

Our Ref: 22094-SWD-CO-01 P01

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Dear Sir/Madam,

TRIBECCA PLOT B AND PLOT C

**REQUEST TO DISCHARGE PLANNING CONDITION 23 OF PLANNING APPLICATION 2021/2671/P
RELATING TO SUSTAINABLE DRAINAGE STRATEGY**

I refer to Planning Condition 23 of Planning Application 2021/2671/P relating to the details of the surface water drainage for the development known as Tribeca Plot B and Plot C, located at St Pancras Way, London, NW1. Permission was granted on the 7th of November 2022 and Condition 23 states that:

Prior to commencement of development on each plot, other than works of demolition, site clearance and preparation, full details of the sustainable drainage system as stated in the approved document 'Flood Risk Assessment and SuDS Strategy' dated 31/08/2017, prepared by Water Environment Limited on behalf of GD Partnership Ltd, shall be submitted to and approved in writing by the local planning authority. Details shall include the following SuDS measures:

a) Plot B:

- Combination biodiverse/blue and blue roofs: 41.7 m3 storage*
- Cellular attenuation tank buried under basement car park: 34.2 m3 storage*
- Controlled outflow to combined sewer: 22.6 l/s discharge rate*
- Controlled outflow to Regent's Canal: 13.1 l/s discharge rate*

b) Plot C:

- Combination biodiverse/blue and blue roofs: 55.0 m3 storage*
- Cellular attenuation tanks buried under external paving: 150.0 m3 storage*
- Controlled outflow to combined sewer: 83.8 l/s discharge rate*
- Controlled outflow to Regent's Canal: 17.3 l/s discharge rate*

Such a system should be designed to accommodate all storms up to and including a 1:100 year storm with a 40% provision for climate change such that flooding does not occur in any part of a building or in any utility plant susceptible to water, and shall demonstrate a minimum 50% reduction in total run-off rate as stated in the approved document.

Plot B 35.7 l/s discharge rate

Plot C 101.1 l/s discharge rate.

Details shall include for the relevant plot a site-specific lifetime maintenance plan, overland flow routes for exceedance events, an interim drainage strategy for the demolition and construction phase, and final discharge approvals, and shall thereafter be retained and maintained in accordance with the approved details.

The drainage design presented in the enclosed information and discussion which follows is consistent with the strategy submitted within the Flood Risk Assessment and SuDS Strategy (FRA) dated 31/08/2017. Although there have been some changes to the detail, the core principles of the approved Sustainable Drainage Strategy, as well as the number of new outfalls and overall rates of discharge have all been retained. Enclosed with this submission are the following details which have been issued for tender:

- Site-wide stormwater drainage strategy, drawing 22094-SWD-DP-01. This is a roof-level view of the proposed development, illustrating the main components of the stormwater drainage design as well as the locations of the outfalls and corresponding flow rate
- Area of proposed soft landscaping, drawing 22094-SWD-DP-03. This is a roof-level drawing which illustrates areas of the site that will function as soft-landscaped areas and which will retain some water volume, albeit water retention at roof level has not been accounted for in the drainage design which must function in extreme rainfall conditions where there will not be time for infiltration to occur. Nevertheless these areas will serve to reduce the site runoff volume in typical rainfall events and provide opportunity for an improvement in biodiversity and public amenity.
- Microdrainage calculations which correspond to the proposed design set out in 22094-SWD-DP-01.
- Sectional elevations through below-ground-level SuDS components, drawing 22094-SWD-DS-01. This provides detailed orthographic projections of flow control chambers and vortex flow controls for the main attenuation features at ground level which ultimately discharge to the public sewer, as well as sections through the attenuation crates and rainwater harvesting tank as they sit on the slab above the basement level.
- Sectional elevation details through roof-level SuDS components, drawing 22094-SWD-DT-01. This provides typical detail sections through the proposed biodiverse/blue roof structure and the proprietary outlet flow controls.
- Detailed drawings of the canal outfall arrangements, drawing 22094-SWD-DT-02. This illustrates how the water is collected from the rainwater downpipes (conveying water from the blue roofs), and how it is discharged via a shallow drainage system into the canal.
- Stormwater drainage design philosophy, technical note 22094-SWD-TN-03. This is a technical document which explains how the stormwater drainage design works and the key reasons behind the design decisions leading up to the final design.

Specifics of the SuDS components for each of the two plots, and how they compare or deviate from the approved strategy, is discussed below for Plot B and Plot C in turn.

Plot B Sustainable Drainage Summary

For Plot B, the total combined rate of discharge for the 100 year storm with 40% provision for climate change is designed to be 34.9 li/s (less than the 35.7 li/s limit in the planning condition) and is split between a new distributed outfall to Regent's Canal (20.5 li/s) and a new connection to the Thames Water (TW) combined

sewer in St Pancras Way (14.4 li/s). The discharge to the canal has been approved in principle with the Canal and River Trust (C&RT).

The proposed discharge to Thames Water public sewer will be controlled to a rate of 14.4 li/s and will provide a greater-than 79% reduction in discharge rate and volume when compared to the pre-development conditions where all site runoff discharged directly to the public combined sewer with no on-site attenuation, at an estimated rate of 70.8 li/s.

The deviations from the strategy on Plot B, as presented in the FRA, are summarised in the following table:

SuDS component	FRA strategy (Planning)	Updated design (Post-planning)	Description of change/Impact
Combination biodiverse/blue roof:	13.9 m ³ storage	241.3 m ³ blue roof storage with 322m ² of green/biodiverse roof	When compared to the original strategy, a large increase in blue/biodiverse roof area has been provided on the building roof, resulting in a substantial increase in the share of surface water runoff able to discharge by gravity to the canal.
Cellular attenuation tank buried below ground and basement:	34.2 m ³ storage below basement car park	0 m ³ storage at ground level or below basement car park	The reduction in storage below ground level is more than compensated for by the substantial increase in provision of biodiverse/blue roof for the scheme. This results in a corresponding significant reduction in catchment area being served by the Thames Water sewer in line with the SuDS hierarchy. Elimination of the original proposals for below-ground attenuation also removes the requirement for any pumps, so that the system can operate reliably and sustainably under gravity.
Controlled outflow to combined sewer:	22.6 li/s discharge rate	14.4 li/s discharge rate	When compared to the original proposals, a large reduction in discharge rate to the combined sewer has been achieved through the increased amount of water which has been directed to the canal via the blue roof. This is aligned with the SuDS hierarchy,

SuDS component	FRA strategy (Planning)	Updated design (Post-planning)	Description of change/Impact
			prioritising discharge to the open watercourse, and will result in reduced pressure on the public sewer network during heavy rainfall.
Controlled outflow to Regent's Canal:	4.4 li/s discharge rate	20.5 li/s discharge rate	The new proposals result in an increase in discharge rate to the canal, diverting surface water runoff away from the combined sewer, and reducing the risk of flooding on neighbouring properties. The combined Plot B discharge rate is reduced slightly below that of the original proposals.

The design deviations presented above all contribute to an improvement over the drainage strategy submitted in the FRA by reducing the overall discharge rate and significantly reducing the rate and volume of discharge to the TW sewer, whilst avoiding any necessity for a pumped surface water system.

Plot C Sustainable Drainage Summary

For Plot C, the total combined rate of discharge for the 100 year storm with 40% provision for climate change is designed to be 96.2 li/s (less than the 101.1 li/s limit in the planning condition) and is split between a new distributed outfall to Regent's Canal (69.1 li/s) and a new connection to the Thames Water (TW) combined sewer in St Pancras Way (26.3 li/s). The discharge to the canal has been approved in principle with the Canal and River Trust (C&RT).

The proposed discharge to Thames Water public sewer is controlled to a rate of 26.3 li/s and provides a greater than 87% reduction in discharge rate when compared to the pre-development conditions where all site runoff discharged directly to the public combined sewer with no on-site attenuation at an estimated rate of 202.9 li/s.

The deviations from the strategy on Plot C, as presented in the FRA, are summarised in the following table:

SuDS component	FRA strategy (Planning)	Updated design (Post-planning)	Description of change/Impact
Combination biodiverse/blue roof:	55.0 m ³ storage	Total on buildings C1, C2, and C3 of 433.5 m ³ blue roof storage with 354m ² of green/biodiverse roof	A large increase in blue/biodiverse roof area has been provided on the building roof of C1, C2 and C3, resulting in a substantial increase in the share of surface water runoff able to discharge by gravity to the canal.

SuDS component	FRA strategy (Planning)	Updated design (Post-planning)	Description of change/Impact
Cellular attenuation tank buried below ground and basement:	150.0 m ³ storage below basement car park	128.8 m ³ cellular attenuation storage below external areas, as well as 52.3 m ³ of rainwater harvesting storage	The reduction in attenuation storage below ground level is more than compensated for by the substantial increase in provision of biodiverse/blue roof for the scheme, and the inclusion of a large rainwater harvesting provision which will prevent the discharge of water from the site for the first 5mm of rainfall. This results in a corresponding significant reduction in catchment area being served by the Thames Water sewer in line with the SuDS hierarchy. The system can operate reliably and sustainably under gravity.
Controlled outflow to combined sewer:	83.8 li/s discharge rate	26.3 li/s discharge rate	When compared to the original proposals, a large reduction in discharge rate to the combined sewer has been achieved through the increased amount of water which has been directed to the canal via the blue roof. This is aligned with the SuDS hierarchy, prioritising discharge to the open watercourse, and will result in reduced pressure on the public sewer network during heavy rainfall.
Controlled outflow to Regent's Canal:	4.4 li/s discharge rate	20.5 li/s discharge rate	The new proposals result in an increase in discharge rate to the canal, diverting surface water runoff away from the combined sewer, and reducing the risk of flooding on neighbouring properties. The combined Plot B discharge rate is reduced slightly below that of the original proposals.

The design deviations presented above all contribute to an improvement over the drainage strategy submitted in the FRA by reducing the overall discharge rate and significantly reducing the rate and volume of discharge to the Thames Water combined public sewer, whilst avoiding any necessity for a pumped surface water system.

The provision of stormwater attenuation and biodiverse areas has been maximised across the site, to limit the rate and volume of runoff leaving the site during heavy rainfall events including an appropriate allowance for climate change. Additionally, since ground conditions are not suited to infiltration and site topography is not suited to open water features, the configuration of the drainage has been designed to maximise the volume of runoff which discharges to the open watercourse in preference to the public sewer.

These updated proposals represent a more-than 50% reduction in peak stormwater runoff rate when compared to the pre-developed rate, and the improved configuration of the roof-level drainage has resulted in further significant reductions in discharge rate and volume to the public sewer when compared to the original proposals as set out in the approved Flood Risk Assessment and SuDS Strategy (FRA) dated 31/08/2017. Whereas almost all of the existing (predevelopment) site drained to the public combined sewer with a combined total area of Plot B and Plot C amounting to an area of approximately 9,690m², in the proposed site 7,110 m² will be directed to the Regent's Canal, thus reducing the volume of stormwater entering the public combined sewer by more than 73%.

We believe that the enclosed information comfortably meets the requirements set out in Condition 23 of approved Planning Application 2021/2671/P, and we request that this condition be discharged so that the construction can proceed.

Please feel free to contact us directly if you require any further information or clarification in this regard.

Yours sincerely,



Tony Clothier

PhD, BSc Eng (Civil)
C.WEM, CEnv, CEng

Director

Encl.