NOTES:

1. DO NOT SCALE THIS DRAWING. IF IN DOUBT PLEASE REQUEST FURTHER INFORMATION.
2. ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT CONTRACT DRAWINGS, CONSTRUCTION DETAILS AND SPECIFICATIONS.

KEY:

- PROPOSED SURFACE WATER DRAIN
- PROPOSED CELLULAR STORAGE
- PROPOSED FOUL WATER DRAIN
- PROPOSED CATCHPIT
- PROPOSED BYPASS SEPARATOR
- 0.02m³ OF FLOODING — EXCEEDANCE FLOODING

Mark	Revision	Date	Drawn	Chkd	Appd

SCALING NOTE: Do not scale from this drawing. If in doubt, ask.

UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty to this is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake their own investigation where the presence of any existing sewers, services, plant or apparatus may affect their operations.

Drawing Issue Status

PLANNING

THE OLD POWER STATION
VASTERN ROAD
EXCEEDANCE FLOODING
100 YEAR EVENT +80% CLIMATE CHANGE

Client

Berkeley
Designed for life

Date of 1st Issue	Designed	Drawn
19.12.2019	JS	CD
A1 Scale	**Checked**	**Approved**
1:250	JS	PJG

Drawing Number: 47500/2001/002

Revision: -

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READING
Tel: 01189 500 761

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm North

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1
Number of Online Controls 2 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 18.700 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 400.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years) 100
Climate Change (%) 80

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	1	15 Winter	100	+80%	100/15 Summer	100/15 Winter		
1.001	2	15 Winter	100	+80%	100/15 Summer			
1.002	3	15 Winter	100	+80%	100/15 Summer			
1.003	4	15 Winter	100	+80%	100/15 Summer			
1.004	5	15 Winter	100	+80%	100/15 Summer			
2.000	6	15 Winter	100	+80%				
1.005	7	15 Winter	100	+80%	100/15 Summer			
1.006	8	15 Winter	100	+80%	100/15 Summer			
1.007	9	15 Winter	100	+80%	100/15 Summer			
1.008	10	30 Winter	100	+80%	100/15 Summer	100/15 Winter		
1.009	11	30 Winter	100	+80%	100/15 Summer			
3.000	12	30 Winter	100	+80%	100/15 Summer			
3.001	13	30 Winter	100	+80%	100/15 Summer	100/30 Winter		
3.002	14	30 Winter	100	+80%	100/15 Summer			
3.003	TANK1	30 Winter	100	+80%	100/15 Summer			
1.010	TANK2	30 Winter	100	+80%	100/15 Summer			
1.011	15	30 Winter	100	+80%	100/15 Summer			
1.012	16	30 Winter	100	+80%	100/15 Summer			
1.013	17	30 Winter	100	+80%	100/15 Summer			
1.014	18	30 Winter	100	+80%	100/15 Summer			

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm North

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	38.500	0.550	0.238	0.52		8.2	FLOOD	1
1.001	2	38.495	0.630	0.000	1.09		16.4	FLOOD RISK	
1.002	3	38.450	0.645	0.000	0.83		30.4	FLOOD RISK	
1.003	4	38.400	0.725	0.000	1.19		39.4	SURCHARGED	
1.004	5	38.351	0.736	0.000	1.32		47.0	FLOOD RISK	
2.000	6	39.018	-0.082	0.000	0.42		17.8	OK	
1.005	7	38.257	0.732	0.000	1.57		75.9	FLOOD RISK	
1.006	8	38.216	0.711	0.000	1.46		74.0	FLOOD RISK	
1.007	9	38.169	0.689	0.000	1.34		79.3	FLOOD RISK	
1.008	10	38.106	0.681	5.995	1.30		67.1	FLOOD	3
1.009	11	38.094	0.694	0.000	3.79		74.8	FLOOD RISK	
3.000	12	38.096	0.646	0.000	0.33		11.0	FLOOD RISK	
3.001	13	38.100	0.705	0.001	0.55		18.7	FLOOD	1
3.002	14	38.083	0.683	0.000	0.55		27.5	FLOOD RISK	
3.003	TANK1	38.075	0.675	0.000	0.76		25.9	FLOOD RISK	
1.010	TANK2	38.063	0.663	0.000	1.47		73.7	FLOOD RISK	
1.011	15	38.015	0.680	0.000	1.28		73.9	SURCHARGED	
1.012	16	37.964	0.674	0.000	0.62		92.9	SURCHARGED	
1.013	17	37.366	0.616	0.000	1.59		92.2	FLOOD RISK	
1.014	18	37.228	0.528	0.000	1.80		92.6	FLOOD RISK	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm South

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1
Number of Online Controls 1 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 18.700 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 400.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years) 100
Climate Change (%) 80

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	S31	30 Winter	100	+80%	100/15 Summer			
S1.001	S32	30 Winter	100	+80%	100/15 Summer	100/30 Winter		
S2.000	STANK	30 Winter	100	+80%	100/15 Summer			
S1.002	S33	30 Winter	100	+80%	100/15 Summer			
S3.000	S34	30 Winter	100	+80%	100/15 Summer			
S3.001	S35	30 Winter	100	+80%	100/15 Summer			
S4.000	S36	30 Winter	100	+80%	100/15 Summer	100/30 Winter		
S4.001	S37	30 Winter	100	+80%	100/15 Summer			
S3.002	S38	30 Winter	100	+80%	100/15 Summer			
S1.003	S39	30 Winter	100	+80%	100/15 Summer			
S1.004	S40	30 Winter	100	+80%	100/15 Summer			
S1.005	SSeparator	30 Winter	100	+80%	100/15 Summer			

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S31	38.498	0.773	0.000	0.99		16.5	FLOOD RISK	
S1.001	S32	38.500	0.945	0.023	2.15		34.3	FLOOD	1
S2.000	STANK	38.386	0.936	0.000	0.56		28.6	FLOOD RISK	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm South

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.002	S33	38.387	0.937	0.000	0.58		36.7	FLOOD RISK	
S3.000	S34	38.446	0.876	0.000	0.42		14.8	FLOOD RISK	
S3.001	S35	38.424	0.949	0.000	0.89		31.4	FLOOD RISK	
S4.000	S36	38.500	0.820	0.065	0.58		21.8	FLOOD	1
S4.001	S37	38.463	0.948	0.000	1.11		40.4	FLOOD RISK	
S3.002	S38	38.384	0.994	0.000	1.30		78.1	FLOOD RISK	
S1.003	S39	38.352	0.998	0.000	1.61		98.6	FLOOD RISK	
S1.004	S40	38.171	0.886	0.000	2.23		118.8	FLOOD RISK	
S1.005	SSeparator	37.528	0.303	0.000	2.40		118.7	SURCHARGED	

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Appendix I Thames Water - Pre-Planning Enquiry Response

Mr Timothy Yau
Stantec
Caversham Bridge House
Reading
RG1 8DN

Wastewater pre-planning

Our ref DS605687

10 December 2019

Pre-planning enquiry: Confirmation of sufficient capacity for foul water

Dear Mr Yau

Thank you for providing information on your development located at 53-55 Vastern Road, Reading, to redevelop the site and build 208 residential units and a café (21sq m). Foul water will discharge into chamber 4001 (via Lynmouth Road into Vastern Road). Peak foul water discharge is calculated at 2.58l/s. Surface water will Has not been assessed as part of this preplanning application.

We have completed the assessment of the foul water flows based on the information submitted in your application with the purpose of assessing sewerage capacity within the existing Thames Water sewer network.

Foul Water

If your proposals progress in line with the details you've provided, we're pleased to confirm that there will be sufficient sewerage capacity in the adjacent foul water sewer network to serve your development.

This confirmation is valid for 12 months or for the life of any planning approval that this information is used to support, to a maximum of three years.

You'll need to keep us informed of any changes to your design – for example, an increase in the number or density of homes. Such changes could mean there is no longer sufficient capacity.

Surface Water

Please note that discharging surface water to the public sewer network should only be considered after all other methods of disposal have been investigated and proven not to be viable. In accordance with the Building Act 2000 Clause H3.3, positive connection to a public sewer will only be consented when it can be demonstrated that the hierarchy of disposal methods have been examined and proven to be impracticable. The disposal hierarchy being: 1st Soakaways; 2nd Watercourses; 3rd Sewers.

Only when it can be proven that soakage into the ground or a connection into an adjacent watercourse is not possible would we consider a restricted discharge into the public surface water/combined sewer network.

Thames Water Planning team would ask to see why it is not practicable on the site to restrict to Greenfield run-off rates if they are consulted as part of any planning application.

In considering your surface water needs, we support the use of sustainable drainage on development sites. You'll need to show the local authority and/or lead local flood authority how you've taken into account the surface water hierarchy that we've included.

Please see the attached 'Planning your wastewater' leaflet for additional information.

Management of surface water from the site should follow policy 5.13 of the London Plan, development should 'aim to achieve greenfield run-off rates' utilising Sustainable Drainage and where this is not possible information explaining why it is not possible should be provided to both the LLFA and Thames Water.

Typically, greenfield run off rates of 5l/s/ha should be aimed for using the drainage hierarchy. The hierarchy lists the preference for surface water disposal as follows;

- Store Rainwater for later use, Use infiltration techniques, such as porous surfaces in non-clay areas, Attenuate rainwater in ponds or open water features for gradual release
- Discharge rainwater direct to a watercourse
- Discharge rainwater direct to a surface water sewer/drain, Discharge rainwater to the combined sewer.

What happens next?

Please make sure you submit your connection application, giving us at least 21 days' notice of the date you wish to make your new connection/s.

If you've any further questions, please contact me on 0203 577 9811.

Yours sincerely

Andrew John - Adoptions Engineer

Thames Water