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Welwyn Hatfield Borough Council
Welwyn Hatfield Borough Council Offices
Local Planning Authority
The Campus
Welwyn Garden City
Hertfordshire
AL8 6AE

13th March 2023
JD/203905

For the attention of William Myers/Chris Bower

Dear William/Chris,

Peartree Lane, Welwyn Garden City.
LLFA comments

Thank you for your comments dated 2 February 2023 relating to the information to support the discharge of Condition 5 (Drainage Scheme), 29 (Drainage Strategy), and 33 (Final Design of Drainage Scheme) of the Outline Application (6/2019/2714/OUTLINE).

We note your comments and supply the further information requested.

Conditions 5 and 33

LLFA Point 4 of condition 5 and 33

The base of the proposed tank is located 1.7m below finished ground level. In the location of the car park the levels are higher than the general site. Based on section 7.4 of the SI report by Soil Consultants, the ground water level is at depth, however perched ground water was noted in earlier readings. The shallowest perched water was noted in DS105 for the initial reading only at around 83.8mAOD, with lower depths recorded in subsequent visits. On this basis the tank will not be in hydraulic connectivity with groundwater.

With regard to floatation the tank is considered to be above groundwater levels and therefore not at risk of floatation.

LLFA Point 5 of condition 5 and 33

The 50m^3 allowance provides mitigation for the anticipated predicted surface water flood volume identified in AKS Ward report and JBA report. This additional volume

is over and above the volume required for rainfall events on the site and is therefore considered to be a conservative allowance for the attention requirements.

LLFA Point 6 of condition 5 and 33

A maintenance scheme based on the proposed scheme was included in the previous report (extract attached). For the YMCA hostel this will remain in private ownership and all maintenance will be undertaken by the site operator.

LLFA Point 7 of condition 5 and 33

Half drain times for the tank based on the current design are attached.

LLFA Point 8 of condition 5 and 33

Proposed site and FFL levels for the building are attached. These are set based on the recommendations of the Pinnacle report which suggests a minimum floor level of 83.300mAOD.

Condition 29

LLFA Point 1 of condition 29

Please note that infiltration has been considered for this site on the basis that the underlying soil is chalk, however as detailed in Section 2.2 of AKSWard report and section 9.0 of Soil Consultants report the high risk of solution features means that this option cannot be pursued.

LLFA Point 3 of condition 29

The predevelopment run off rate is 54.93 l/s. The post development run off rate is 2.5 l/s.

LLFA Point 4 of condition 29

Please find attached an updated drawing showing the two areas of parking discharging via the proposed flow control device. Attenuation will be provided in the subbase for these two small areas. Please note that these areas are already considered in the design calculations.

LLFA Point 5 of condition 29

There is no requirement for filter drains. This function is part of the permeable paving system. Underdrains to the permeable paving are located to the building perimeter. .

I trust this provides the further information you require. Please call if you have any queries.

Yours Sincerely

Jason Daniels BEng(Hons) CEng MICE MIStructE
Technical Director
Scott White and Hookins Ltd

Appendix A

Extract of AKSWard report showing maintenance requirements

6.3 SuDS Drainage Maintenance Specification

- Attenuation Tank

In order to maintain the functioning of the attenuation tanks, the following maintenance requirements should be adhered to:

Operation and maintenance requirements for attenuation storage tanks		
Maintenance Schedule	**Required Action**	**Typical Frequency**
Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae, or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from per-treatment structures and/or internal forebays	Annually, or as required
Remedial Actions	Repair/rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents, and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

- Permeable Paving

In order to maintain the functioning of the permeable paving, the following maintenance requirements should be adhered to:

Operation and maintenance requirements for permeable		
Maintenance Schedule	**Required Action**	**Typical Frequency**
Regular Maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required take remedial action	Three-monthly, 48h after large storms in first six months
	Inspect silt accumulation rate and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

6.4 General Drainage Maintenance Specification

Inlet Structures and Inspection Chambers:

- Inlet structures such as rainwater downpipes, road gullies and channel drains should be free from obstruction at all times to all free flow through the SuDS
- Inspection Chambers and Rodding Eyes are used on bends or where pipes come together. They allow access and cleaning to the system if necessary.

Inlet Structures and Inspection Chambers	
Regular Maintenance	**Frequency**
Inlet Structures Inspect rainwater downpipes, channel drains and road gullies, removing obstructions and silt as necessary. Check that there is no physical damage. Strim vegetation 1m min surround to structures and keep area free from silt and debris	Monthly
Inspections Chambers and below ground control chambers. Remove cover and inspect, ensuring that the water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt. Undertake inspection after leaf fall in Autumn	Annually
Occasional Maintenance Check topsoil levels are 20mm above edges of chambers to avoid mower damage.	As necessary
Remedial Work Repair physical damage if necessary	As required

Below ground drainage pipes:

Below ground drainage pipes convey water to the SuDS system. They should always be free from obstruction to allow free flow.

Below Ground Drainage Pipes	
Regular Maintenance	**Frequency**
Inspect and identify any areas that are not operating correctly. If required, take remedial action. Remove debris from the catchment surface (where it may cause risks to performance) Remove sediment from pre-treatment inlet structures and inspection chambers. Maintain vegetation to designed limits within the vicinity of below ground drainage pipes and tanks.	Monthly for 3 months then annually Monthly Annually or as required Monthly or as required
Remedial Work Repair physical damage if necessary	As required
Monitoring Inspect all inlets, outlets and vents to ensure that they are in good conditions and operating as designed. Survey inside of pipe runs for sediment build up and remove if necessary.	Annually Every 5 years or as required

Appendix B

Half drain time and pre development run off calculation

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Half Emptying Time Check for 30 Year Critical Storm Event

Tank size =	25	x	8.5	x	0.8	
	Length (m)		Width (m)		Depth (m)	
Porosity =	0.95					
	as decimal					
Max WL =	82.411	m				
Tank IL =	81.95	m				
Max water depth =	0.461	m				
Max volume =	74.45	m^3				
Restricted discharge rate =	2.5	l/s				
Tank full volume =	161.5	m^3				
Half empty volume =	80.75	m^3	>	74.45	m^3	

Tank does not reach half full during storm event therefore half empty within 24 hours requirement met.

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RUN-OFF CALCULATION FROM SMALL DEVELOPMENT SCHEMES

Design to BS EN 752-4:1997 Clause 11.3.2

Project Title: **PEARTREE LANE, WELWYN GARDEN CITY**

Ref: **EXISTING SW RUNOFF**

Return Period: 1

Peak flow rate $Q = \psi i A$

ψ = run-off coefficient from table below. 1

i = 0.016 l/s/m² (Obtained from Figures ND.1, ND.2, ND.3 or ND.4 dependent on Return Period required**)

A = 3433 m² (Total impermeable area)

Q = 54.93 l/s

NOTE: A Q of 54.93l/s equates to an average rainfall depth of approximately 2.4mm over the duration of the storm.

** Interpolated rainfall intensity values 'i' should be used for Return Periods other than 1, 5, 50 and 100 years.

Nature of connected area	Run-off coefficient, ψ	Comments
Impermeable areas and steeply sloping roofs (1)	0,9 to 1,0	Depending on depression storage.
Large flat roofs	0,5	Over 10000m² (>1ha)
Small flat roofs	1,0	Less than 100 m²
Permeable areas	0,0 - 0,3	Depending on ground slope and cover
(1) Impermeable areas may be increased by 30% for large vertical surfaces.		

Appendix C
Proposed site and building levels

Notes

For notes refer to drawing 203905-SWH-ZZ-XX-DR-C-5700

Key

- 83.400 / 83.400 — Proposed contours
- 83.446m + — Proposed finished levels
- 83.920m + — Existing levels to remain
- 0.5m high gabion retaining wall
- 0.9m high gabion retaining wall
- 1.3m high gabion retaining wall
- 1.3m high retaining wall - Prefered construction to be confirmed by Architect/Client/Contractor

HAZARDS LEADING TO UNUSUAL OR SIGNIFICANT RISKS DURING THE CONSTRUCTION PROCESS ARE IDENTIFIED ON THIS DRAWING AS:

NOTE: THE LIST BELOW IDENTIFIES CERTAIN RISKS WHICH ARE DEEMED TO BE UNUSUAL, ABNORMAL OR UNEXPECTED TO A COMPETENT CONTRACTOR CARRYING OUT WORK OF THIS NATURE BUT DOES NOT COVER ALL POSSIBLE SITUATIONS WHICH MAY BE ENCOUNTERED DURING THE CONSTRUCTION PROCESS. IT IS THEREFORE THE MAIN CONTRACTOR'S RESPONSIBILITY TO IDENTIFY ANY FURTHER RISKS/HAZARDS AND TAKE APPROPRIATE ACTION.

RISKS/HAZARDS SPECIFIC TO THIS DRAWING:

PRELIMINARY - NOT FOR CONSTRUCTION

Rev.	Amendment	Dm.	Chkd.	Appd.	Date
P01	PRELIMINARY	CW	NC	JD	05.12.22

Project

PEARTREE LANE
WELWYN GARDEN CITY

Drawing

FINISHED LEVELS LAYOUT

Client
Kori Construction

Scott White and Hookins
Structural Engineering | Civil Engineering | Sustainability and BREEAM | CDM Consultancy

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Scale at A1 - 1:200

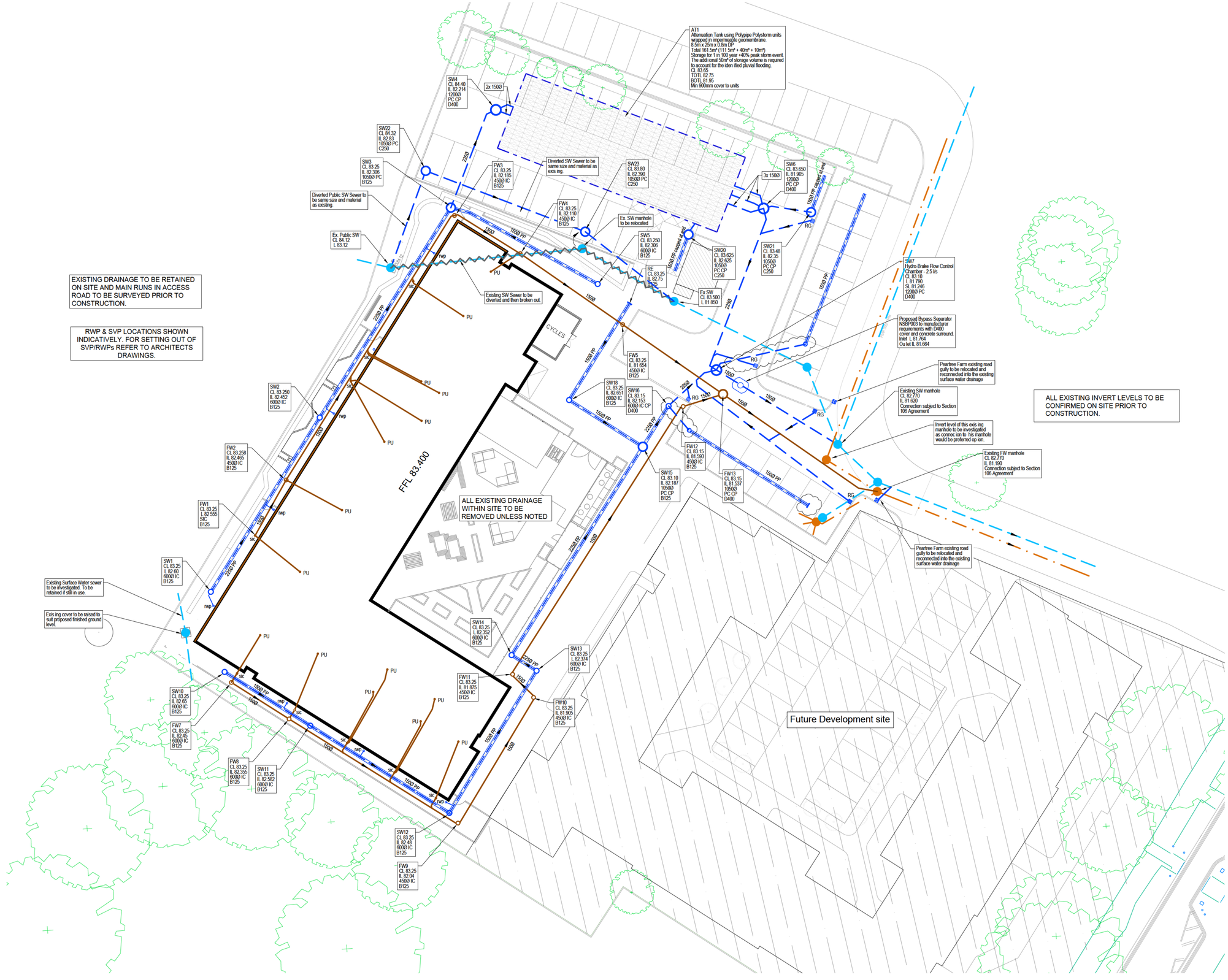
203905-SWH-ZZ-XX-DR-C-5501-P01

Project | Originator | Zone | Level | Type | Role | Number | Rev.

CP004-01_FM_ST_008_D

DO NOT SCALE FROM THIS DRAWING

Appendix D
Drainage Layout Drawing



Notes

For General and Drainage notes refer to drawing no. 203905-SWH-ZZ-XX-DR-C-5700.

Key

- Proposed SW manhole, Plastic Inspection Chamber (ppic) or Shallow Inspection Chamber (sic).
- Proposed FW manhole, Plastic Inspection Chamber (ppic) or Shallow Inspection Chamber (sic).
- Existing SW manhole
- Existing FW manhole
- Proposed SW sewer / Existing SW sewer
- Proposed SW connection / Existing SW connection
- Proposed FW sewer / Existing FW sewer
- Proposed FW connection / Existing FW connection
- Perforated pipe in trench
- RG Proposed new road gully
- rwp Rainwater downpipe
- RE Rodding eye
- PU Pop up for Soil Vent Pipe / Stub Stack to Architects requirements
- Cellular attenuation tank

HAZARDS LEADING TO UNUSUAL OR SIGNIFICANT RISKS DURING THE CONSTRUCTION PROCESS ARE IDENTIFIED ON THIS DRAWING AS:

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RISKS/HAZARDS SPECIFIC TO THIS DRAWING:

Contractor to check for existing below ground services. A sub site services survey is available.

PRELIMINARY - NOT FOR CONSTRUCTION

Rev.	Amendment	Drn.	Chkd	Appd.	Date
P03	PRELIMINARY - minor changes as clouded	NSC	JD	JD	13.03.23
P02	PRELIMINARY	NSC	JD	JD	15.12.22
P01	PRELIMINARY	NSC	JD	JD	13.12.22

Project

PEARTREE LANE
WELWYN GARDEN CITY

Drawing

PROPOSED DRAINAGE LAYOUT

Client

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Scale at A1 - 1:200

203905-SWH-ZZ-XX-DR-C-5000-P03

Project | Originator | Zone | Level | Type | Role | Number | Rev.

CP004-01_FM_ST_008_D

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