WATER CONSERVATION TOOLBOX

CASE STUDY

University of Minnesota Water Reuse Program

PROJECT DESCRIPTION

In order to meet the increasing demand for on-campus living, the University of Minnesota (U of M) opened the doors of its newest residence hall in 2013. This new facility, the 17th Avenue Residence Hall, houses up to 600 students and contains many green features. These include, but are not limited to, a green roof, carpets composed of recycled materials, energy efficient technologies, and interior fixtures which were sourced locally[1]. One of the most innovative green features is the U of M's first water reuse system, which supplies water to the residence hall's 200 toilets.

The water reuse system collects runoff from both the roof and ground surface in a 35,000 gallon underground concrete vault. Sediment and other debris are screened or settled out in the vault and from there the water is carried through a series of pipes to two 1,000 gallon storage tanks located in the basement of the residence hall. The water is treated using an ozone water treatment system supplied by the Water Control Corporation of Ramsey, MN. As a final step before the water is distributed to the toilets and urinals, a blue dye is added to the water to remind residents and visitors that the water is not potable.

During dry periods the amount of available stormwater runoff may be insufficient for meeting the water demands of the bathrooms. The U of M has addressed this problem by installing a separate pipe for city water, separated from the reuse water using a reduced pressure zone valve. When needed, the Residence Hall can pull water from this system to obtain the required volume of water.

[1]Frank, Jossi. (2013). *U of M's new residence hall honors student requests*. Finance & Commerce. http://finance-commerce.com/2013/08/u-of-ms-new-residence-hall-honors-student-requests/?dmcss=login

PROGRAMS

PROJECT OWNER + LOCATION
University of Minnesota

PROJECT OWNER / DESIGNER
University of Minnesota
Water Control Corporation
TKDA
Mackey Mitchell Architects
Mortenson Construction

TIMELINE
Start date: 2009
End date: 2013

Image source: HKGi

HOW WAS THE PUBLIC INVOLVED AND HOW HAVE THEY RESPONDED?

The building is supported by students' fees, therefore student involvement was very important during the planning process. When the advisory committee was established, a student was on the board to represent the students' interests.

Image source: CDMSmith

DID THE PROJECT CHANGE WATER USAGE?

The project is still in the early stages and the amount of water saved hasn't yet been quantified.

HAVE THERE BEEN ANY ISSUES? HOW WERE THEY RESOLVED?

One of the biggest unanticipated issues has been the amount and rate of sediment and other materials that are accumulating in the concrete vault. The catch basin on the ground surface allows these materials to enter the storage vault, which has led to more maintenance issues than initially anticipated.

HAS THE PROJECT BEEN A SUCCESS? WHAT ARE THE FUTURE STEPS?

The project has been very successful. The students and staff have responded positively to the project and the system appears to be working well. Graduate students are currently working to determine the optimal water treatment level.

PROGRAMS

The Metropolitan Council's mission is to foster efficient and economic growth for a prosperous metropolitan region.

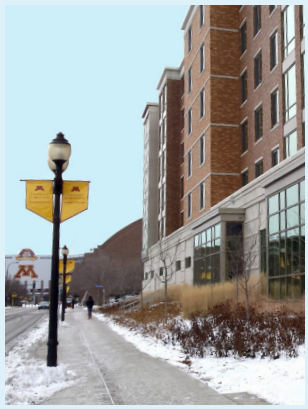

Image source: HKGi

Metropolitan Council
390 Robert Street North
Saint Paul, MN 55101
Main: 651.602.1000
TTY: 651.291.0904
Public Information: 651.602.1140
public.info@metc.state.mn.us

www.metrocouncil.org

METROPOLITAN
COUNCIL