

1 | WATER SYSTEM IMPACT ANALYSIS

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2013 FEB 20 A 10:11

date February 15, 2013

to Town of Wellesley Planning Board

from Sasaki Associates

project name Babson College - First Year Residence Hall

project # 26208.00

subject Water System Impact Analysis

This memorandum summarizes the analysis of project-generated impacts on the municipal water system.

WATER DEMAND

The expected potable water demand at the proposed building is assumed to be 10% greater than the expected total daily sanitary sewer flow rates which will account for water consumption within the building. Sewer flow rates were calculated using the Massachusetts Department of Environmental Protection Sewer System Extension and Connection Permit Program regulations 314 CMR 7.15: Calculation of Flows. With an expected sewer flow of 16,048 gpd (See Tab 2), water demand is projected to be 17,653 gallons per day or 12.3 gpm. While this demand calculated per 314 CMR 7.15, actual demand is likely to be less given the incorporation of low flow fixtures into the base design of the project.

WATER SUPPLY

A hydrant flow test was conducted on the water service located in Babson College Drive on November 20, 2012. The location of the hydrant is approximately 135' from the proposed building. The results of the test indicated a static pressure of 125 psi, a residual pressure of 110 psi while flowing 1,163 gpm. The pressure in the municipal water system is supplemented by a domestic water booster pump and a fire pump located in Park Manor Central, a residence hall that is located adjacent to the project site. See attached letter from Rist-Frost-Shumway Engineering dated December 6, 2012 for additional information on the Hydrant Flow Test.

Domestic and fire service to the building will be provided via a wet tap off of the existing 12" main in Babson College Drive. See Drawing C4-1 for the proposed location of the water connection. The service line will be split just outside of the building to provide two separate feeds for domestic and fire protection water. See Tab 6 for a description of the fire protection system within the building.

Based on the above-listed pressures and flow rates and discussions with Bill Shaughnessy, Water & Sewer Superintendent, the municipal water system has sufficient capacity to meet the flow demands of the proposed project without causing flow characteristics of the existing system to fall below the standards adopted by the Board of Public Works.

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December 6, 2012
RFS 12-7147

Tala Klinch, A.I.A. LEED AP
Sasaki Associates
64 Pleasant Street
Watertown, MA 02472

Re: Hydrant Flow Test
Babson College – First Year Residence Hall
Wellesley, Massachusetts

MECHANICAL

ELECTRICAL

PLUMBING

FIRE PROTECTION

ELECOMMUNICATIONS

STRUCTURAL

CIVIL

COMMISSIONING

Dear Tala:

A hydrant flow test was conducted near the proposed site along Babson College Drive on the Babson College campus on November 20, 2012. The flowing hydrant was located adjacent to the proposed site. The static hydrant was located adjacent to the Park Manor South building. The data that will be used for evaluation was gathered from a 1:30 p.m. test and the results are as follows:

Static Pressure	125 PSI
Residual Pressure.....	110 PSI
Flow	1163 GPM
Estimated Quantity available at 20 PSI	3325 GPM
Coefficient of Hydrant Outlet.....	0.9
Inside Diameter of Hydrant Outlet	2-1/2"

If there are any further questions or comments regarding this information, please do not hesitate to call.

Sincerely,

RIST-FROST-SHUMWAY ENGINEERING, P.C.

Alan Gray
Plumbing/Fire Protection Designer

ADG:alb
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cc: Zachary Chrisco

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