



GOVERNMENT OF BERMUDA

Department of Planning

A Guide for Storm Water Control and Disposal

As development takes place in Bermuda, more land is covered by impermeable surfaces such as asphalt and concrete. Rainwater is unable to seep through these surfaces to the soil and sand below. Rainwater that cannot be absorbed in the soil flows off the hard surface towards the closest low-lying area. Any time there is significant rainfall floods can occur if there are not adequate provisions made to collect and dispose of the storm water. In order to ease the problem of flooding and water run-off onto roads and adjacent properties, applicants for planning permission and building permit approval must demonstrate the storm water management techniques used for each project. This is a mandatory requirement for development. The objective is to maintain the existing pre-development flows post-development.

The Bermuda Plan has policies that speak to the matter of Storm Water run off. They are as follows:

Section 3, Chapter 11: Transportation and Parking (TPT) Policy TPT.25 (c) states:

“hard surfaced areas shall be graded and drained to ensure that all water run-off is disposed of within the curtilage of the site.”

Section 3, Chapter 12: Utility Services (UTL) Policy UTL.15 states:

“All development proposals shall be required to demonstrate to the satisfaction of the Board that the control and disposal of storm water runoff will take place within the boundaries of the site during the site preparation, construction and operational phases.”

Section 7, Chapter 26: Residential (RSD) Policy RSD.16 states:

- (1) The proportion of a lot covered by hard surfacing shall not exceed the following provisions:-
 - Residential 1 70%
 - Residential 2 40%
- (2) The requirements specified in sub-paragraph (1) may be relaxed at the discretion of the Board provided the Board is satisfied that:-
 - a) existing site conditions prevent the achievement of the requirement; and
 - b) the grounds in support of proposal as submitted by the applicant justify the exercise of the Board’s discretion.

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How do you control and dispose of storm water?	First, it is important to avoid covering your whole property with materials such as asphalt and concrete as these are hard impermeable surfaces. Second, for most development proposals, the installation of drainage soakaways at the end of driveways will reduce the flow of storm water from your property. The Bermuda Residential Building Code 1998 provides details of appropriate site drainage methods for sites. Section 5.12 of the Code provides details on trenches, soakaway pits and hard surfaced areas.
Are there any special considerations?	Yes. The problem of storm water control is particularly severe in the Mills Creek industrial area. This is due to the fact that the land is mostly covered in concrete and asphalt and the water table is very close to the ground's surface.
Mills Creek Area	<p>The special considerations for the Mills Creek area are outlined in Section 3, Chapter 12, Policy UTL.16 which states:</p> <p>(1) All development proposals located in the Mills Creek Industrial zone, and within the Water Resources Protection Area shall be required to demonstrate to the satisfaction of the Board that:-</p> <ul style="list-style-type: none"> a) the control and disposal of all storm water runoff will take place within the boundaries of the application site and that no drainage will take place into the Pembroke Canal; b) the proposal has been approved by a registered engineer with regard to the provision of appropriate storm water drainage and disposal methods; c) the design of any borehole is approved by the Environmental Authority; d) a Certificate of Water Right has been obtained from the Environmental Authority; e) any proposal that may result in storm water being deposited into the Pembroke Canal is forwarded to the Ministry of Works and Engineering for review and approval. <p>(2) In amplification of sub-paragraph (1), for the avoidance of doubt cesspits are not permitted for the disposal of waste water, and as such septic tanks or higher level of waste water treatment facility shall be provided and approved by the Environmental Authority and the Department of Health.</p>
Is any ongoing maintenance involved?	Yes. Maintenance is a key component of any storm water disposal system. You must regularly remove the buildup of leaves, soil and silt that blocks soakaways and the settling chamber of sumps.