Proposed Residential Development

Land North of Garden Square, Rendlesham

Addendum to Flood Risk Assessment (Ref: AMA647, May 2018)

Introduction

This Addendum report has been prepared because there is a new layout for the proposed development.

This addendum report directly supersedes section 5 of the 2018 FRA. It also includes additional comment on flood risks arising from site, specifically in relation to additional information received regarding existing flooding at Tidy Road. All other information in the 2018 FRA still remains applicable to the development/application. Unless stated otherwise, any appendices referred to can be found in the 2018 FRA. The new section 5 below is in most parts very similar to the 2018 FRA – none of the calculations have changed, just the position of swales and catchment areas. There is also a proposed change for all the roads to remain private. This is beneficial since it allows for the inclusion of more SuDS Source Control systems (in the form of further permeable road surfacing).

The 2018 FRA was reviewed by Suffolk County Council Lead Local Flood Authority as part of the planning consultation for the previous panning application (ref DC/18/2374/FUL). Their agreement to the FRA and drainage system is given on the attached email dated 16 July 2018.

As per the 2018 FRA, this report has been prepared for Capital Community Developments Ltd.

New FRA Paragraphs

5 Proposed Site Surface Water Drainage

5.1 Overview

5.1.1 The development of the existing site would inevitably result in the generation of additional surface water runoff if measures are not taken to mitigate against the impact of introducing hard surfaces. The proposed site surface water drainage strategy therefore includes sustainable drainage systems (SuDS) to control runoff rates and mitigate against the impact of increased runoff volumes.

5.1.2 The key principles of the proposed site surface water drainage strategy are to manage runoff for flood risk mitigation:

- ✓ Soakaways are proposed throughout the site, so the proposed peak runoff rate in the 1:1 year rainfall event will be less than the peak greenfield runoff rate for the same event in accordance with clause S2 of the *Non-Statutory Technical Standards for Sustainable Drainage*, March 2015.
- ✓ Soakaways are proposed throughout the site, so the proposed peak runoff rate in the 1:100 year rainfall events including future climate change will not exceed the existing peak Qbar rate to satisfy clause S6 of the *Non-Statutory Technical Standards for Sustainable Drainage*, March 2015, and provide betterment in accordance with clause S2.
- ✓ Provide treatment in accordance with the simple index method outlined in Ciria report C753: The SuDS Manual, 2015.
- ✓ Allowances for climate change have been included in accordance with the Environment Agency's *Flood risk assessment: climate change allowances, April 2016.*
- ✓ Later detailed pipe network design should ensure that there is no flooding except in conveyance systems up to 1:30 year rainfall events - this will satisfy requirement S7 of the Non-Statutory Technical Standards for Sustainable Drainage (March 2015).

5.2 Strategy

5.2.1 In principle, the private areas will drain to private attenuation and soakaway systems. The main site roads will also remain private and discharge to separate, highway only attenuation and soakaways.

5.2.2 The position of the soakaways has generally been dictated by the site topography, site layout and land use/ownership. The following summaries the strategy:

- Runoff from each dwelling will be disposed of via infiltration into shared private garden crate type soakaways. Only roof runoff will enter this system. The roof water will pass through rainwater downpipe filters (see Appendix L) and enter crate type attenuation tank before a piped outfall into a private shared soakaway.
- Runoff from private shared access driveways will drain via permeable block paving with treatment and attenuation provided in tanked sub-strata beneath. These paving/attenuation stormwater controls will have a piped outfall into a private soakaway.
- Runoff from highways – The site access roads are likely to remain I private ownership, so more sustainable drainage systems may be used. There will be two methods used: permeable tarmac with storage beneath, and swales with bio-filters. Swales need to be kept shallow, so to prevent long, deepening pipe runs, several of these highways soakaways have been situated throughout the site. We suggested the use of kerb outlets direct into the swales (where levels allow) to eliminate the need for gulleys. Where the swale is not directly adjacent to the part

of road being drained, runoff will need to be intercepted in gulleys and piped into the swale structure.

5.2.3 Because all the site surface water will outfall to soakaways, we have designed example systems that attenuation, treat and infiltrate, which will be replicated throughout the site.

Road to Swale

A summary of the example designs is given in Tables 02 the design calculations are given in Appendix K. The location of swales are shown on Figure 09A and the associated catchments on Figure 10A.

Table 02 - Key features of example road attenuation storage and soakaway structure

	Swale	**Soakaway**
Impermeable catchment (ha)	highway area = 0.07 swale area = 0.017	N/A
Inflow Source	43% of highway area enters into swale 57% of highway area enters into tank structure under the swale	Outflow from Swale via 300 mm pipe
Section	See Figure 07	
Calculations & Schematic	Appendix K	
1:100 + CC peak volume (m^3)	90.8	7.7
1:100 + CC peak water depth (m)	1.835 (from base of crate) 0.535 (ponding)	3.03
1:1 peak volume (m^3)	11.2	5
1:1 peak water depth (m)	0.28 (from base of crate)	1.98
Minimum side slopes	1:3	N/A
Size	25 m long 6.6 m wide 0.8 m deep	1 No 1.8 m diameter 3.8 m deep with infiltration up to 1 m above invert only
Software file ref	AMA647_03.xpdx	

CC = climate change, 40%, see 5.2.13

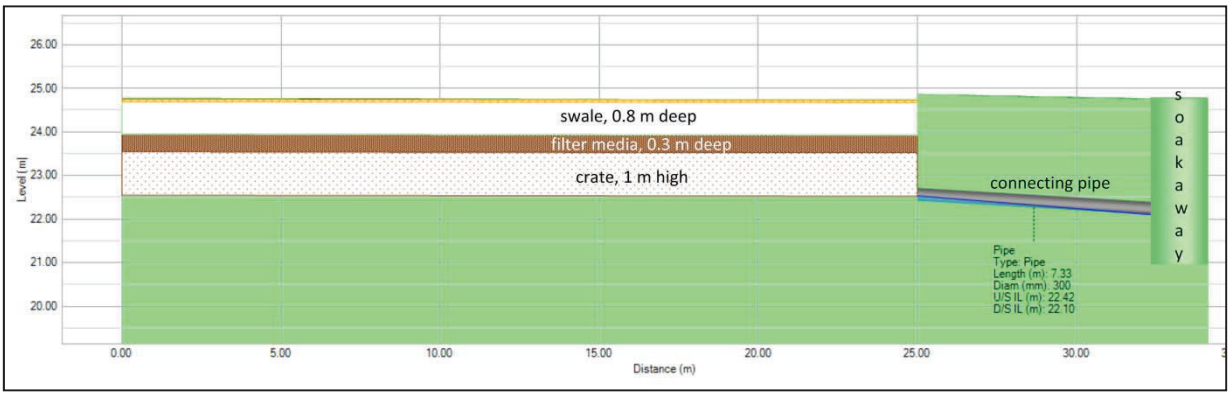

Figure 07 - Section through proposed highway swale and soakaway

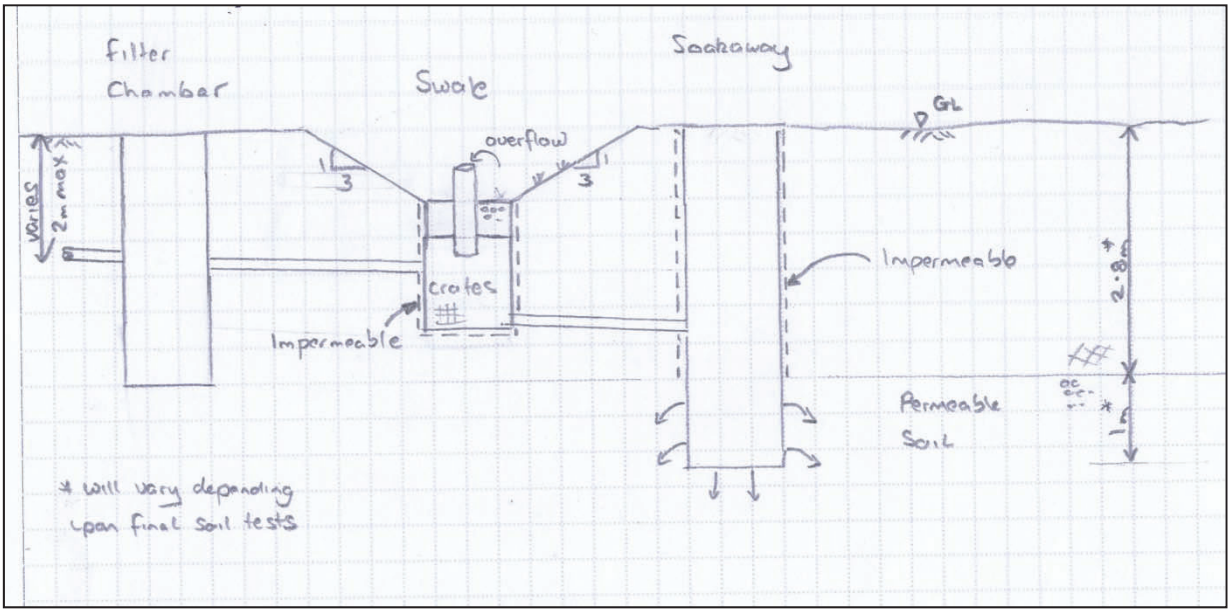

Figure 08 - Highway swale/soakaway sketch

Figure 09A - Swale locations

Table 03A - Proposed highway drainage

Proposed catchment	Total area (m^2)	Required number of swale structures	Reference of swales provided
Blue	1,495	2-3	1,2 & 3*
Red	1,290	2	4 & 5

*As note in table 02, each 25 m long swale can take 700 m^2 of road area. So ample provided.

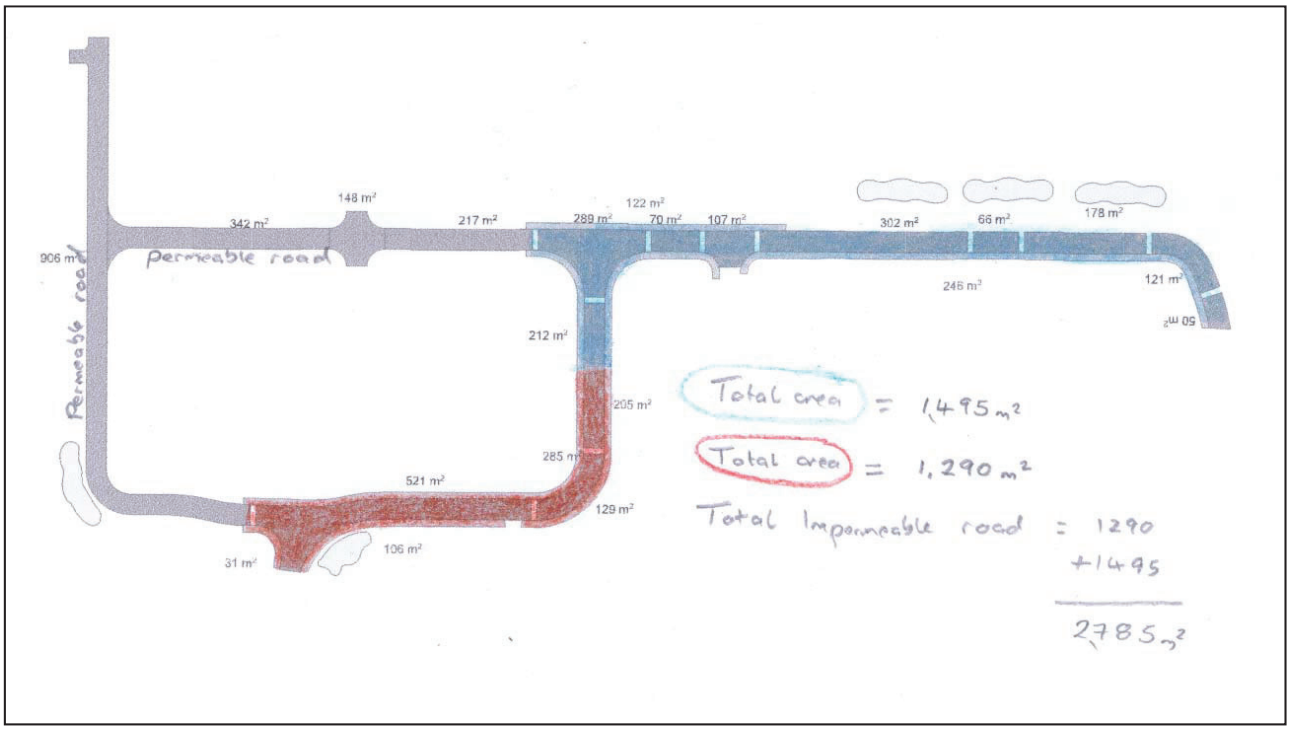

Figure 10A - Non-permeable road catchments

5.2.4 Figure 10A shows the highway sub-catchments established based upon site topography. The required highway swales for these catchments are summarised in Table 03A. The positions of these swales have been largely dictated by the site layout/design, but also influenced by site topography and the easements required to the public sewerage system.

5.2.5 Where runoff can enter at a shallower level, from gullies directly into the swale, it will be treated by passing through the swale and the filter blanket beneath before entering the attenuation crates. Where the road surface is more remote from the swale and the highway pipes will not be able to physically connect into the swale, treatment is provided in a treatment chamber, as or similar to the German Funke chamber (see Appendix K).

5.2.6 The highway swale example calculations have been based upon ground levels in the vicinity of swale 1b. Although the ground and structure levels will change for the swales in other positions, the general depth / cross section arrangement is not anticipated to change. The only difference may be a slight increase or decrease in depth of the soakaway depending upon the exact position of the sand encountered in the location of each structure. It is also subject to the design of the roads and gulley positions. The designs in this report have assumed a soakaway height into the permeable strata of 1 m. Also, the volume of storage required may change a little from the standard 700 m^2 assumed here once the detailed design is undertaken and gulley positions and all pipe levels have been established. What this report demonstrates is

the likely number and arrangement of swales/soakaways. The detailed design will also need to include infiltration testing at each specific soakaway location.

Permeable Road Surface (block or tarmac) & House Soakaways

A summary of the example soakaway designs is given in Table 04 the design calculations are given in Appendix L & M.

Table 04 - Key features of example private soakaway systems

	Private Road		**Private dwellings**	
	Permeable paving attenuation structure	**Soakaway**	**Crate tank**	**Soakaway**
Impermeable catchment (ha)	0.08	-	0.023	-
1:100 peak volume (m^3)	86	8.3	20.8	2.8
1:100 peak water depth (m)	0.31	3.3	1.1	2.9
Calculations	Appendix M		Appendix L	
1:1 peak volume (m^3)	9.4	7.6	1.8	2
1:1 peak water depth (m)	0.03	3	0.089	1.84
Size	350 mm granular sub-base (no crates)	1 No 1.8 m diameter 3.8 m deep with infiltration up to 1 m above invert only	1m high crate, 22 m^2	1 No 1.8 m diameter 3.8 m deep with infiltration up to 1 m above invert only
Software file ref	AMA647_101.xpdx		AMA647_102.xpdx	

CC = climate change, 40%, see 5.2.13

The ½ drain down times are not being estimated correctly by the software

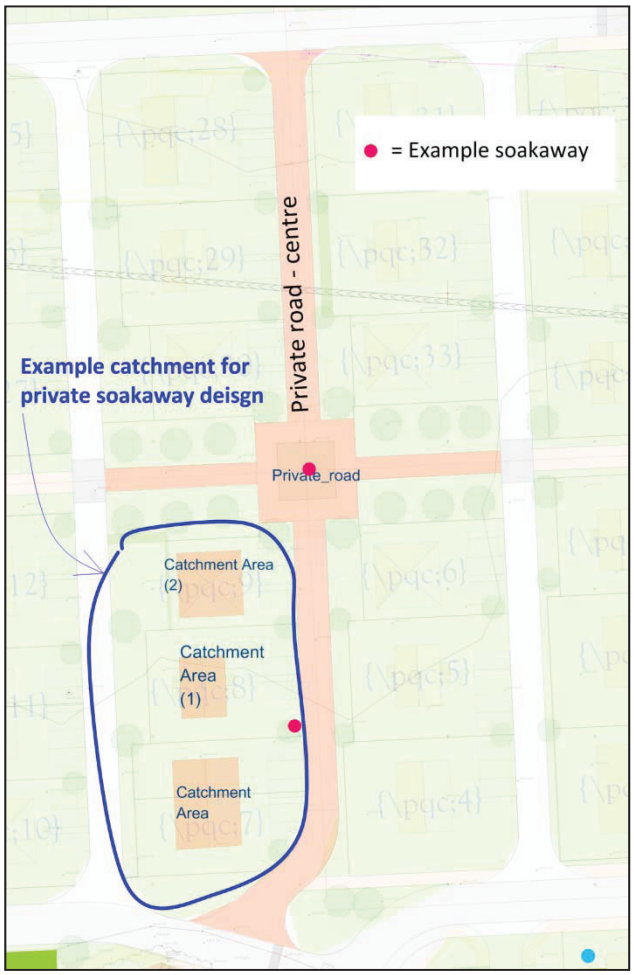

Figure 11 - Private catchment areas

(orange = catchment area for private driveway soakaway)

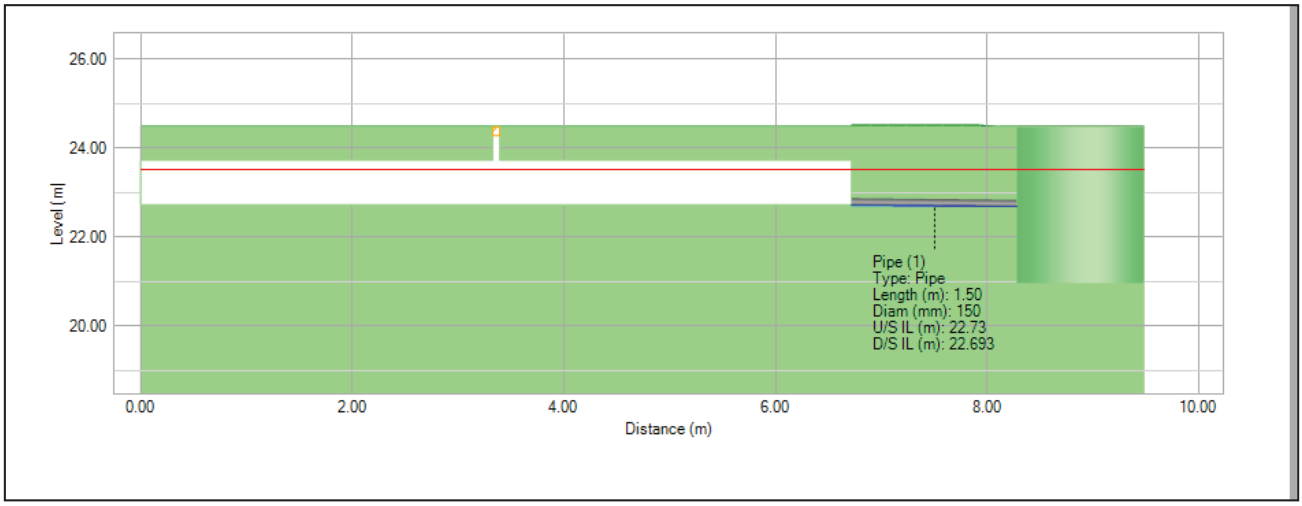

Figure 12 - Private house soakaway - section

5.2.7 All the shared driveways and shared surface roads will be surfaced with permeable paving: either block paving (driveways) or permeable tarmac). As per the previous example designs given above, there will be tanked attenuation beneath the roads, with

service strips included where necessary. The soakaway structures will be located as required under the road surface, subject to final design once the site detailed levels design is prepared.

5.2.8 All the parking spaces on site (private, visitor parking and the car park and access road at the north of the site) will be permeable, surfaced with a simple cellular paving in-filled with gravel or with grass (mostly the latter)l. They have not, therefore, been included in our example soakaway designs. We have, however, included in our calculations for future increase in drained hard surfaces at the private dwellings. The actual volumetric runoff coefficient, Cv, values used in the calculations for the residential soakaways have been increased to include for 10% urban creep. XP Drainage software does not yet have a function (we are campaigning!) for adding urban creep. The catchment areas cannot be scaled up by 10% because XP Drainage has a fully scaled graphical interface, so we have agreed with the software provider (Innovyze) that we must therefore adjust the Cv values to account for 10% urban creep. The resulting Cv values used in these calculations are therefore:

Summer Cv = 0.75 x 1.1 = 0.825

Winter Cv = 0.84 x 1.1 = 0.924

5.2.9 All the soakaway calculations have been based upon the lowest recorded infiltration rate of 2.53×10^{-5} m/s. A factor of safety of 2 has then been applied to this rate, so the infiltration rate used in the calculations is 1.265×10^{-5} m/s (0.0455 m/hr). This is considered to be a conservative rate, which is appropriate at this initial stage in the design. Particularly since rates $>1.27 \times 10^{-2}$ m/s were also observed in the same strata. The ground investigation clearly shows that there is permeable sand strata across the site, although its depth below ground varies. Now that the surface water strategy has been established and soakaway locations are known, further soil testing should be undertaken to confirm the depth to the permeable strata.

5.2.10 Generally, at the west of the site, the permeable strata was encountered at < 3 m below ground. In the east of the site, the sand was not encountered until c 3 m below ground, and at borehole DCS04, not until 3.95 m below ground. According to the drainage hierarchy (given in The Building Regulations, The SuDS Manual report C753, other national and local best practice documents), infiltration drainage techniques should be considered as the first option for disposal of surface water and only if this is not possible, should other options be considered. Because of all this, the proposed designs rely upon soakaways (with inverts 3.5 m below ground level).

5.2.11 The Anglian Water report from December 2017 in Appendix E states that '*It is our understanding that the evidence to confirm your compliance with the surface water hierarchy is not currently available. However once the evidence has been confirmed, then a connection point may be made to manhole 6800 in the existing on site public sewer at NGR TM3363953802 at a rate of 13.7l/s'.* Since the evidence of good soil permeability is now available, there is no

longer a proposal to connect into the existing public sewer on site. However, if for some reason it is later found that soakaways are not viable, then this there would be this alternative positive outfall option, or a hybrid solutions with part outfall to ground and part to sewer. If this were the case in future, space has already been allocated on site for additional shallow attenuation storage systems. For example the large public open space at the north east of the site, although this is the high point so there will be a limit as to the area that can drain to shallow attenuation system here. There are also three open areas at the south west of the site: adjacent to plots 15, 17 & 18, and between plots 14 & 21.

5.2.12 This permeable road example design has permeable paving with 350 mm of tanked granular sub-base which provides the attenuation. This system then outfalls via a pipe into a soakaway. The final level of and connections from the road attenuation system to the soakaway will be subject to detailed design, but there is adequate fall available because the strata for infiltration is not at shallow depth.

5.2.13 Climate change has been accounted for in accordance with the published Government guidance: *Flood risk assessments: climate change allowances* (April 2016). The site drainage design should use 20% increase in rainfall and the upper end allowance of 40% to check no increase in flood risk elsewhere and site safety during the 1:100 year events. In order to demonstrate at this planning stage that the development can manage the site runoff, we have run the calculations using the higher 40% climate change allowance. The results summarised in the tables above demonstrate that even during the upper (40%) climate change analysis, the attenuation storage included in the development provides adequate flood management measures by preventing uncontrolled runoff.

5.2.14 Further design notes:

a. Piped outlets from the attenuation systems will transfer flow into the soakaway chamber. These chambers then outfall via infiltration below the cohesive soil strata.
b. The key methods of runoff interception and exceedance flow routes are shown on Figure 10A. The proposed hard surfaces mainly comprise permeable paving, or fall towards swales which will intercept exceedance runoff. This is a significant improvement upon the existing situation because currently the site has no interception of greenfield runoff.
c. Trees will need to be sighted away from proposed attenuation systems, and/or protection provided to prevent root damage to the drainage systems.
d. The structural design should take account of, or advise on, the detailed soakaway designs. For this report, soakaways are situated at least 5 m away from buildings.
e. During detailed design further evidence should be established to confirm that seasonally high groundwater levels do not rise to less than 1 m from the base of the deeper soakaway structure.

f. As a result of the depth of permeable soil, the soakaway structures are deep. This is not ideal from a construction or future maintenance perspective. During detailed design, thorough guidance should be provided for future maintenance and operation. All of the soakaways are situated in reasonably accessible positions. As with any chamber there are health and safety risk associated with confined spaces (falling, drowning, gases or entrapment). The cover to the soakaway chambers should therefore be bolted to prevent unauthorised entry. Entry should be avoided. Only if absolutely necessary, should entry be undertaken only by personnel properly trained in confined space entry. The swales and filter systems upstream of the soakaways should ensure that very limited silt or debris can get into the chamber. The upstream systems should be maintained to prevent the need for entry to the soakaway chambers. Construction must be undertaken with the appropriate width of trenching and with properly designed shoring as required.

g. All of the soakaways in this report have been designed as ring soakaway chambers. This will depend upon further soil testing and confirmation of the depth to sand at each soakaway position. This should not affect the overall strategy for the surface water drainage and its impact upon site layout, but may affect the final number of soakaways.

5.2.15 Although the piped network design will later be designed to ensure no flooding even during the 1:30 worst case duration storm event, the proposed roads will be designed to convey surface water into the swales in the event of, say, gulley blockages where temporary ponding and flow might occur above ground. This will prevent overland runoff from the site's hard surfaces discharging off site in an uncontrolled manner.

5.2.16 The sustainable drainage technique of rainwater harvesting will also be included in the development. Within the 5 blocks of flats there are 5 apartments per block, on Plots 12, 14, 20, 21 and 32, and 4 blocks of flats, 3 apartments per block, on Plots 18, 19, 34 and 35. These will include rainwater harvesting for re-use within the buildings. This will reduce the potable water usage and may slightly decrease the size of the required soakaway attenuation storage volume.

5.3 Treatment

5.3.1 The proposed site surface water strategy also includes treatment in accordance with the simple index method outlines in Ciria report C753: The SuDS Manual, 2015. The measures included in the drainage design to treat runoff prior to shallow infiltration are listed below and detailed in Tables 05 and 06.

1. Tanked permeable paving structure - block paving/porous tarmac, underlain by granular fill. To provide adequate treatment, the depth of granular fill should be provided to ensure a minimum treatment depth of c350 mm (subject to final design).

2. Rainwater downpipes will be fitted with filter chambers to provide filtration prior to water entering the soakaways (see Filter Chamber Specification in Appendix L).

3. The adoptable Highway runoff will pass though, either the swale and Remedi8® filter media, or just the Remedi8® filter media within a Funke chamber (or similar), depending upon incoming invert level. Refer to details in Appendix K.

Table 05 - Proposed runoff treatment – residential dwellings

Roofs		Treatment Required[1]	Proposed Treatment individual indices[2]
Pollution Hazard[1]:	**Low**		Downpipe Filter chamber
	Total suspended solids indices	**0.3**	Actual indices are not available for this silt trap type system, but the flow will also pass through the crate tank and the geotextile membrane of the soakaways chamber, so it is considered that adequate siltation, hence treatment will occur. Rainwater downpipes should be sealed to prevent ingress of untreated substances and the property sales documentation should explain the function and maintenance needed to the house drainage systems.
	Metals indices	**0.2**	
	Hydrocarbons indices	**0.05**	

Notes:
1 - C753 table 26.2

2 - C753 table 26.3

Table 06 - Proposed runoff treatment – permeable roads*

Road		Treatment Required[1]	Proposed Treatment individual indices[2]
Pollution Hazard[1]:	**Low**		Permeable paving
	Total suspended solids indices	**0.5**	**0.7**
	Metals indices	**0.4**	**0.6**
	Hydrocarbons indices	**0.4**	**0.7**

Notes:
Assumed < 300 vehicle movements/day. 1 - C753 table 26.2 2 - C753 table 26.3

Table 07 - Proposed runoff treatment – roads to swale*

Road		Treatment Required[1]	Minimum proposed treatment individual indices[2]	
Pollution Hazard[1]:	**Low**		Swale (with Remedi8)	Funke filter chamber (with Remedi8)
	Total suspended solids indices	**0.5**	**+0.8**	**+0.8**
	Metals indices	**0.4**	**+0.8**	**+0.8**
	Hydrocarbons indices	**0.4**	**+0.8**	**+0.8**

Notes:
Assumed < 300 vehicle movements/day.

1 - C753 table 26.2

2 - C753 table 26.3

5.4 Maintenance

5.4.1 A draft surface water maintenance plan is given in Appendix N. It is important that the permeable paving is installed and maintained as suggested by the manufacturer. Also that the downpipe filters, treatment channel and highway gullies are regularly maintained (and filter media replaced) as recommended by the manufacturers and in accordance with published best practice guidance. This is required to treat runoff and intercept silt prior to discharge into attenuation systems.

5.4.2 During construction the contractor will also be responsible for preparing appropriate method statements and ensuring compliance with all relevant legislation and industry best practice in regards to managing site surface water and construction of the SuDS systems. This is necessary to manage water on site, prevent environmental pollution elsewhere and ensure the SuDS are properly constructed. It is also important to prevent uncontrolled site runoff during construction.

Some of the relevant documents that they may use are:

CIRIA report C698, Site Handbook for Construction of SuDS, 2007
CIRIA report C741, Environmental Good Practice on Site Ed 4, 2015
The former Pollution Prevention Guidance note 6 also provides useful reference.

We anticipate the following will need consideration and notes will be made on final design drawings accordingly to provide clear information to the contractor. The

contract should allow for regular monitoring of the SuDS construction. Controlling silt during construction will include:

- Careful measures will need to be put in place to ensure site runoff is controlled and prevented from flowing onto adjacent land. This is particularly important given the existing flooding in gardens south of the site.
- Construct temporary stilling ponds – these should include filtration prior to outfall (presumably to temporary soakaways or public sewer if permission allows).
- Cover stockpiles where possible.
- Obviously turbid water should not leave the site and additional settlement or filtration measures should be put in place if necessary.
- Piped network to be cleaned out if necessary post construction and before final basin commissioning.

Further comment upon flood risks

In July 2018, post issue of the 2018 FRA, we were made aware of past flooding in the garden of No 19 Tidy Road, located south west of the site. A resident has explained that there has been recurrent flooding in the garden likely to originate from the existing site field runoff.

With cohesive soils at shallow depth, some rainfall runoff will occur over the surface in the direction of the prominent topography. In any location where there is a localised 'bowl' (slightly lower ground surface) this runoff will pond at the surface and infiltrate slowly over time. This appears to be what has happened in the garden of No 19 Tidy Road. This is very often exacerbated at field corners where turning of agricultural plant creates compacted areas that further exacerbate runoff. As illustrated on FRA Figure 04, the site currently falls to the south, hence land beyond the site boundary is within the natural flow path for site runoff.

The good news is as noted in section 5.1.1 above: the proposed development includes interception and management of site rainwater runoff. So it would no longer runoff overland with no control, but be intercepted and discharge underground into the slightly deeper, permeable soil strata. The proposed permeable road surfaces will intercept runoff at source and are capable of intercepting significant rainfall from significantly rare intense rainfall events. Some of the other measures that will be put in place as part of the detailed design are shown on Figure A. The blue arrows indicate the direct of fall of the proposed hard surfaces, into the site and towards the swales that will act to intercept runoff.

It is important to note that that the development design and construction must comply with the National Planning Policy Framework (NPPF). This document states that the development should not be at flood risk throughout its lifetime, nor should it increase the flood risk of the surrounding area. The drainage infrastructure on site must be sized to accommodate 1 in 100 year + 40% climate change rainfall and the proposed site drainage design should comply with clause S9 of the National Non-statutory Standards for Sustainable Drainage (2015).

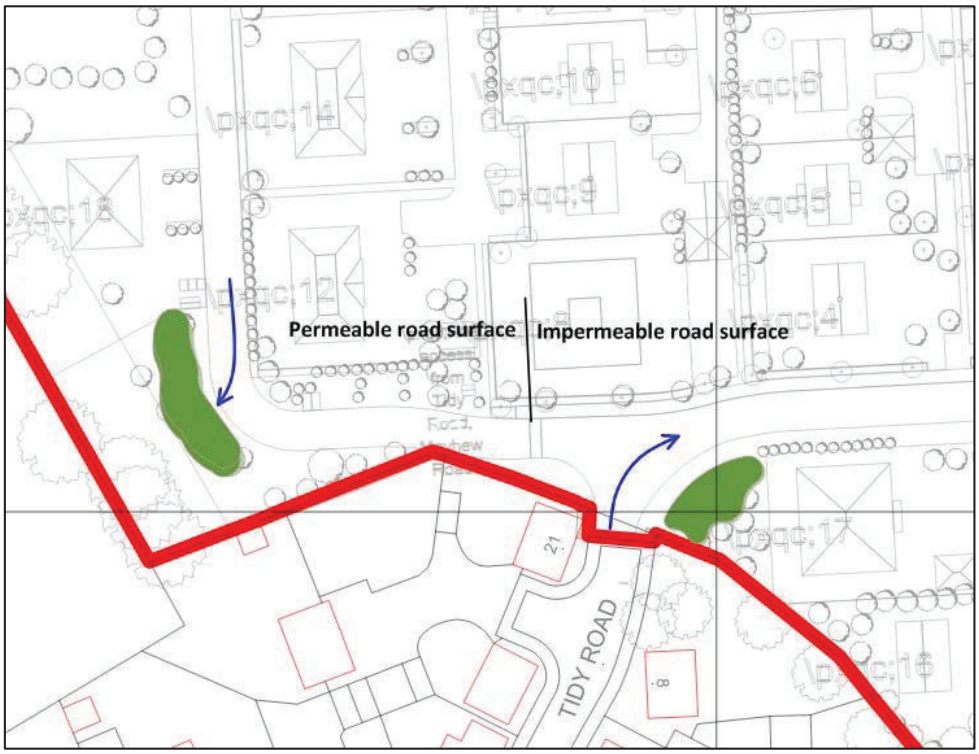

Figure A - Proposed surface water interception at south west of site

Attachments

Drawing E18836-001 Site Plan

Suffolk County Council email dated 16 July 2018

MAIN SITE PLAN

KEY SITE ELEMENTS

- Site boundary
- Existing trees
- Proposed trees and shrubs/hedges
- Vehicle & PTW parking
- Footway (adoptable)
- Footway
- Cycle store (apmts)
- Bin collection points
- Minor access road
- Raised platform junction
- Shared surface road
- Shared driveway
- 38 Individual plots
- Speed bump
- Swale
- Pedestrian access
- Vehicular access
- 2m height closeboarded wooden fence (varied designs)
- 1m height fence to include: iron railings, picket, wood panels, some with brick piers at gates.

KEY PROPERTY TYPES

- 4nr Wilby SF 1 bed FF 2 bed GF 3 bed apartments
- 1nr single garage
- 1 nr Deben 3 bed detached house
- 2nr Easton 5 bed detached house
- Woodbridge 8nr 5 bed detached house
- Framlingham 6 nr 3 bed detached house
- 6nr Beallings FF/SF 3 bed GF 2 bed maisonettes
- 4nr Glemham 3 bed (N) 4 bed (S) semi-detached houses
- 5nr double garage
- 5nr Sudbury SF 2 bed FF 2 bed FF 1 bed GF 2 bed GF 1 bed apartments
- Bramfield 1nr 3 bed detached house

Designed by:

CAPITAL COMMUNITY DEVELOPMENTS LTD
30 Gardenia Close, Rendlesham, Suffolk IP12 2GX
T: 01394 420936 • E: enquiries@ccdevelopments.co.uk

Drawing based on CCD dwg: 84 SP / P rev E, re-presented by:

Revision description	XX	XX	DD-MM-YYYY
Revision	Number	By	Date

thelandscapepartnership
planning and designing environments for life

Project	Area 8 Rendlesham
Drawing	Site plan
Job No.	E18836
Dwg. No.	E18836-001
Scale	1:500@A1
Drawn	LH
Checked	SN
Date	05-04-2019
Status	Planning

Do not scale off drawing. All dimensions & levels to be checked on site. Any discrepancies must be reported to the landscape architect immediately.

From:d.c.admin
Sent:16 July 2018 10:58
To:Jane Rodens
Subject:FW: 2018-07-16 MW Reply Land to the North and West of Garden Square and
Gardenia Close, Rendlesham Ref DC/18/2374/FUL
From: Matt Williams [mailto:Matt.Williams2@suffolk.gov.uk]
Sent: 16 July 2018 09:59
To: d.c.admin
Subject: 2018-07-16 MW Reply Land to the North and West of Garden Square and Gardenia Close,
Rendlesham Ref DC/18/2374/FUL
Dear Jane Rodens,
Subject: DC/18/2374/FUL, Land to the North and West of Garden Square and Gardenia Close,
Rendlesham
Suffolk County Council, Flood and Water Management have reviewed application ref DC/18/2374/FUL
We have reviewed the following submitted documents and we recommend approval of this application subject to conditions:
1.Amazi, Flood Risk Assessment, AMA647 Rev 0, 31/05/2018
We propose the following conditions in relation to surface water drainage for this application.
1.No development shall commence until details of the strategy for the disposal of surface
water on the site have been submitted to and approved in writing by the local planning
authority.
Reason: To ensure that the principles of sustainable drainage are incorporated into this

proposal, to ensure that the proposed development can be adequately drained

2.No development shall commence until details of the implementation, maintenance and management of the strategy for the disposal of surface water on the site have been submitted to and approved in writing by the local planning authority. The strategy shall be implemented and thereafter managed and maintained in accordance with the approved details.

Reason: To ensure clear arrangements are in place for ongoing operation and maintenance of the disposal of surface water drainage.

3.The dwellings hereby permitted shall not be occupied until details of all Sustainable Urban Drainage System components and piped networks have been submitted, in an approved form, to and approved in writing by the Local Planning Authority for inclusion on the Lead Local Flood Authority's Flood Risk Asset Register.

Reason: To ensure all flood risk assets and their owners are recorded onto the LLFA's statutory flood risk asset register as per s21 of the Flood and Water Management Act.

4.No development shall commence until details of a Construction Surface Water Management Plan (CSWMP) detailing how surface water and storm water will

be
managed on the site during
construction (including demolition
and site clearance
operations) is submitted to and
agreed in writing by the local
planning authority. The
CSWMP shall be implemented and
thereafter managed and maintained in
accordance
with the approved plan for the
duration of construction. The
approved CSWMP and shall
include:
1.Method statements, scaled and
dimensioned plans and drawings
detailing
surface water management proposals to
include :-

i. Temporary
drainage systems

ii. Measures for
managing pollution / water quality
and
protecting controlled waters and
watercourses

iii. Measures for
managing any on or offsite flood
risk
associated with construction
Reason: To ensure the development
does not cause increased flood risk,
or pollution of
watercourses in line with the River
Basin Management Plan
Informatives
*Any works to a watercourse may
require consent under section 23 of
the Land Drainage
Act 1991
*Any discharge to a watercourse or

groundwater needs to comply with the Water
Environment (Water Framework Directive) (England and Wales) Regulations 2003
*Any discharge of surface water to a watercourse that drains into an Internal Drainage
Board catchment is subject to payment of a surface water developer contribution
*Any works to lay new surface water drainage pipes underneath the public highway will
need a section 50 license under the New Roads and Street Works Act
Kind regards, Matt
Matt Williams
Flood & Water Engineer
Flood & Water Management
Growth, Highways & Infrastructure
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