



## Newham LLFA

### **Flood Risk and Sustainable Drainage: requirements and guidance for Planning Application.**

All major development applications are required to submit for approval a surface water management strategy

Surface water management details must be set out within a Flood Risk Assessment Report for all applications in Flood zones 2 and 3 over 250sqm, in a Critical Drainage Area (CDA) and any development over 1 *hectare*.

All other major developments that do not require a FRA are required to provide surface water management detail in form of a Drainage Strategy Report based on SUDS principles.

The applicant's plans for the management of surface water and drainage strategy need to meet the requirements set out by:

- [Newham Local Plan](#) - Policy SC1, SC2, SC3, SC4 and SP9.
- [LBN's Local Flood Risk Management Strategy \( LFRMS\)](#)  
N.B. published Local Flood Risk Management Strategy (LFRMS) is currently being updated. It remains Newham's main reference in matters of surface water flood risk and SuDS requirements, however needs to be read in conjunction with more recent documents, such as this guidance and Newham Local Plan 2018.
- Please also note [Planning Application Requirements \(PAR\)](#) document issued by Newham Local Planning Authority.
- [LBN's Surface Water Management Plan \(SWMP\)](#) *NB standard of runoff reduction within the SWMP does not represent current requirement. (See this guidance and Local Plan policy SC3)*
- Newham [Strategic Flood Risk Assessment \(SFRA\)](#) 2017
- London Plan (2016): Policy 5.13 and its guidance: [Sustainable Design and Construction SPG](#) .
- They also need to meet the requirements of the approved building regulations [Part H: drainage and water disposal](#).
- You will need [planning permission](#) to use a material that cannot absorb water (e.g. impermeable concrete) in a front garden larger than 5 square metres.

Newham [Planning Application Requirements](#) (PAR) document, under its 'Flood Risk Assessment' and 'Surface Water Strategy' sections, lists required evidences and their specifications that must be submitted in support of a planning application.

FRAs will be reviewed by London Borough of Newham (Lead Local Flood Authority) and the Environmental Agency under their complementary remits:

- Lead Local Flood Authority will assess surface water flood risk for all major developments and their drainage scheme. The lead local flood authority will ask that you complete the Drainage *pro-forma* to assist in their assessment.
- The Environment Agency will focus their assessment on river and tidal flood risk aspects.

### **General pre-application advice on Surface Water Management**

In drawing up your surface water management schemes developers should refer to the [SUSDRAINS website](#) and [CIRIA Guidance \(including the SuDS Manual \(C753\) 2015\)](#), as this includes a wealth of detailed information on sustainable drainage to assist the developer in managing surface water drainage. Reference to the technical guidance in [Defra/EA Rainfall Runoff Management for new Developments science report, Revision E](#) provides applicants with advice on the management of storm water drainage and in particular to assist in sizing of storage elements for the control and treatment of storm water runoff. Applicants may also want to use the online tool from [www.UKsuds.com](http://www.UKsuds.com) to help derive preliminary calculations.

### **Newham LLFA's pre-application advice**

Newham LLFA can provide specific advice as relevant to a development proposal. This can include review information provided by developer, review of LLFA available data on local flood risk and SuDS design and make recommendations to developer with regard to local and national policies.

However, please note that this service is not part of the LLFA's statutory duties and needs to be agreed with the LLFA and Newham LPA as part of a pre-planning consultation agreement. A fee is applied to meet LLFA's costs.

[Pre-Application Advice Guidance Note & Charging Schedule](#)

### **Drainage Strategy Information Required Outline Applications**

An outline planning application should include enough information to demonstrate a workable solution for managing surface water drainage. The assessment submitted should include a preliminary study outlining the existing surface water run-off rates from the site and an indication of post development run-off rates with associated storm water storage requirements. An indication should be given to how sustainable drainage will be established with the preferred option of infiltration to ground where this is acceptable.

There needs to be clear view of where the proposal is going and underlying principles. At the outline planning stage it should be possible for an outline drainage strategy to be produced which clearly identifies and quantifies the defining principles to be taken forward. This would allow a reasonably worded surface water drainage condition, to be satisfied at the reserved matters detailed design stage, to be included as part of the outline planning permission.

### **Drainage Strategy Information Required for Full or Reserved Matters Applications**

Application should have progressed from an initial preliminary drainage study and include detailed information about the existing run-off rates and storage requirements. In addition to this, the drainage strategy should show that opportunities to implement sustainable drainage techniques at the site have been maximised and any obstacles to their use is clearly justified within the report. This should include, where appropriate, provision for the adoption of drainage infrastructure and maintenance contributions to that party.

A [Newham LLFA drainage pro-forma](#) should be completed by the developer and submitted with the application. This will present a summary of the key information from the surface water drainage strategy and will support the Local Planning Authority in making a decision on the suitability of the proposal as advised by the LLFA.

When further detail of the proposed scheme is required the use of a planning condition to secure this information and agreed specifications can be considered.

### **Newham's Standards**

**NB.** Newham has been assessed by Thames Water as having the lowest sewer capacity of all 33 London boroughs. Newham's sewer infrastructure is nearing capacity and projected to be over capacity within next 20-30 years.

More than half of Newham's sewer infrastructure consists of an historical combined sewer system, providing very low capacity which makes the borough particularly prone to surface water flooding during rainstorms.

There have been four borough-wide flooding events in Newham during the last six years, each associated with several internal flooding incidents and numerous evidence of sewer surcharge.

Accordingly, Newham in its Flood Risk Management function must adopt a strategic approach, beyond specific local flood risk issues, to appraise surface water management scheme proposal.

The above dictates that appraisal of proposed drainage schemes must ensure that the highest standard of flood risk mitigation measures are applied to all major development connected to the sewer system.

In quantitative terms the above signifies that post development greenfield runoff rates, or below, is the requirement for all major development proposals in Newham and that associated runoff volumes in excess of greenfield for the

relevant rainstorm event are to be infiltrated or discharged at rates below 2 l/s/ha by use of long term storage.

It is recommended that a SuDS treatment train is utilised to assist achieving the above whilst maximising additional sustainability benefits ((e.g. biodiversity habitat, water quality, improved amenity value, community resource etc.)

**Newham Local Plan (Policy SC3)** consistently with Newham **LFRMS** provides that:

*'c) All development should enable separation of foul and surface flows and incorporate Sustainable Urban Drainage Systems (SUDS) that reduce surface water run-off.*

*All major development and any development falling within a Critical Drainage Area (CDA) should achieve Greenfield Run-off and be accompanied by a Surface Water Drainage Strategy (SWDS) that:*

- i. clarifies before and after development run-off rates and addresses water quality impacts, ensuring run-off water is clean and safe;*
- ii. follows the drainage hierarchy of the London Plan;*
- iii. maximises the use of SUDS in accordance with the SUDS hierarchy (see SC1);*
- iv. confirms the ownership, management and maintenance arrangements of any SUDS features;*
- v. shows regard to the recommendations of Newham's Surface Water Management Plan (SWMP) and Local Flood Risk Management Strategy (LFRMS);*
- vi. confirms, only where it can be demonstrated that site conditions prohibit the achievement of greenfield run-off, that a rate no higher than 3 times greenfield will be achieved.'*

### **Major development post-development runoff rate requirements specifications**

**All new development proposals** should achieve post development **Greenfield runoff rates**, unless it can be demonstrated that site conditions prohibit meeting this standard. Drainage calculations should always make reference to this benchmark.

As **minimum requirement<sup>1</sup>** where demonstrated that site conditions prohibit achieving greenfield rates, Newham (in line with the London Plan Guidance and UKCIP guidance) requires that 'brownfield' redevelopments greater than 0.1 hectare to reduce post development runoff rates, for events up to and including the 1 in 100 year return period event with an allowance for climate

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<sup>1</sup> Please note that major development proposals should not aim at the minimum requirement: Newham LFRMS (2.15.23) specifies that: 'LLFA will adopt a presumption against proposals that arbitrarily pre-empt SUDS feasibility or aim from the onset at minimum standards'

change (i.e. **CC= 40%**), to **not more than 3 times the calculated greenfield runoff rate** for the site (calculated in accordance with IoH124).

NB Newham LLFA does not accept 50% reductions from pre-development condition as a minimum standard.

The only other exceptions to the above, for which discharge rates greater than 3 times the calculated greenfield runoff rate could be considered, are where:

- Surface water drainage discharge is to tidal waters and unacceptable scour would not result. In such cases, where controlling discharge rate is less crucial under flood risk concerns, proposals will be evaluated on whether SUDS additional benefits (i.e. biodiversity habitat, water quality, amenity value, community resource etc.) are sufficiently represented in the proposed design. NB the effect of tidal locking
- Where a pumped discharge would be required to meet applicable standard (i.e. post-development runoff equal/between greenfield and 3-greenfield runoff rate). In such cases the LLFA would consider the proposal on its own merits, including local flood risk, additional sustainability benefits (e.g. biodiversity habitat, water quality, improved amenity value, community resource etc.) content of the proposal and evidences of non-feasibility of alternative design solutions meeting the required standards.

### **Minimum and Maximum Discharge rates**

Proposed post-development runoff reduction must be demonstrated for all applicable return periods (i.e. 1 in 1, 1 in 30, 1 in 100 and 1 in 100 + CC) critical rainstorm event.

Drainage scheme proposing a single capped maximum discharge rate for all applicable return periods (i.e. a SuDS strategy which does not provide Long Term Storage<sup>2</sup>) should note that this will be expected not higher than the calculated greenfield  $Q_{bar}$  for the site. Please note that historical 5 l/s standard as minimum discharge rate is no longer supported in current practice or accepted by Newham.

Proposals should demonstrate that discharge rates are managed as close as feasible to required standard by adopting suitable flow control measure.

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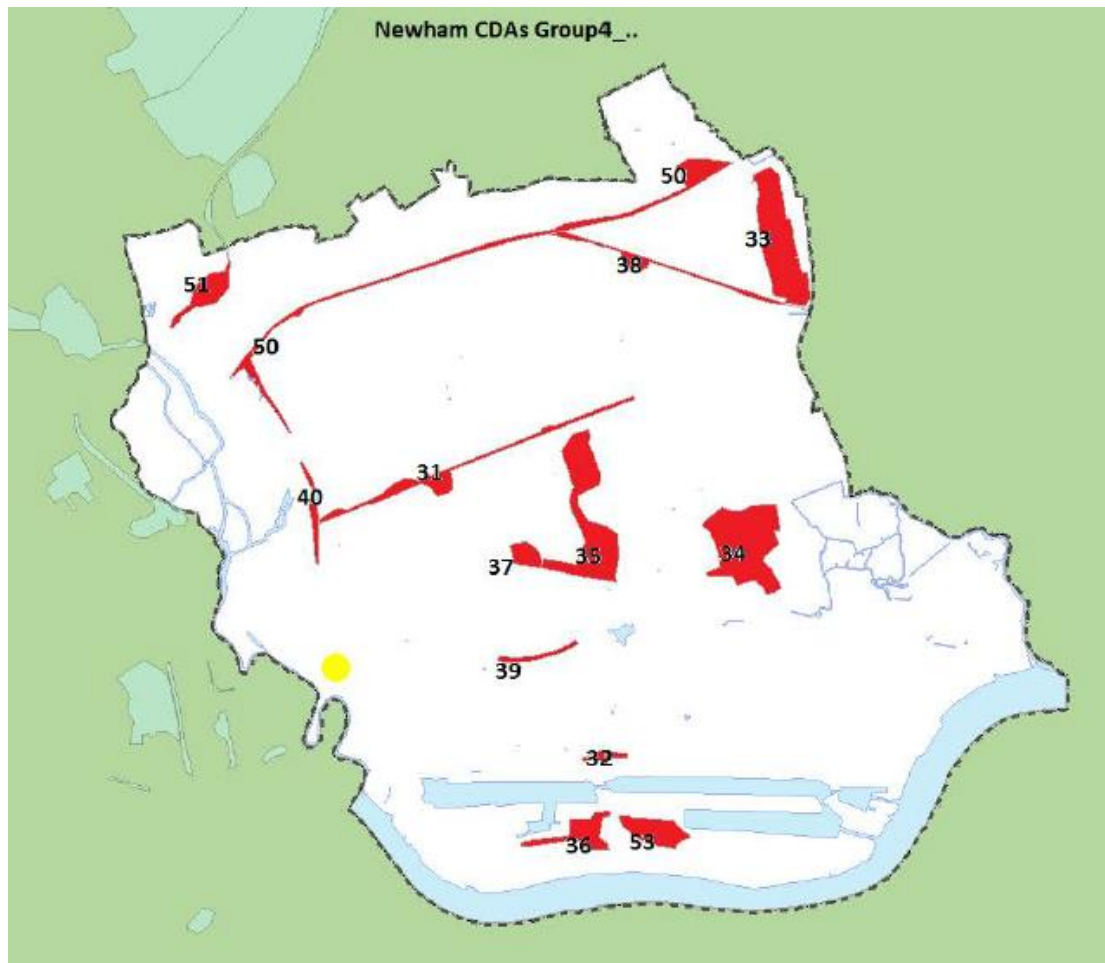
<sup>2</sup> Long Term Storage is the term given to the volume of temporary storage which needs to be provided for the additional volume of surface water runoff that is generated by the development that is greater than the volume of greenfield runoff. The greenfield runoff volume is calculated using the 1:100 year 6 hour event. This volume is the amount that can be discharged at the 1:100 year greenfield runoff rate.

The additional runoff volume should be discharged from the site at a flow rate less than 2l/s/ha for this event. As critical duration events for the design of the site storage system will be much longer than 6 hours, the Long Term Storage volume is not calculated using the 1:100 year 6 hour event, but needs to be assessed using the critical duration event.

Hydro-brakes or other proprietary flow control devices can manage flow rates as low as 1-2 l/s without incurring in blockage issues.

### CDA requirements

13 Critical Drainage Areas (CDA) have been identified in Newham. Development in a Critical Drainage Area or discharging to a CDA attracts the highest standards in terms of flood risk reduction. Accordingly major development proposals are required to reduce post development peak run runoff to greenfield rate or lower for all events up to and including the 1 in 100 year return period event with an allowance for climate change.



Newham CDAs location

## Climate Change Allowance

Climate Change Allowance (CCA) applicable to drainage calculation in line with EA guidance is currently plus 40%.

## Greenfield Rates Calculation

Greenfield calculations should be performed using IH124 method as supported by the HR Wallingford tool.

<http://www.uksuds.com/drainage-calculation-tools/greenfield-runoff-rate-estimation>

This is required to enable consistency of assessment between different planning applications. Use of default soil type (WRAP classes 1-5) and their equivalent SPR obtained by 'click on' map tool is the preferred approach.

The LLFA won't object to greenfield calculation using FEH based methodology provided results are overall consistent with IH124 output and the HOST soil class used in the calculation can be demonstrated relevant to the pre-development condition of the site.

Please note that Newham LLFA does not accept urban soil types or *ad hoc* derived soil for a greenfield runoff estimation nor, under the same concern, applying urban catchment parameters.

The aim of the greenfield calculation is that of estimating runoff from a notional greenfield as it might have existed in a given location in pre-development conditions (i.e. approximating a natural vegetated soil from prevalent parent materials).

The estimation of greenfield rates, under a SUDS design concern, is that of informing SUDS solutions apt to remediate a degraded baseline (i.e. soil denoting often unstructured or compacted characteristics from previous use) not to validate it.

## Further Guidance

A Sustainable Drainage Guidance, reflecting a pan-London approach, as promoted by London GLA with LoDEg (London Drainage Engineers), and co-authored by LB of Newham LLFA with McCloy Consulting and Robert Bray Associates, titled 'Sustainable *Drainage Design and Evaluation Guide*' is soon to be published on the Newham Website under its 'Flooding' section.