements
	The site is within Fl account when carryi	ood Zone 1 but at risk from surface water flooding, which should be taken into ing out the Sequential Test and Exception test if required
	Recommendations guidance for devel	for requirements of site-specific Flood Risk Assessment, including opers
Recommend- ations for Local Plan policy	 Flood risk asse At the plan sources of Consultation an early station Detailed model Flood Zon Environme site at the detailed model 	essment: nning application stage, a site-specific flood risk assessment (considering all flooding) and surface water drainage strategy will be required. In with the Local Authority and the Environment Agency should be undertaken at age odelling is not expected to be required as the site is a significant distance from the 2 and climate change is unlikely to increase the risk to the site. The nt Agency and LLFA should be consulted to confirm any requirements for the time of the flood risk assessment. They will advise as to whether existing bdels need to be updated.



Site Category	Traveller Sites
Site code	Old Rectory 1
Site name	The Old Rectory
Guidance for s	ite design and making development safe:

٠	Development must seek opportunities to reduce overall level of flood risk at the site.

- Safe access and egress should be demonstrated in the 1 in 100 plus climate change event.
- All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.

Level 2 SFRA Detailed Site Summary Tables

Site code		Trentham			
Site name		Trentham and Treetops			
		1			
Site details	OS Grid reference	530813 142501			
	Area	0.36 Ha			
	Current land use	Brownfield			
	Proposed site use	Traveller site			
	NPPF Flood risk vulnerability	Highly Vulnerable			
	Existing watercourses	 No watercourses exist within the site boundary. An ordinary water course (drain) lies 200m to the south of the site. The EA Historic Flood Map shows that flooding has occurred across the site in 1968 and 1974. Internal property flooding has also been recorded along Peeks Brook Lane. 			
	Flood history				
			Proportion of	site at risk in Flood Zones	
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	89.6%	10.4%
	Fluvial	Available modelled data: The site lies within the area covered by the Burstow Stream Modelling study (Environment Agency 2011).			
		Flood characteristics: The site lies largely within Flood Zone 2.			
			Proportion	of site at risk (RoFSW)	
Sources of		30-yea	nr	100-year	1,000-year
flood risk		1.6%	2.7%	6.3%	
	Surface Water	Description of surface water flow paths:			
		A small percentage of the site may experience flooding from surface water in a 1 in 30-year event, however significant ponding of surface water is modelled along Peeks Brook Lane close to the likely entrance to the site. This may			
		impact access and egress from the site.			
	Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)			
	Groundwater	Negligible risk of fl	ooding from gr	roundwater.	
	Decembra	Negligible risk of flooding from groundwater.			
	Reservoir	I he site is not at r	isk of flooding f	from reservoir failure.	



Site code	Trentham
Site name	Trentham and Treetops

	Defences	Defence Type	Standard	d of Protect	ion Co	ondition
	Derenteed	The site does not receive protection from flood defences.				
Flood risk		Culvert / structure blockage?	Culvert / structure blockage?There are no structures on the site (identified at this stage) with the potential to block.			
management infrastructure	Residual risk	Impounded water body failure?	The site reservoir f	is not at failure.	risk of floo	oding from
		Defence breach /		Breac	h Zone	
		overtopping?	The site defences.	is not at	risk from	breach of
	Flood warning	The site lies in the Burstow Stream at east and North Horley Flood Warning Area and the Ilfield Brook, Upper River Mole, Gatwick Stream, Burstow Stream and Salfords Stream Flood Alert Area.				
Emergency planning		Environment Agency flood warnings are r Information Service.		w issued to i	ndividuals vi	a the Flood
	Access and egress	Access and egress to this site r west of the site. This minor roa along it and may experience sig site.	nay be ach Id has reco gnificant po	ieved via Pe orded incider nding of sur	eeks Brook I nts of prope face water o	ane to the rty flooding lose to the
	Climate change	River Basin District		Central	Higher Central	Upper End
Climate	'2080s'	Thames		25%	35%	70%
Change	Implications for the site	Climate change modelling indicates and increase in the flood extent from the Burstow Stream to the north and south of the site, however, it is unlikely to significantly change the Flood Zone classification of this site.				



Level 2 SFRA Detailed Site Summary Tables

Site code	Trentham
Site name	Trentham and Treetops

	Bedrock Geology	Mudstone, Siltstone and Sandstone.		
	Superficial Geology	River terrace deposits (undifferentiated) exist across the site.		
	Soils	The site has slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.		
		SuDS should be designed around existing surface water flow paths and areas of ponding. Due to the existing flood risk to properties surrounding the site, surface water discharge should be restricted to greenfield runoff rates as a minimum.		
Requirement for drainage	SuDS	The poor draining nature of the soils present on the site offer limited opportunites for infiltration SuDS.		
impact mitigation		Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.		
		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.		
	Groundwater Source Protection Zone	The site does not lie within a source protection zone.		
	Historic Landfill Site	No part of the site is designated by the Environment Agency as historic landfill site; however a historic land fill site is present 200m north of the site.		
	Opportunities for flood risk betterment	Opportunity to implement exemplar SuDS design following CIRIA and SCC guidance on runoff rates and volumes, contributing to the reduction of flood peaks downstream.		
	Sequential Test an	d Exception Test requirements		
	The Sequential Test is passed should th will be sequentially If More	t must be passed (see Section 4 of main report). Only once the Sequential Test e Exception Test be applied. It is recommended that all built development / located within Flood Zone 1, but the Exception Test would be required: /ulnerable and Essential Infrastructure is located in FZ3a.		
	 If Highly 	Vulnerable development is located in FZ2 or Flood Zone 3a plus climate		
	change.	tial Infrastructure is leasted in Flood Zone Ob		
Pecommond-	Development will no	t be permitted in the following scenarios:		
ations for	Highly V	ulnerable development within FZ3a or Flood Zone 3a plus climate change and		
Local Plan policy	FZ3b. • More Vu	FZ3b.More Vulnerable and Less Vulnerable development within FZ3b.		
	Recommendations guidance for devel	for requirements of site-specific Flood Risk Assessment, including opers		
	Flood risk ass	essment:		
	At the plan	nning application stage, a site-specific flood risk assessment (considering all		
	 sources of Consultation an early state 	nooding) and surface water drainage strategy will be required. In with the Local Authority and the Environment Agency should be undertaken at age		

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Site code		Trentham
Site name		Trentham and Treetops
	.	
	 Detailed m Environme information whether ex Climate ch 2016) for th 	odelling may be required to confirm Flood Zone and climate change extents. The nt Agency and LLFA should be consulted to obtain the latest hydraulic modelling of for the site at the time of the flood risk assessment. They will advise as to isting detailed models need to be updated. ange modelling should be undertaken using the relevant allowances (February the type of development and level of risk.
	Guidance for s	site design and making development safe:
	 Developme 	ent must seek opportunities to reduce overall level of flood risk at the site.
	 The develo and 3a + u preserved possible. 	opment should be designed using a sequential approach. Flood Zones 2 and 3, pper end climate change (subject to a detailed flood risk assessment) should be as public green space, with built development restricted to Flood Zone 1 where
	 Safe acces Compensa plus appropriation 	as and egress should be demonstrated in the 1 in 100 plus climate change event. tion storage would need to be provided for any land-raising within the 1 in 100 priate climate change flood extent
	 Onsite atternation peak flows All develop flooding du (CIRIA Main benefits incomparison) 	enuation options would need to be tested to ensure that altering the timing of leaving the site does not exacerbate flooding downstream. oment should adopt source control SuDS techniques to reduce the risk of le to post-development runoff. SuDS design should follow current best practice nual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple cluding water quality, biodiversity, amenity, green infrastructure etc.

Level 2 SFRA Detailed Site Summary Tables

Site code		Woodlea Stables			
Site name		Woodlea Stables Peek Brook Lane			
Site details	OS Grid reference	530691 142469			
	Area	0.31 Ha			
	Current land use	Brownfield			
	Proposed site use	Traveller site			
	NPPF Flood risk vulnerability	Highly Vulnerable			
	Existing watercourses	No watercourses exist within the site boundary. An ordinary water course (drain) lies 150m to the south of the site. The EA Historic Flood Map shows that flooding has occurred on the eastern section of the site in 1968 and 1974. Internal property flooding has also been recorded along Peeks Brook Lane.			
	Flood history				
			Proportion of	site at risk in Flood Zones	3
		FZ3b	FZ3a	FZ2	FZ1
			a a <i>i</i>		
	- 1 · · ·	0% Available modell	0% d data: The s	25.3	74.7%
	Fluvial	0% Available modello Stream Modelling Flood characteris	0% ed data: The s study (Environ stics: The site	25.3 ite lies within the area cover ment Agency 2011). lies partially within Flood Zo	74.7% red by the Burstow ne 2.
	Fluvial	0% Available modello Stream Modelling Flood characteris	0% ed data: The s study (Environ stics: The site Proportion	25.3 ite lies within the area cover ment Agency 2011). lies partially within Flood Zo of site at risk (RoFSW)	74.7% red by the Burstow ne 2.
Sources of	Fluvial	0% Available modelling Stream Modelling Flood characteris 30-yea	0% ed data: The s study (Environ stics: The site Proportion ar	25.3 ite lies within the area cover ment Agency 2011). lies partially within Flood Zo of site at risk (RoFSW) 100-year	74.7% red by the Burstow ne 2. 1,000-year
Sources of flood risk	Fluvial	0% Available modelling Stream Modelling Flood characteris 30-yea 0%	0% ed data: The s study (Environ stics: The site Proportion	25.3 ite lies within the area cover ment Agency 2011). lies partially within Flood Zo of site at risk (RoFSW) 100-year 0%	74.7% red by the Burstow ne 2. 1,000-year 0.1%
Sources of flood risk	Fluvial Surface Water	0% Available modelling Stream Modelling Flood characteris 30-yea 0% Description of sur Although a negligi from surface wate water may occur a site in a 1 in 30-yea the site in a 1 in 10	0% ed data: The s study (Environ stics: The site Proportion r rface water fle ble percentage er in a 1 in 10 along Peeks E ar event. Ther 00-year event,	25.3 ite lies within the area cover ment Agency 2011). lies partially within Flood Zo of site at risk (RoFSW) 100-year 0% ow paths: e of the site is predicted to e 00-year event, significant p Brook Lane close to the like e is also ponding present im	74.7% red by the Burstow ne 2. 1,000-year 0.1% experience flooding bonding of surface ely entrance to the mediately north of
Sources of flood risk	Fluvial Surface Water	0% Available modelling Stream Modelling Flood characteris 30-yea 0% Description of su Although a negligi from surface wate water may occur site in a 1 in 30-ye the site in a 1 in 10	0% ed data: The s study (Environ stics: The site Proportion r r rface water flo ble percentage rr in a 1 in 10 along Peeks E ar event. Ther 00-year event,	25.3 ite lies within the area cover ment Agency 2011). lies partially within Flood Zo of site at risk (RoFSW) 100-year 0% ow paths: a of the site is predicted to e 00-year event, significant p Brook Lane close to the like e is also ponding present im	74.7% red by the Burstow ne 2. 1,000-year 0.1% experience flooding bonding of surface ely entrance to the imediately north of
Sources of flood risk	Fluvial Surface Water Groundwater	0% Available modelling Stream Modelling Flood characteris 30-yea 0% Description of surface water water may occur is site in a 1 in 30-yea site in a 1 in 10 Areas Susceptible groundwater emericant	0% ed data: The s study (Environ stics: The site Proportion r rface water flo ble percentage er in a 1 in 10 along Peeks E ear event. Ther 00-year event, e to Groundwergence)	25.3 ite lies within the area cover ment Agency 2011). lies partially within Flood Zo of site at risk (RoFSW) 100-year 0% ow paths: e of the site is predicted to e 00-year event, significant p Brook Lane close to the like e is also ponding present im rater Flooding Map class (r	74.7% red by the Burstow ne 2. 1,000-year 0.1% experience flooding bonding of surface ely entrance to the nmediately north of
Sources of flood risk	Fluvial Surface Water Groundwater	0% Available modelling Stream Modelling Flood characteris 30-yea 0% Description of su Although a negligi from surface wate water may occur a site in a 1 in 30-yee the site in a 1 in 10 Areas Susceptible groundwater emer Negligible risk of fl	0% ed data: The s study (Environ stics: The site Proportion r rface water fle ble percentage r in a 1 in 10 along Peeks E ar event. Ther D0-year event, e to Groundwergence) ooding from gr	25.3 ite lies within the area cover ment Agency 2011). lies partially within Flood Zo of site at risk (RoFSW) 100-year 0% ow paths: e of the site is predicted to e 100-year event, significant p Brook Lane close to the like e is also ponding present im rater Flooding Map class (r roundwater.	74.7% red by the Burstow ne 2. 1,000-year 0.1% experience flooding of surface ely entrance to the amediately north of risk of
Sources of flood risk	Fluvial Surface Water Groundwater Reservoir	0% Available modelling Stream Modelling Flood characteris 30-yea 0% Description of sur Although a negligi from surface wate water may occur a site in a 1 in 30-yee the site in a 1 in 10 Areas Susceptible groundwater emet Negligible risk of fl The site is not at right	0% ed data: The s study (Environ stics: The site Proportion r r rface water fle ble percentage er in a 1 in 10 along Peeks E ear event. Ther 00-year event, e to Groundw ergence) ooding from gr	25.3 ite lies within the area cover ment Agency 2011). lies partially within Flood Zo of site at risk (RoFSW) 100-year 0% ow paths: a of the site is predicted to e 00-year event, significant p Brook Lane close to the like e is also ponding present im rater Flooding Map class (r roundwater. from reservoir failure.	74.7% red by the Burstow ne 2. 1,000-year 0.1% experience flooding of surface ely entrance to the amediately north of risk of
Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	Woodlea Stables
Site name	Woodlea Stables Peek Brook Lane

Flood risk management infrastructure	Defences	Defence Type	Standard	of Protecti	ion Co	ondition	
		The site does not receive protection from flood defences.					
	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.				
		Impounded water body failure?	The site is not at risk of flooding from reservoir failure.				
		Defence breach / overtopping?	Breach Zone				
			The site defences.	is not at	risk from	breach of	
Emergency planning	Flood warning	The site lies in the Burstow Stream at east and North Horley Flood Warning Area and the Ilfield Brook, Upper River Mole, Gatwick Stream, Burstow Stream and Salfords Stream Flood Alert Area.					
		Environment Agency flood warnings are now issued to individuals via the Flood Information Service.					
	Access and egress	Access and egress to this site may be achieved via Peeks Brook Lane to the east of the site. This minor road has recorded incidents of property flooding along it and may experience significant ponding of surface water close to the site.					
Climate Change	Climate change allowances for '2080s'	River Basin District		Central	Higher Central	Upper End	
		Thames		25%	35%	70%	
	Implications for the site	Climate change modelling indicates and increase in the flood extent from the Burstow Stream to the north and south of the site, however, it is unlikely to significantly change the Flood Zone classification of this site.					

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



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	Bedrock Geology	Mudstone, Siltstone and Sandstone.			
Requirement for drainage control and impact mitigation	Superficial Geology	River terrace deposits (undifferentiated) exist across the site.			
	Soils	The site has slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.			
		SuDS should be designed around existing surface water flow paths and areas of ponding. Due to the existing flood risk to properties surrounding the site, surface water discharge should be restricted to greenfield runoff rates as a minimum.			
	SuDS	The poor draining nature of the soils present on the site offer limited opportunites for infiltration SuDS.			
		Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.			
		Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.			
	Groundwater Source Protection Zone	The site does not lie within a source protection zone.			
	Historic Landfill Site	No part of the site is designated by the Environment Agency as historic landfill site, however a historic land fill site is present 200m north of the site.			
	Opportunities for flood risk betterment	Opportunity to implement exemplar SuDS design following CIRIA and SCC guidance on runoff rates and volumes, contributing to the reduction of flood peaks downstream.			
	Sequential Test and Exception Test requirements				
	 The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required: If More Vulnerable and Essential Infrastructure is located in FZ3a. If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. 				
	If Essential Infrastructure is located in Flood Zone 3b				
Recommend- ations for Local Plan policy	Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and				
	 FZ3b. More Vulnerable and Less Vulnerable development within FZ3b. 				
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers				
	Flood risk assessment:				
	 At the plat sources of Consultationan early state 	flooding) and surface water drainage strategy will be required. In with the Local Authority and the Environment Agency should be undertaken at age			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	Woodlea Stables
Site name	Woodlea Stables Peek Brook Lane
Detailed ma Environmen information whether ex Climate cha 2016) for th Guidance for s Developme The develo and 3a + up preserved a Safe acces Compensal plus approp Onsite atte peak flows All develop flooding du (CIRIA Mar benefits inc	 woodea Stables Feek brock Late odelling may be required to confirm Flood Zone and climate change extents. The nt Agency and LLFA should be consulted to obtain the latest hydraulic modelling a for the site at the time of the flood risk assessment. They will advise as to isting detailed models need to be updated. ange modelling should be undertaken using the relevant allowances (February ne type of development and level of risk. site design and making development safe: ent must seek opportunities to reduce overall level of flood risk at the site. opment should be designed using a sequential approach. Flood Zones 2 and 3, pper end climate change (subject to a detailed flood risk assessment) should be as public green space, with built development restricted to Flood Zone 1. and egress should be demonstrated in the 1 in 100 plus climate change event. tion storage would need to be provided for any land-raising within the 1 in 100 priate climate change flood extent muation options would need to be tested to ensure that altering the timing of leaving the site does not exacerbate flooding downstream. opment should adopt source control SuDS techniques to reduce the risk of ue to post-development runoff. SuDS design should flow current best practice nual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple cluding water quality, biodiversity, amenity, green infrastructure etc.