



DMX Drain 18X™
Installation Manual
Version 1.0

Intro to DMX Drain 18X™

DMX Drain 18X™ is recommended for the following applications:

- Green Roofs
- Pavers i
- Planters
- Plaza Decks

DMX Drain 18X™ compliments a liquid applied or sheet applied waterproofing product for a total systems approach to waterproofing.

DMX Drain 18X™ is the perfect choice for horizontal applications with a higher compressive strength and the ability to provide excellent drainage for multiple assemblies.

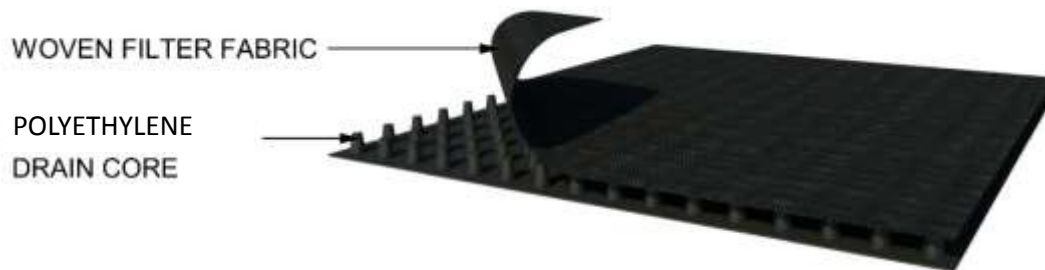


Figure 1 DMX Drain 18X™ Sample



Contents

1.0 Getting Started	2
1.1 Supplies Required	2
1.2 Recommended Tools	2
1.3 Preparing the Site for Horizontal Application.....	2
1.4 Where to Start on a Roof	3
1.5 Joining Rolls of DMX.....	3
2.0 DMX Drain in Green Roof Systems.....	5
2.0.1 Extensive Green Roofs	5
2.0.2 Semi-Intensive Green Roofs.....	6
2.0.3 Intensive Green Roofs.....	6
2.1 DMX Drain Around Roof Drains	7
2.1.1 Vegetation Free Zones Around Roof Drains	8
2.2 DMX Drain 18X™ at Green Roof Parapet.....	9
3.0 Plaza Deck w/ Pedestals on DMX Drain 18X™	10
4.0 Asphalt, Concrete, & Pavers on 18X™	11
4.1 Pavers on DMX Drain 18X™	11
4.1.1 Pavers at Parapet	11
4.1.2 Pavers in Junction with Green Space	12
4.2 Concrete.....	13
4.3 Asphalt	13
5.0 Insulated Concrete Slabs	14
6.0 General.....	15
6.1 Clean up & Inspection.....	15
6.2 Covering Horizontal Drain with Gravel	15
6.3 Health and Safety.....	15
6.4 Limitations	15
7.0 Table of Figures	16

1.0 Getting Started

This section applies to supplies, tools and preparation that will be required for a proper installation of DMX Drain 18X™.

1.1 Supplies Required

Rolls of DMX Drain 18X™	❖ 1 roll equals 50ft. (15.25m) in length. ❖ Choose the height that matches the distance from the footing to the grade line. ❖ Available Dimensions: • 1.22m x 15.25m (4' x 50') • 1.83m x 15.25m (6' x 50')
Sealing Tape	❖ Recommended for sealing down the geotextile when joining drain boards.

1.2 Recommended Tools

Utility Knife	❖ For cutting the membrane.
----------------------	-----------------------------

1.3 Preparing the Site for Horizontal Application

- Make sure the surface is clean at the level of installation. This makes it easier to roll out the membrane smoothly.
- Ensure proper drainage is provided in accordance with local Code Requirements.
- Drainage is vital to the success of your project, and the optimum performance of DMX Drain 18X™. It is extremely important for the drainage area to be functioning properly.
- DMX Drain 18X™ can be installed in any type of weather. However, for positive product installations, it is suggested for the membrane not to be installed in temperatures below 14°F (-10°C).
- When dewatering, follow local By-Laws/Rules about discharging rainwater on public or private property.

1.4 Where to Start on a Roof

When starting a job, it is recommended to follow these steps or proceed if previous experience has resulted in successful installations.

Step 1: When working with DMX Drain it is best to locate the lowest point, which should be around the roof drain. This will be the starting point.

Step 2: Roll out DMX Drain 18X™, woven fabric side up, in the direction that will be the most efficient for the project.

Step 3: During *Step 2* the roof drain will be covered. It is recommended that the drain board be cut tightly around the drain before moving on.

Step 4: Continue rolling out the rest of the first drain board.

Step 5: Align the next drain board with the one that was previously laid and roll it out across the roof.

Step 6: Unfold fabric from around drain board, a mastic or sealant may be applied at the joining of the two drain boards (optional).

Step 7: Fold over the fabric and hold down with sealing tape (if required).

1.5 Joining Rolls of DMX

When joining adjacent rolls together (that have been properly installed across the surface) that require proper drainage, follow these steps:

Step 1: Unfold filter fabric from around the edge of the joining side of the membrane and move drain board into position directly next to the previously laid drain board.

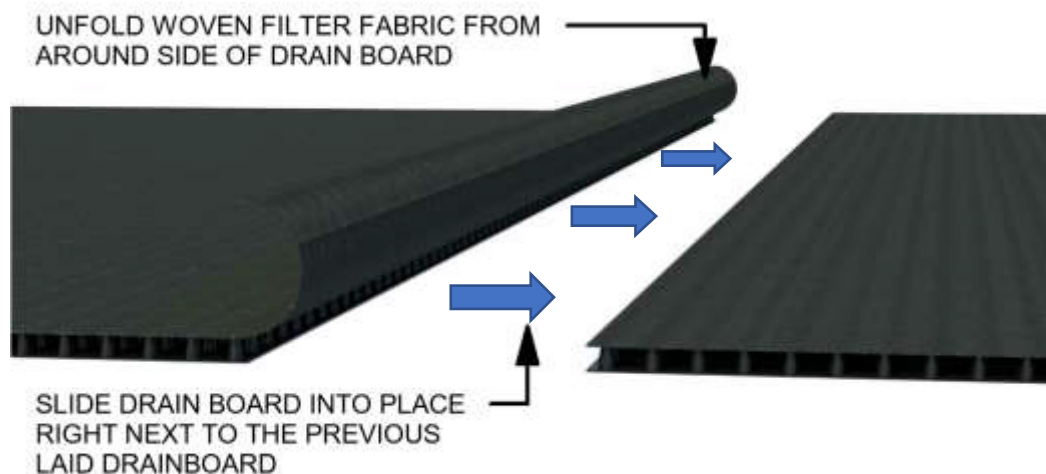


Figure 2 Joining Rolls Step 1

Step 2: Lay a bead of mastic at the joining of the drain board if needed, then fold filter fabric over the adjacent drain board to seal the open edge.

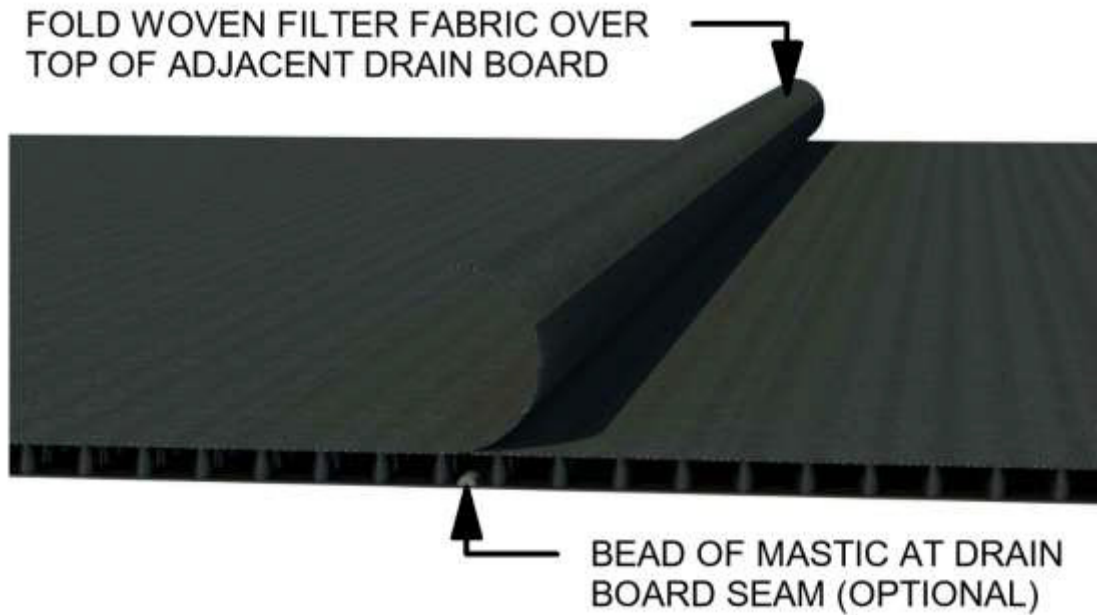


Figure 3 Joining Rolls Step 2

Step 3 (OPTIONAL): Use approved sealing tape to hold filter fabric flat in position and to stop any intrusion of soil or any other debris from getting into the drainage core.

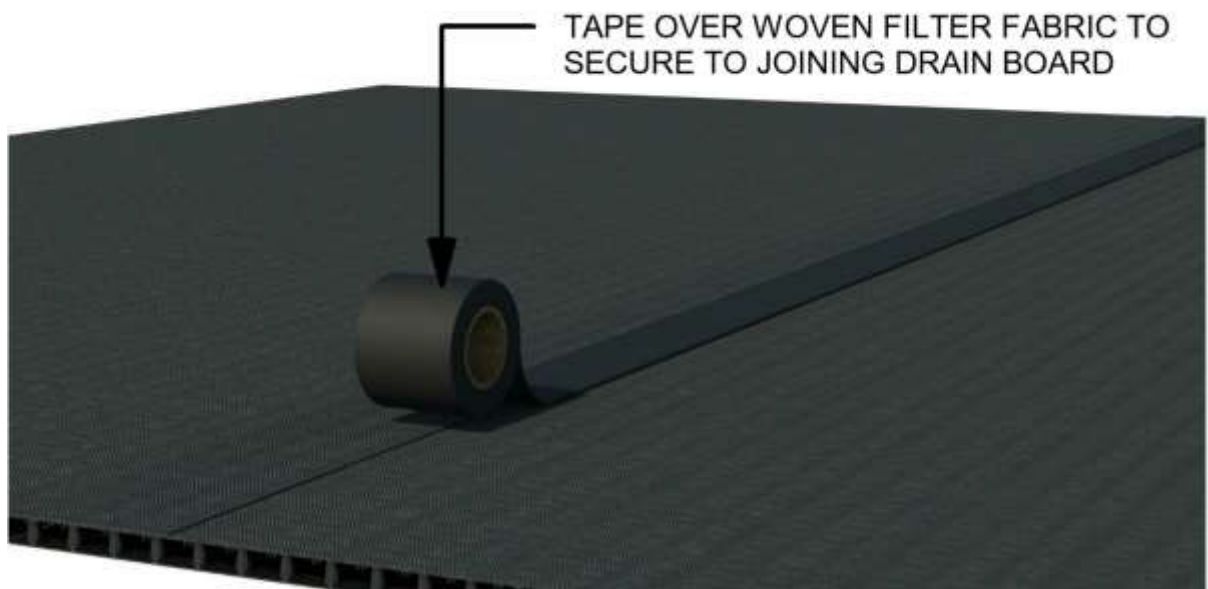


Figure 4 Joining Rolls Step 3 (optional)

2.0 DMX Drain in Green Roof Systems

Green Roofs have been integrated into modern building designs to help reduce the *Heat Island Effect* within a dense city. *Heat Island Effect* is when dark surfaces absorb the heat from the sun and release it back into the air when the sun goes down. Green roofs can also create a higher insulation value for the roof that it is applied to, making the building more efficient and sustainable.

Generally, there are 3 types of green roofs *Extensive*, *Semi-Intensive*, and *Intensive*. Within any of these green roof systems it is necessary to have a drainage layer which will help expel excess water from the roof during rain and snow melt periods.

DMX Drain is the perfect option for Architects and Designers when designing a green roof. With three options available, 5X, 15X or 18X, DMX Drain can provide the subjected green roof with the proper drainage and compression strength required by the project.

2.0.1 Extensive Green Roofs

Extensive green roofs consist of low growing plants that can obstruct the growth of weeds and able to reduce the occurrence of erosion problems. An extensive green roof will have normally 1" to 6" (25mm to 150mm) of growing media for the plants to grow in. Grass, moss, or sedum are great choices for an extensive green roof system as they are low cost and require very little maintenance. If the green roof project is an inverted assembly, it is recommended that a filter fabric be laid over top of the DMX Drain 18X™ to ensure no growing media falls into the drainage core.

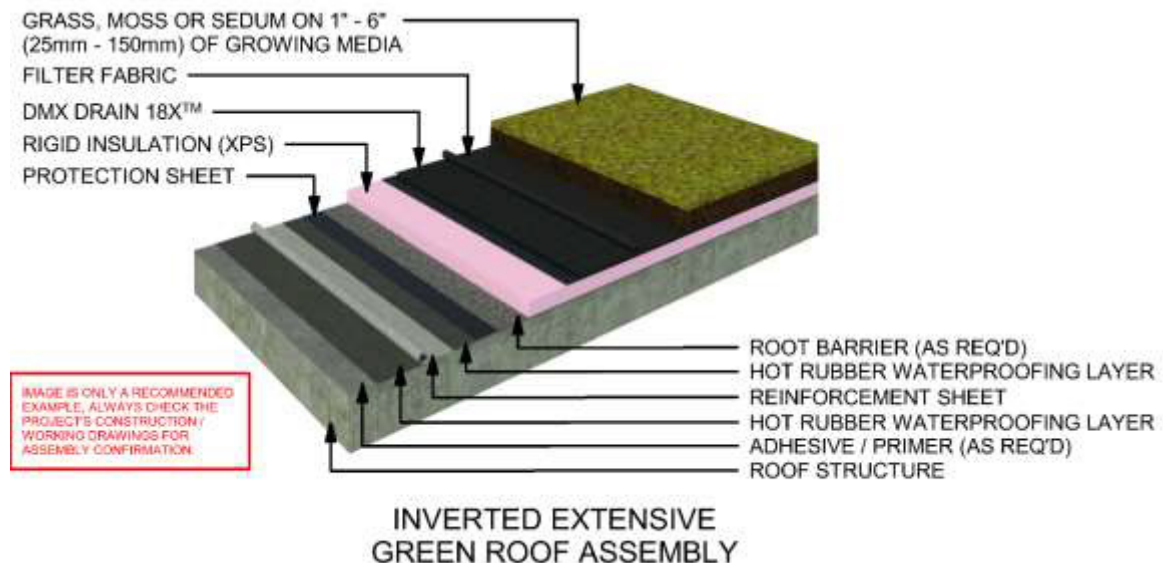


Figure 5 Inverted Extensive Green Roof Assembly

2.0.2 Semi-Intensive Green Roofs

Semi-Intensive green roofs will normally consist of grass, moss, or sedum as well as small plants such as herbs, flowers, and shrubs. Typically, a semi-intensive green roof will consist of a growing media thickness between 6" (150mm) to 12" (300mm). Semi-Intensive green roofs tend to require occasional maintenance.

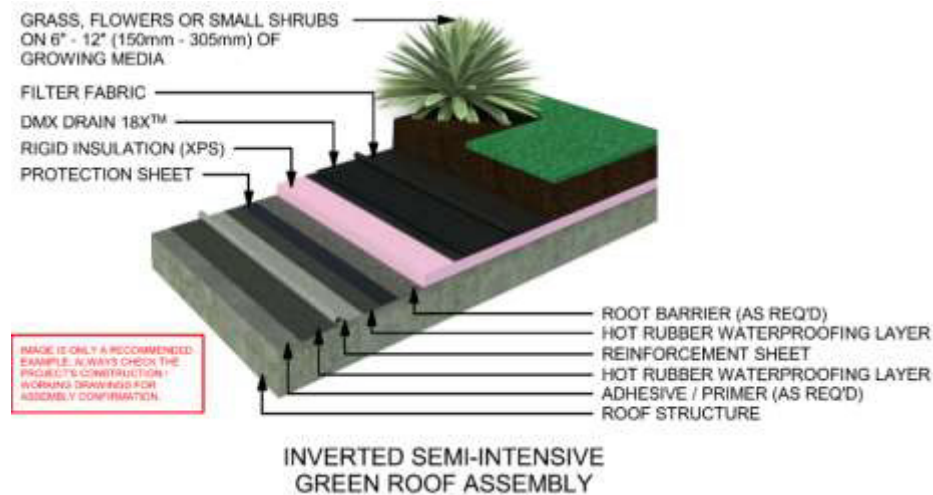


Figure 6 Inverted Semi-Intensive Green Roof Assembly

2.0.3 Intensive Green Roofs

Intensive green roofs will consist of bigger plants such as large shrubs and trees while also providing areas for grass, moss, or sedum. An intensive green roof will usually consist of at least 12" (300mm) of substrate for the plants to grow in. Although intensive green roofs can look ascetically pleasing the require a higher cost and routine maintenance.

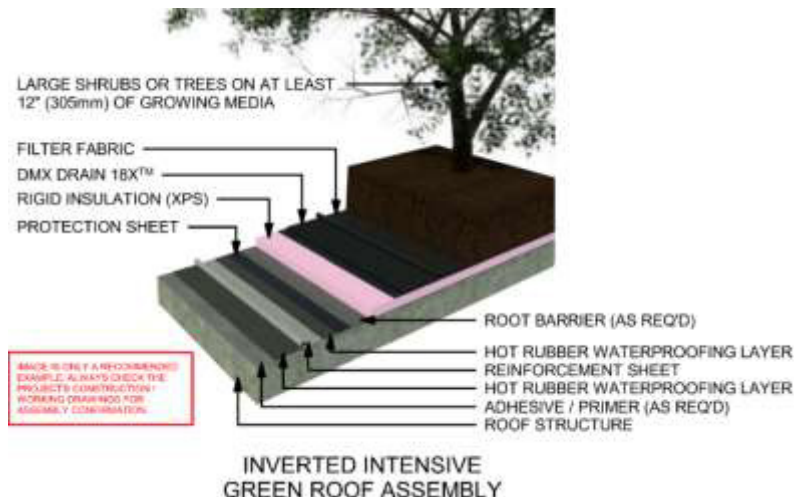


Figure 7 Inverted Intensive Green Roof Assembly

2.1 DMX Drain Around Roof Drains

When installing DMX Drain 18X™ horizontally it is best to start at the lowest elevation in the design. On roof tops the lowest part of the design is typically at the roof drains as roofs are designed to control the flow of water towards the drain. When dealing with drains during the horizontal application of DMX Drain 18X™ follow the steps as required.

Step 1: Roll out DMX Drain 18X™ so it covers the projects drain.

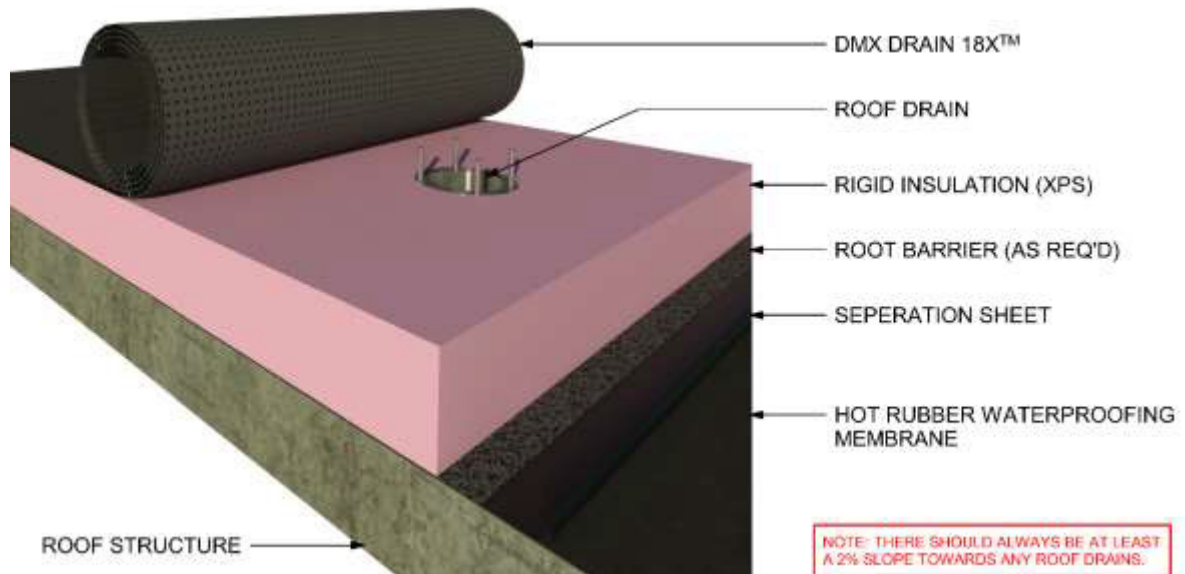


Figure 8 Around Roof Drain Step 1

Step 2: Find and mark where the roof drain is located under the rolled out drain board.

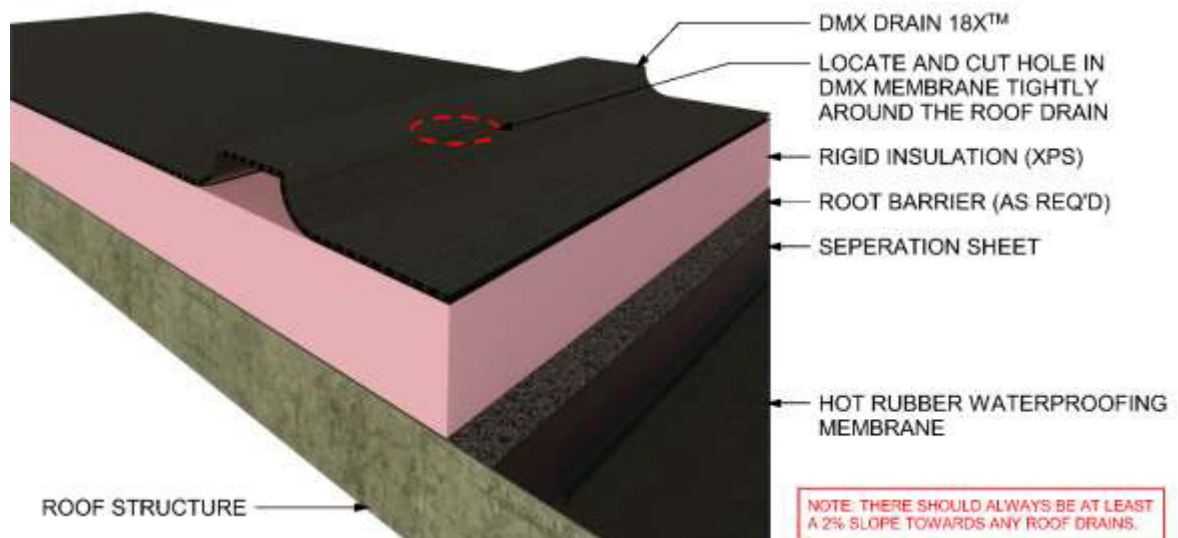


Figure 9 Around Roof Drain Step 2

Step 3: Cut out the required area to reveal the drain that is located underneath the drain board. Make sure you cut the drain board as tightly around the drain as possible to ensure proper water flow into the roof drain.

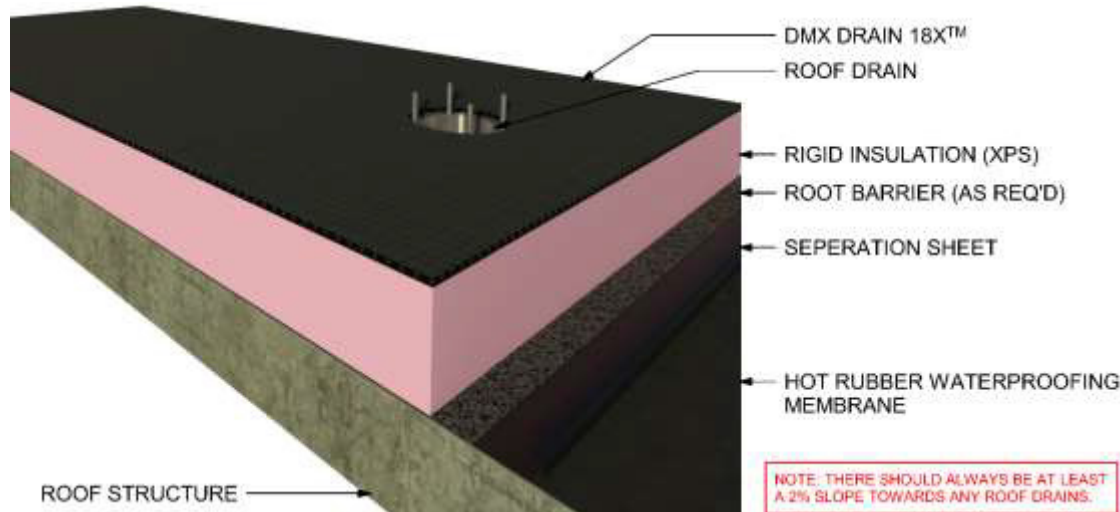


Figure 10 Around Roof Drain Step 3

2.1.1 Vegetation Free Zones Around Roof Drains

It is recommended that there should be a vegetation free zone located around drains within a green roof system, typically consisting of a type of stone ballast. Be informed of any existing by-laws that may apply to green roofs where the project is being constructed. For example, according to the Toronto Municipal Code Chapter 492-9 I (4), "Vegetation free zones shall be provided around all drains."

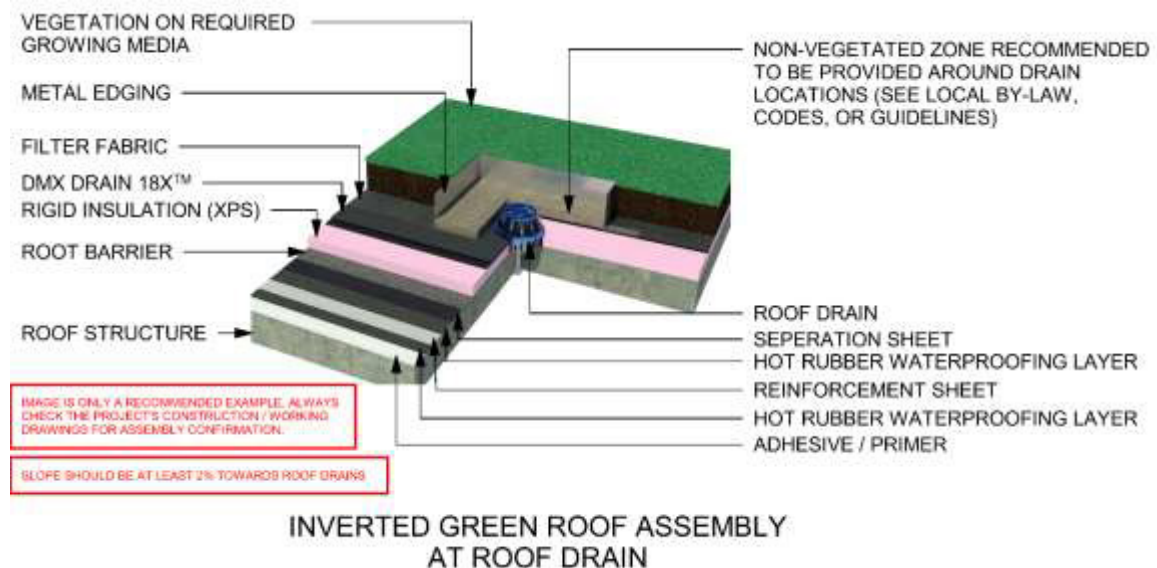
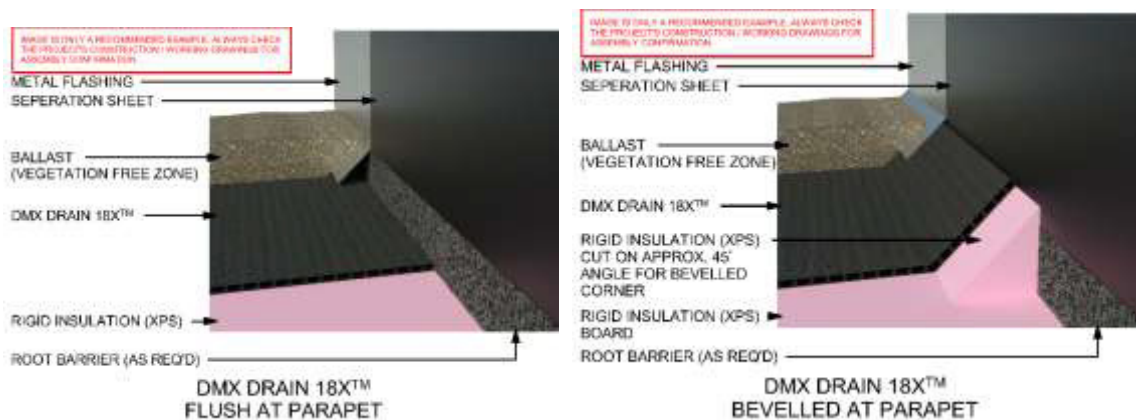


Figure 11 Vegetation Free Zone at Roof Drain

2.2 DMX Drain 18X™ at Green Roof Parapet

The portion of the exterior wall that extends past the top of the roof is known as the parapet. The parapet is there to help prevent people from falling off the roof, while also providing some protection from wind forces that may have an impact on objects that are fixed to the roof. Where DMX Drain 18X™ meets the parapet, there are two methods that can be utilized. These two methods are flush corner or bevelled corner.

The flush corner method is when the drain board is laid flat along the roof structure and where the ends of the drain board meet the parapet, it should be at about a 90° angle (depending on the roof slope angle).



The bevelled corner method is when there is a buildup formed in the corner to form a steeper slope that will help drain any excess water safely away from the parapet. In this case, the DMX Drain shall be place at the top of the corner form and rolled out accordingly.

(Attention: When installing DMX Drain 18X™ be sure to always follow the designer's construction / working drawings)

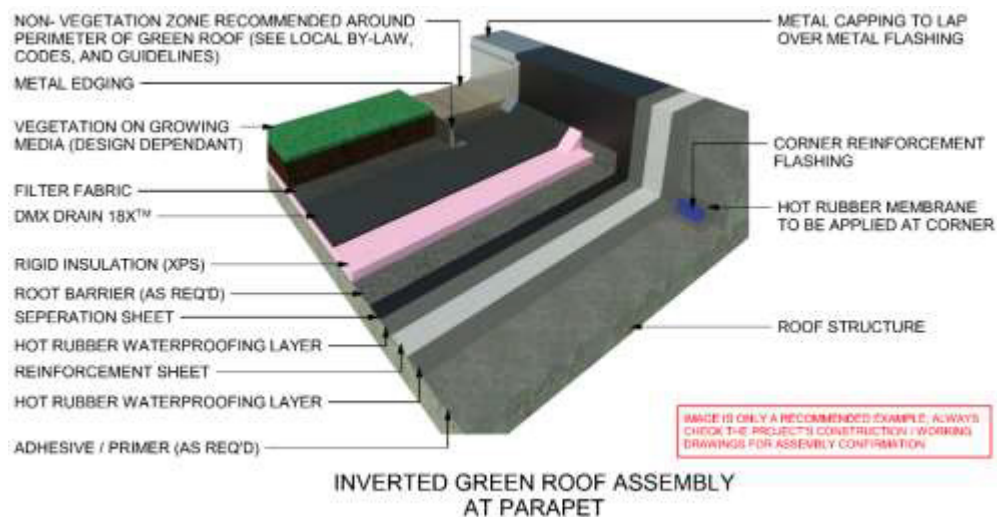


Figure 12 Inverted Green Roof Assembly At Parapet

3.0 Plaza Deck w/ Pedestals on DMX Drain 18X™

Plaza decks are a multi-purpose system within a building envelope. This system provides a floor surface and a roof surface at the same time. Since it is acting as a roof structure it should be inherent that this surface must be properly waterproofed. By adding DMX Drain 18X™ into the waterproofing layer an efficient drainage and protective layer will be formed.

Follow these steps when installing DMX Drain 18X™ within a plaza deck system (unless design documentation states otherwise):

Step 1: Once waterproofing has been put in place start rolling out DMX Drain 18X™ from the lowest point of the surface, or where the drain is located.

Step 2: Cut around drain or any other protrusions from the surface beneath

Step 3: Continue to cover the surface with DMX Drain 18X™

Step 4: Once the DMX Drain 18X™ has been installed properly, pedestals can be installed directly on top of the membrane.

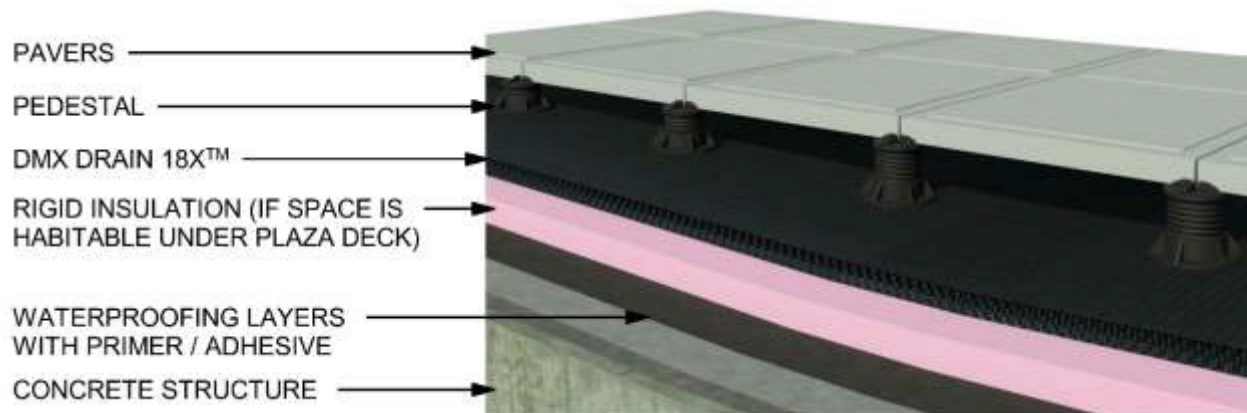


Figure 13 Pedestals on DMX Drain 18X™

(Attention: When using pedestals on an insulated roof space be sure to contact insulation manufacture for psi restrictions that may apply to their product. Follow the project's construction / drawings for drain board placement as some systems may be designed differently.)

4.0 Asphalt, Concrete, & Pavers on 18X™

Asphalt, concrete, and pavers are all permeable, thus making it imperative that there is proper drainage located beneath to prevent future shifting in the flexible surfaces.

4.1 Pavers on DMX Drain 18X™

Pavers are a flexible surface as they consist of individual materials that are joined together with sand. Since it is a flexible surface, it is important to include a drainage layer above the insulation, that way when water passes through the bedding layer it will be channeled through the drain board and towards the drainage location.

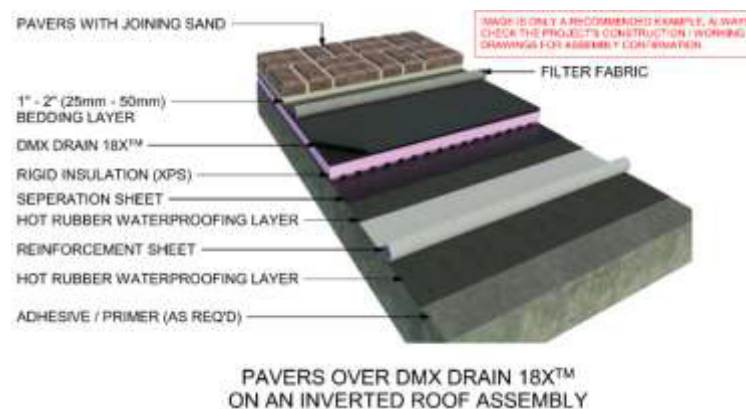


Figure 14 Pavers on DMX Drain 18X™

4.1.1 Pavers at Parapet

When DMX Drain 18X™ is being used underneath pavers it is important to keep debris from entering the drainage core. It is recommended that a filter fabric be laid under the bedding layer on top of the drain board and where the bedding layer comes in junction with the parapet, wrap the filter fabric around the edge to prevent sand or from dropping into the drainage layer.

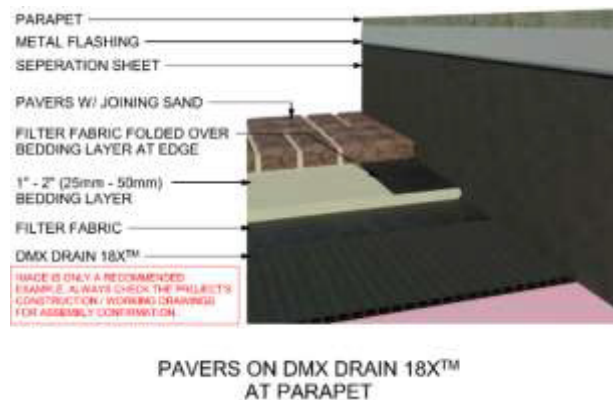


Figure 15 Pavers At Parapet

4.1.2 Pavers in Junction with Green Space

When pavers are used within the same system as green space it is inevitable that the two areas will come into junction with each other. Typically, metal edging will be used and laid first to separate the areas that require different finishes, if necessary, the metal edging may be secured to the DMX Drain 18X™ woven fabric using tape. In some green roof assemblies, a built-up drainage layer of ballast will be required under the recommended 1" – 2" (25mm-50mm) bedding layer. The thickness of this drainage layers thickness will depend on the design of the green roof.

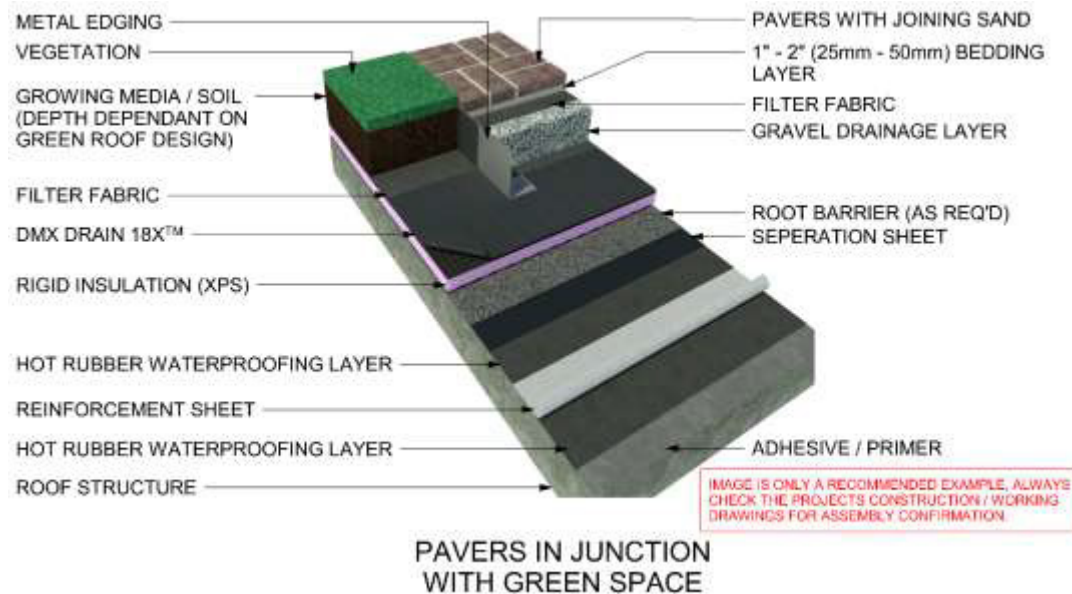


Figure 16 Pavers in Junction with Green Roof

4.2 Concrete

Concrete may be poured over the DMX Drain 18X™ this is typically done for roof tops or podium slabs where high traffic may occur. The insulation layer would only be required if the space below is habitable. Since concrete is porous, adding DMX Drain 18X™ to the assembly means that any water that passes through the concrete topping layer may be channelled through the drain board towards the drain, helping to maintain the integrity of the waterproofing system.

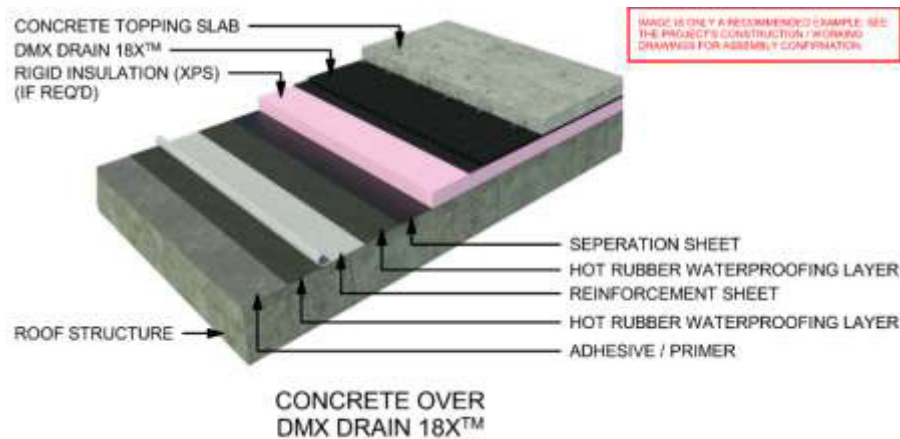


Figure 17 Concrete Over DMX Drain 18X™

4.3 Asphalt

Asphalt is a permeable surface; therefore, it allows water to pass through. When water passes through the asphalt, it requires proper drainage to limit any shifting that may occur with water moving underneath it, weakening the materials beneath which are supporting the asphalt. By incorporating DMX Drain 18X™ between the drainage course and subgrade, water that has passed through is then able to be properly directed away from underneath the asphalt area, helping to protect the integrity of the asphalt surface.

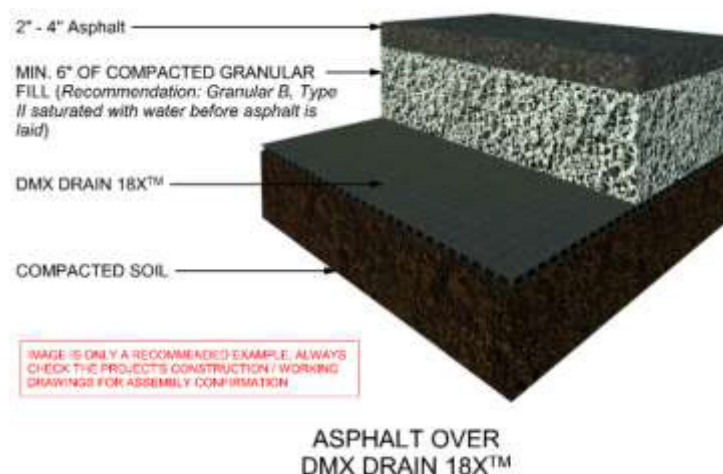


Figure 18 Asphalt Over DMX Drain 18X™

5.0 Insulated Concrete Slabs

A precaution that can be taken to add a protective layer (capillary break) to the concrete slab in basements and slab-on-grade construction is by adding a DMX Drain 18X™ into the construction assembly. Adding a drain board between the insulation and gravel drainage layer will help prevent any ingress of water or moisture through the concrete slab. Follow these recommended steps or proceed differently if previous experience has shown a sustainable installation.

Step 1: Once the drain board is ready to be laid, assess the projects building footprint to determine the most efficient starting point.

Step 2: Place drain board roll at the determined starting point (*Step: 1*) and begin to unroll DMX Drain 18X™. When installing under basement slabs, always ensure that the filter fabric is facing towards the gravel drainage layer.

Step 3: Place the next roll of DMX Drain 18X™, beside the roll previously laid, and start to unroll.

Step 4: Once the drain board has been rolled into position, push the board up against the one next to it and seal the joint with an approved sealing tape. This will help keep the drain boards from shifting during the construction process.

Step 5: Continue with the process until the required area has been covered.

(Note: When having to cut the drain board to maneuver around any drainage pipes try to cut DMX Drain 18X™ in a way that will fit tight.)

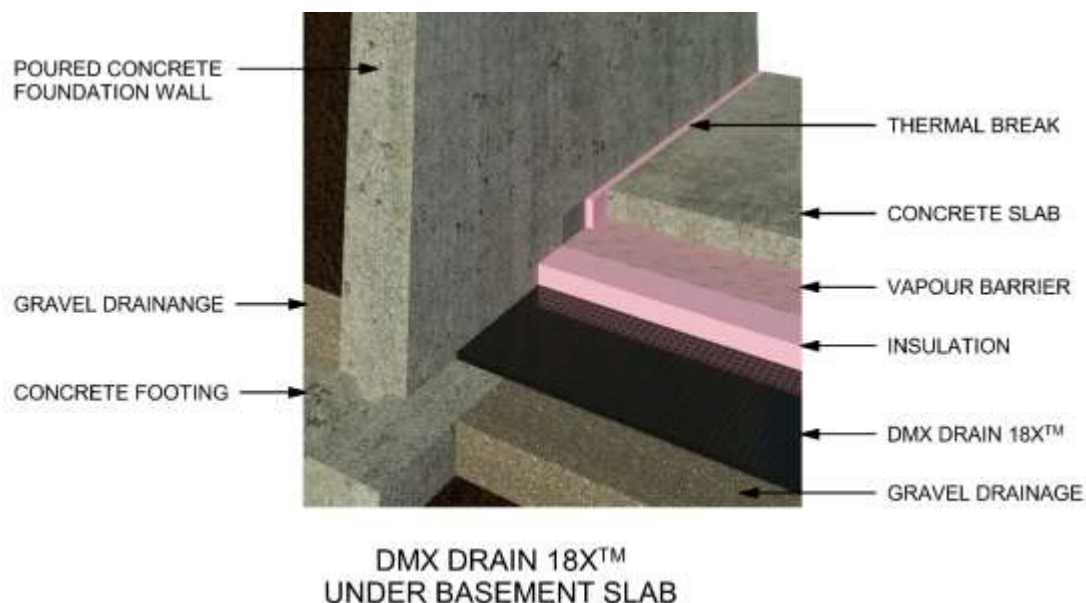


Figure 19 DMX Drain 18X™ Under Basement Slab

6.0 General

This section applies to general procedures that should be undertaken before, during and after the membrane has been installed.

6.1 Clean up & Inspection

When the job has been completed, inspect the roof or horizontal work surface, and ensure all materials were installed properly. If there are any excess materials or tools left around the site remove them before moving on.

6.2 Covering Horizontal Drain with Gravel

When putting drainage gravel over top of DMX Drain 18X™ membrane follow the steps below along with local code practices.

Step 1: Cover the drainage system required by Code with approved granular material using good engineering and construction practices.

Step 2: Be careful when installing to ensure no damage is done to DMX Drain 18X™ membrane.

6.3 Health and Safety

When installing DMX Drain 18X™ we recommend that the following safety equipment be worn during the installation process:

- ☐ Hard Hat
- ☐ Safety Boots
- ☐ Gloves
- ☐ Safety Glasses

6.4 Limitations

We suggest for productive installations that DMX Drain 18X™ should not be installed in temperatures below 14°F (-10)

7.0 Table of Figures

Figure 1 DMX Drain 18X Sample	0
Figure 2 Joining Rolls Step 1.....	3
Figure 3 Joining Rolls Step 2.....	4
Figure 4 Joining Rolls Step 3 (optional).....	4
Figure 5 Inverted Extensive Green Roof Assembly	5
Figure 6 Inverted Semi-Intensive Green Roof Assembly	6
Figure 7 Inverted Intensive Green Roof Assembly.....	6
Figure 8 Around Roof Drain Step 1	7
Figure 9 Around Roof Drain Step 2	7
Figure 10 Around Roof Drain Step 3	8
Figure 11 Vegetation Free Zone at Roof Drain	8
Figure 12 Inverted Green Roof Assembly At Parapet	9
Figure 13 Pedestals on DMX Drain 18X.....	10
Figure 14 Pavers on DMX Drain 18X™	11
Figure 15 Pavers At Parapet.....	11
Figure 16 Pavers In Junction With Green Roof	12
Figure 17 Concrete Over DMX Drain 18X.....	13
Figure 18 Asphalt Over DMX Drain 18X	13
Figure 19 DMX Drain 18X Under Basement Slab	14