

## MASSIVE RAINSTORM GIVES RISE TO ENHANCED EMERGENCY RESPONSE PROTOCOLS FOR SUNNYBROOK

Unusually heavy summer rain and over two dozen flooding incident calls prompted swift action and changes to emergency response protocol at Toronto's Sunnybrook Health Sciences Centre.



### INTRODUCTION

Toronto's Sunnybrook Health Sciences Centre is one of Canada's largest hospitals and is fully affiliated with the University of Toronto.

Its 10,000 staff, physicians and volunteers provide compassionate diagnosis and treatment during approximately 1.2 million patient visits each year while over 200 Sunnybrook scientists and clinical researchers perform groundbreaking research that is helping to 'discover ways to treat the untreatable' in Canada and around the world.

When an unexpected 125 mm of rain fell on the city of Toronto within three hours on July 8th, 2013, the infrastructure at the hospital's Bayview campus was overwhelmed causing flooding and water infiltration in multiple locations across the urban campus.

### IMPACTS

Building integrity was compromised repeatedly during the sudden torrential downpour, allowing water to penetrate numerous building envelopes and causing a back-up in the hospital's storm water drainage system. In one evening, the storm resulted in flooding and water leakage in over 25 separate locations. Code Brown (water leakage) response teams were immediately dispatched to the impacted areas. They worked feverishly throughout the night to stop the leaks, eliminate the presence of water wherever possible and reduce any further threat of injury or damage to property.

According to Laura Berndt, Sunnybrook's Manager of Energy and Sustainability, *"We believe the recent roofing renewal projects completed between 2011–2013, that replaced 22 failed roofing systems across the campus, prevented much more serious flooding of patient areas during the storm."*

The majority of the impacted areas were in basements and corridors, however, some areas such as elevators and washrooms had more of an impact on hospital operations. Despite the volume and intensity of rain over the three hours, there was a minimal amount of water damage throughout the buildings and the hospital did not have to cancel any scheduled procedures or clinics the following day.

## KEY VULNERABILITIES

Flooding throughout the city did impede the ability of some Sunnybrook staff to access the campus due to road closures and transit delays experienced by the Toronto Transit Commission, provider of public transit in Toronto. As a result, some hospital areas did experience staffing challenges.

Perhaps the biggest challenge faced by the Facilities Department during this unprecedented natural calamity was the sheer number of locations that were affected. In addition, the capacity of the response teams, and the flood mitigation supplies such as spill kits and scrubbers, were limited.

Additional help from the Security Department was summoned to assist in water containment in some areas while the response teams focused on pumping water from the most critical areas first.

## RECOVERY

In the weeks following the flooding, the hospital's emergency response team re-evaluated its policies and procedures around Code Brown responses.

With an eye to improving its flood response capabilities and to be poised to deliver the most effective loss prevention and risk mitigation services, it was determined that more flood mitigation supplies needed to be readily available, and that more staff needed to be fully trained in response protocol, including the use of all response equipment.

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*When a massive rainstorm hit Toronto on the evening of July 8, 2013, over two dozen building leaks were reported at Sunnybrook Health Sciences Centre. Teams worked throughout the night to pump out the water and prevent further damage.*

## PLANNING FOR RESILIENCY

In response to the findings, Sunnybrook has now strategically placed 14 mobile spill response kits throughout basement corridors and large yellow signage posted on doors clearly indicates the locations of all kits.

Plant Operation & Maintenance Department employees have also increased the frequency of preventive cleaning and inspections for all storm drain catch basins on the campus.

On a much broader scale, the hospital has also completed further building envelope upgrades including roofing membranes, foundations and drainage improvements to help reduce the potential for future water penetration incidents such as those that wreaked havoc the evening of July 8th, 2013.

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