

DECAST



OPTIMIZE
LAND USE



LARGE STORAGE
CAPABILITIES



FAST & EASY
INSTALLATION



ENGINEERED FOR
HEAVY LOADS

I-STORM SWM SYSTEM



I-STORM BROCHURE
DOWNLOAD



DECAST is a leading Canadian infrastructure manufacturer. We specialize in high-pressure water pipelines, bridges, storm and sanitary systems, precast structures, and utility tunnels.

Our two manufacturing facilities in Stouffville and Utopia Ontario span 702,000 sq. ft., providing 100% controlled indoor conditions. With over 700 employees, including highly skilled engineers, operators, machinists and welders, we ensure top-quality products.

DECAST is a key contributor to local economic development, supporting a comprehensive local supply chain and creating over 3,500 indirect jobs. Since 1957, we've continually expanded our facilities, operations, and workforce.



DECASTLTD.COM

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I-STORM SWM SYSTEM

I-STORM is a modular precast stormwater management system designed for maximization of underground storage and above ground land use.

The unique method of mechanical connection between tank components and robust design of its units allows the system to support various above ground applications, including but not limited to: public parks, sports fields, roads, and parking lots.

Visit our website to access the I-STORM calculator tool and get started on your design with a preliminary facility layout.

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FEATURES

- Modular system that can fit any footprint
- Easily accessible for inspections and maintenance
- Extended service life – 100+ years under chloride exposure
- Robust underground storage alternative to plastic and other concrete systems
- Allows up to 4m of cover above the facility
- Designed to the CHBDC to support public parks, sports fields, roads, parking lots, and other above ground applications
- Cast-in-place floor sections between precast units allow for the formation of low-flow channels, sumps, and infiltration openings





VAUGHAN NW RESIDENCES

As land values continue to increase across the province, many developers and municipalities are trying to find ways to gain more useable land in their communities. The I-STORM system allows for the dual-use of land for a combination of above and below ground applications.

Traditionally, subdivisions are planned with a separate park and stormwater management (open pond) block; moving the functions of the open pond underground allows the space above the facility to be used as parkland for the community, as is the case with this facility.

LOCATION:

Vaughan, ON

PRODUCT TYPE:

I-STORM SWM – 3m

PRODUCT SCOPE:

The unique footprint required for SWM on this property made using the I-STORM system an easy choice due to its modularity. A removable top slab was incorporated for future access of a small skid steer to expedite the sediment cleanout process. This facility provides a storage volume of 1,260m³.



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WATERDOWN FIRE & POLICE

The City of Hamilton's new fire and police station in the growing community of Waterdown required an effective stormwater management solution to ensure that the station achieved its public service objectives of improved access to public safety services and faster emergency response times.

The project consultant selected I-STORM as the product for the stormwater detention facility based on its demonstrated durability and robust design. This was the best solution for a public service application, as it will maintain reliable operations for many decades to come. A parking lot is located directly above the facility, demonstrating an effective dual-use of the property.

LOCATION:

Waterdown, ON

PRODUCT TYPE:

I-STORM SWM – 1.5m

PRODUCT SCOPE:

In order to meet the storage requirements and mitigate high groundwater conditions, this tank was wrapped with an impermeable liner. The facility provides 535m³ of storage.





TH WARDEN

One of the largest I-STORM facilities built to date is located in Markham and serves multiple functions for a 18.56 ha drainage area within the TH Warden (Berczy Glen) development: quality control, erosion control, quantity control, and temperature mitigation treatment.

The facility incorporates many special features, such as a sump near the tank inlet to direct the accumulation of sediment, weir walls to separate the forebay and aftbay sections of the facility, and a subdrain network underneath the tank to assist with groundwater drawdown during full maintenance operations.

LOCATION:

Markham, ON

PRODUCT TYPE:

I-STORM SWM – 3.0m

PRODUCT SCOPE:

Various reinforcement designs were incorporated due to variable earth cover (between 1.50 – 2.53m). Seven standard maintenance holes and two removable top slabs make for easy access and can accommodate larger cleanout equipment if necessary. The facility spans 1.5 acres and provides 18,353 m³ of water storage – more than seven Olympic swimming pools. The above ground lands will be used as open park space for the new community.





571 WELHAM RD

The owner of this property required adequate stormwater solutions, as well as a reservoir for temporary storage of used fire water in case of an incident inside the manufacturing facility being built on the property.

The I-STORM system was a perfect choice for this project due to its modular nature, which allowed these facilities to fit within the property limits without sacrificing storage volume.

LOCATION:

Barrie, ON

PRODUCT TYPE:

I-STORM SWM – 1.5m and 3m

PRODUCT SCOPE:

Three I-STORM facilities were installed on this property – two for stormwater management and the third for runoff from fire suppression. Due to potential contaminants in runoff from the facility, all three tanks were made watertight by means of an externally applied impermeable barrier.

Tank 1 provided 580m³ of storage space and Tank 2 provided 200m³, for a combined total of 780m³ of stormwater management volume.

Tank 3 provided 1,028m³ for fire suppression runoff.



665 TAUNTON ROAD EAST

This small residential development needed an efficient precast stormwater runoff solution. The areas available for stormwater management were very limited, so one of the facilities needed to be placed directly underneath the main road leading into the development.

The I-STORM design is ideal for this situation, and the volume required fit well within the parameters of a 1.5m tall tank. This was the first I-STORM installation in Ontario.

LOCATION:

Whitby, ON

PRODUCT TYPE:

I-STORM SWM – 1.5m

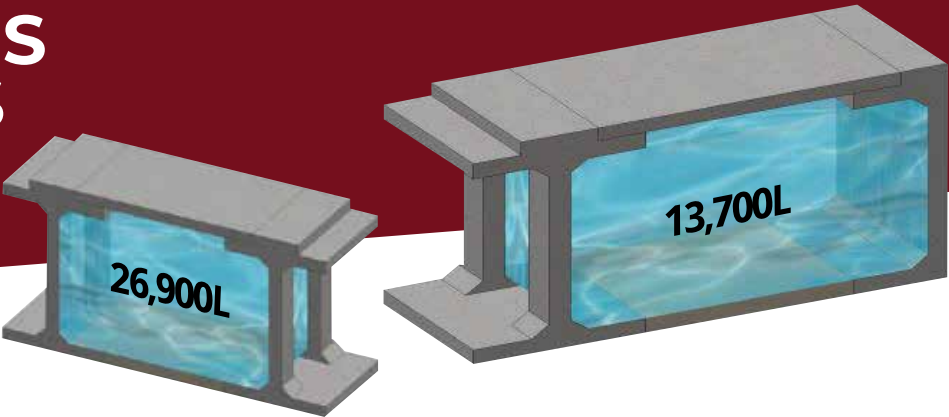
PRODUCT SCOPE:

This facility was a small, simple structure that was able to meet the structural loading requirements, as well as the volume and control requirements for Stormwater Management. It had a single inlet, outlet and access point, providing a modest storage volume of 107m³.

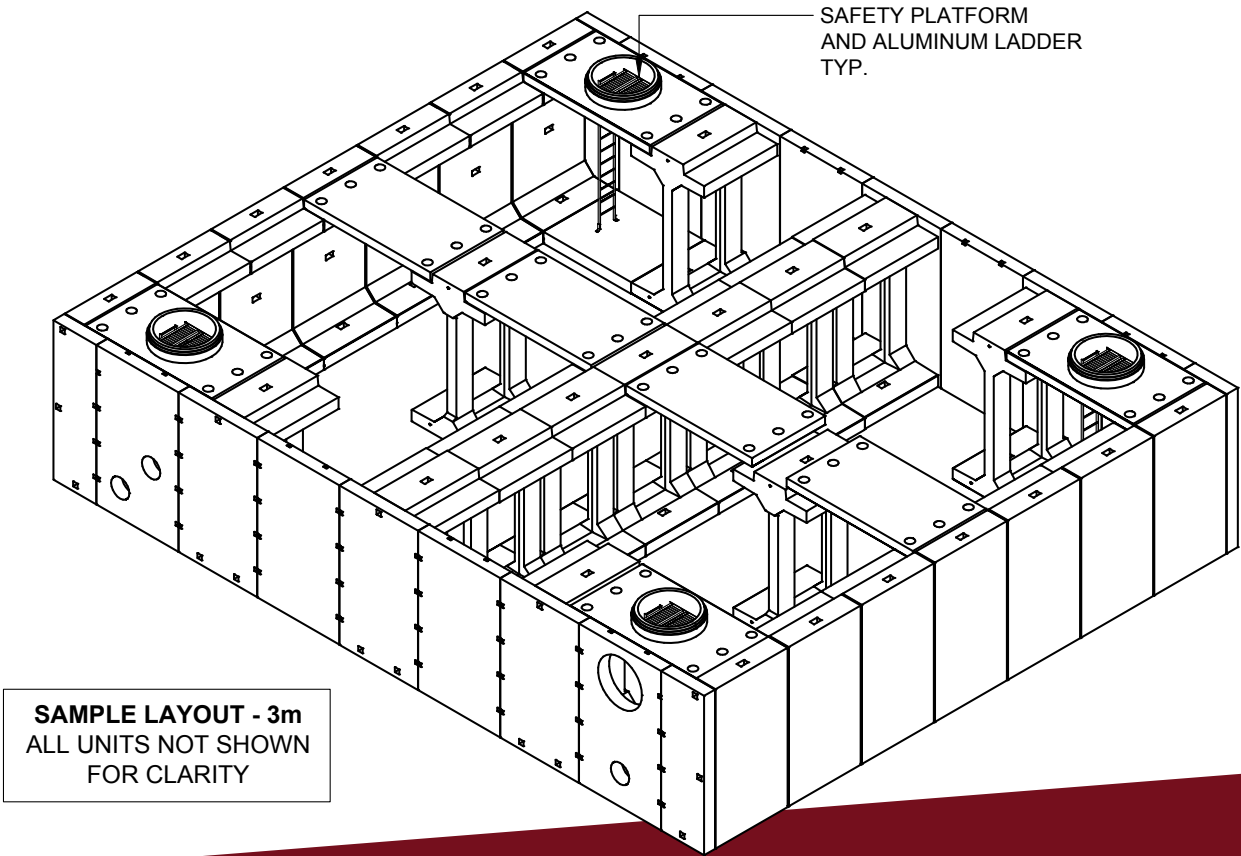




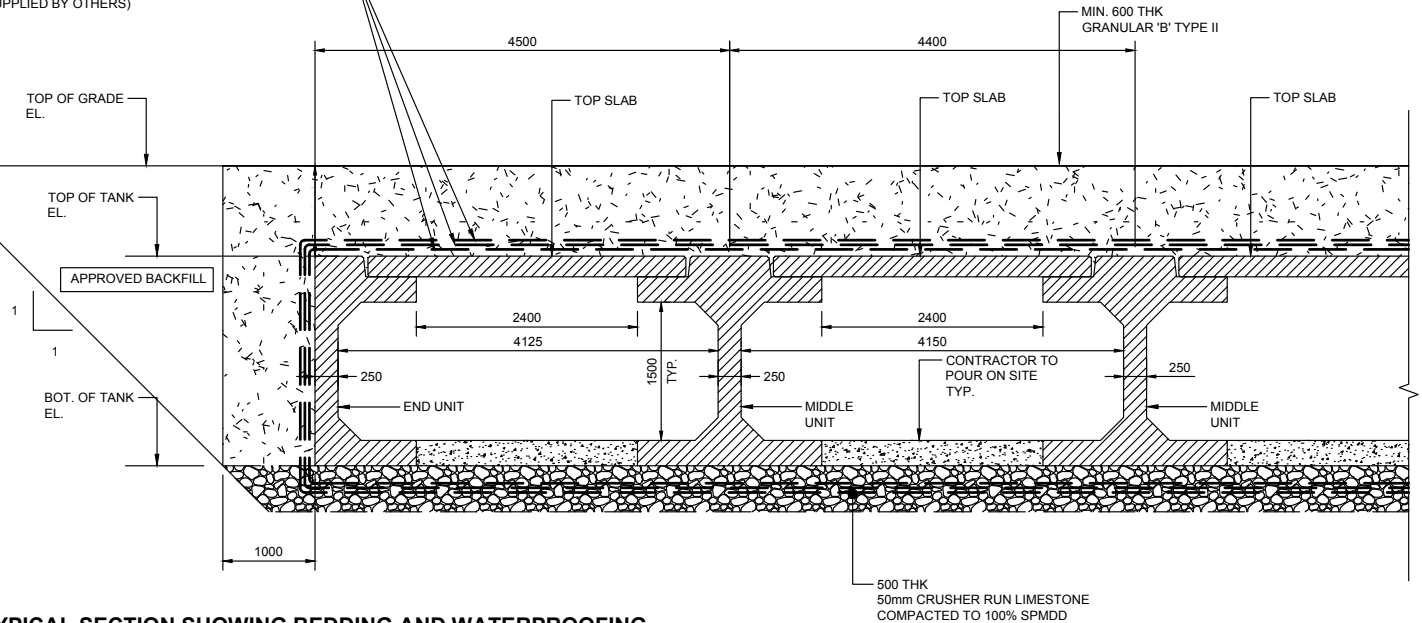
DIMENSIONS & VOLUMES



INSIDE HEIGHT (m)	OUTSIDE HEIGHT (m)	VOLUME			
		CHAMBER CONFIGURATION	L/CHAMBER	L/m	L/m2
1.5	2.275	Mid Unit to Mid Unit	14,000	7,000	1,590
		End Unit to Mid Unit	13,700	6,850	1,520
2.0	2.775	Mid Unit to Mid Unit	18,330	9,165	2,083
		End Unit to Mid Unit	17,900	8,950	1,989
3.0	3.775	Mid Unit to Mid Unit	26,900	13,450	3,050
		End Unit to Mid Unit	26,300	13,150	2,920



IMPERMEABLE LINER SANDWICHED BY
NONWOVEN GEOTEXTILE ALL AROUND TANK FOR
WATERTIGHTNESS, IF REQUIRED
(SUPPLIED BY OTHERS)



**TYPICAL SECTION SHOWING BEDDING AND WATERPROOFING
(1.5 m STRUCTURE SHOWN)**

SCALE 1:50



ADDITIONAL INFORMATION

Visit our website or contact our team to get access to third party reports from various consultants and agencies on the following topics:

- A study of socio-economic factors comparing open ponds and dual-use underground stormwater management facilities, demonstrating the community engagement advantages of active recreational spaces above such facilities
- Design and engineering considerations for underground stormwater management facilities, including groundwater interaction, outlet design, conservation authority input, lifecycle costs as they compare to traditional aboveground ponds, etc.
- Discussions on the ecological benefits of underground stormwater management facilities, such as limiting debris in the stormwater system, significant reduction of thermal impacts on downstream habitats, etc.
- A University of Toronto - backed analysis of the I-STORM concrete mix design, shown through modeling to achieve a 100+ year lifecycle under conservative chloride exposure scenarios





SERVICES

- DECAST Engineering team involved throughout the design process, providing various facility configurations and layout options
- Final shop drawings stamped by Professional Engineer
- Contractors provided with installation procedures prior to product installation, as well as on-site installation support
- DECAST Field Services team available to install ancillary items, such as ladders and safety platforms inside the facility
- Regular installation inspections and Engineer's Certificate of Conformance provided upon completion of tank installation

DECAST GUARANTEE

While the transfer of ownership of a SWM facility (whereby the local municipality assumes full responsibility of operations and maintenance from the developer) typically occurs within several years of the facility's construction, DECAST Ltd. will stand by the I-STORM product throughout its lifecycle. Inspectors should contact DECAST Field Services if they require any assistance during inspections or maintenance at (888) 835-7940.

