



Flood storage calculations

Section 1: volume of flood storage reduced by the development

The site area within the flood plain 3 plus climate change allowance has been calculated and demonstrated in the cross sections. The relevant sections are B-G inclusive. Due to the complex nature of the design we have divided the area affected by the new earthworks in the flood zone into a series of four areas. We call these 'slice sections'. We are then able to calculate the volume of flood water storage displaced in each of these slice sections. This gives a more accurate volume than use of a single 'slice'. The calculations for each slice section are listed below.

Slice section - G- F/E

This runs from section G to half-way between sections F and E due to the gap in the mounding to facilitate level access to the gate.

- Area of storage at G= 0.006 m2
- Area of storage at F= 0.08 m2
- Average cross-sectional area within this slice section= 0.043 m2
- Length of this slice section is 10m, therefore;
- Volume of lost storage within this slice section= 0.43m3

Slice section - E-D.

- Area of storage at E= 0.02 m2
- Area of storage at D= 0.05 m2
- Average cross-sectional area within this slice section= 0.035 m2
- Length of this slice section is 11.5m, therefore;
- Volume of lost storage within this slice section= 0.385m3

Slice section - D-C

- Area of storage at D= 0.05 m2
- Area of storage at C= 0.43 m2
- Average cross-sectional area within this slice section= 0.24 m2
- Length of this slice section is 11.5m, therefore;
- Volume of lost storage within this slice section= 2.76m3

Slice section - C-B

- Area of storage at C= 0.43 m2
- Area of storage at B= 0.62 m2
- Average cross-sectional area within this slice section= 0.525 m
- Length of this slice section is 14m, therefore;
- Volume of lost storage within this slice section= 7.3m3

Grand total of flood storage lost = 10.875m3

Section 2: volume of compensatory flood storage created by the development

We have replaced the 10.875m3 figure with approximately **12.5 m3 of new storage**, giving a wide margin for error. This is provided by means of a shallow ditch around 0.2m at its deepest point, around 3.10m wide and 35m long. This volume has been calculated using accurate CAD measurements of the cross section of this in J K and L sections.

Key

Slice Section G-F/E

Slice Section E-D

Slice Section D-C

Slice Section C-B

|                                                                                                                                                         |            |          |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|------------|
|                                                                                                                                                         |            |          |            |
| Rev                                                                                                                                                     | Date       | Detail   | By         |
| <div><div>EASTLEIGH BOROUGH COUNCIL</div></div>                                                                                                         |            |          |            |
| Site Address:<br>Fleming Park,<br>Eastleigh, Hampshire                                                                                                  |            |          |            |
| Do not scale from this drawing. All dimensions and measurements to be checked on site. The accuracy is the responsibility of Eastleigh Borough Council. |            |          |            |
| Drawing Title:<br>Fleming Park Paddling Pool<br>and Play Area: Flood slice-section areas<br>and calculations                                            |            |          |            |
| Date:                                                                                                                                                   | 22.07.2024 | Scale:   | 1:250 @ A1 |
| Drawn:                                                                                                                                                  | IS         | Checked: |            |
| Drawing Number:                                                                                                                                         | S4E38-06   | Rev:     | -          |