

# The Winsor School

Location | Boston, Massachusetts

Function | Performance + Wellness Wing

Size | 79,000 gsf

Levels | Five

Construction | May 2013 - Sept 2015

Delivery Method | Design - Bid - Build

+

Architect | William Rawn Associates, Inc.

Lighting Design | Horton Lees Brodgen

MEP | Rist-Frost-Shumway Engineering, PC

Structure | LeMessurier Consultants

Contractor | Lee Kennedy Co Inc.



Rendered Three Story Performance Hall

## Architecture

This new wing will add a modern feel to the classic campus, with mostly aluminum cladding and an extensive amount of glazing. On other locations on the façade, limestone and calcium silicate units will be used for a warm and light atmosphere. The linear expansion creates a geometrical aspect that allows the architecture to seemingly float on air.

## Lighting + Electrical

The lighting system incorporates fairly high end finishes with sources that range from LEDs and linear fluorescents to compact fluorescents or halogen fixtures. They will be controlled mainly by occupancy sensors and sometimes by daylight sensors as well. The building will run on 480/277 3PH, 4W voltage to fuel the buildings electrical systems. At certain locations the building voltage is transformed to 208/120V by use of step-down transformers for power receptacles and certain mechanical equipment. The electrical system is backed up by a 500 kW/600 VA diesel generator for life safety and fire control.

## Mechanical

The building is serviced by 8 air handling units. The AHUs in the mechanical rooms service various corridors and classroom spaces on level 1, each supplying 19500, 15250 or 26000 CFM. Individual air handling units service the locker rooms (4800 CFM), squash courts (6500 CFM) and the stage. Two air handling units are servicing the gym as well, supplying 12000 CFM each. Building heating and cooling is provided through hot water and chilled water coils within the AHUs and powered through natural gas lines. The majority of the general exhaust fans that service the building are on the roof.

## Structural

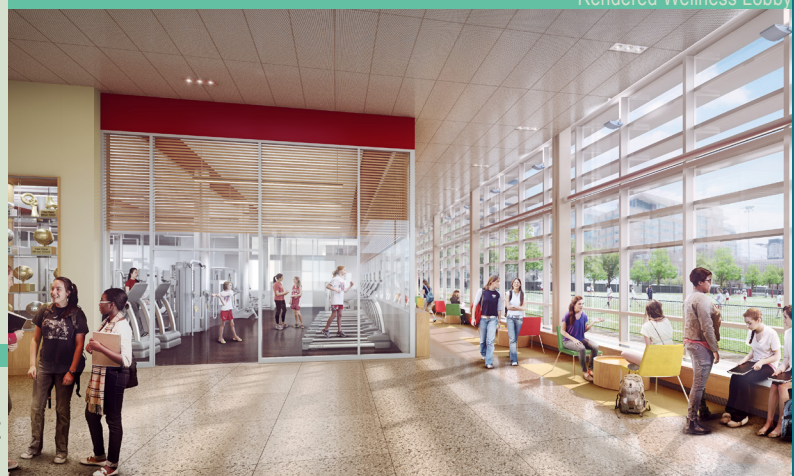
The structure is a composite beam system. Lightweight concrete of 3000 psi is implemented with metal decking that doesn't exceed 3 inches. The steel is high strength, low alloy steel ASTM A992 or ASTM A588. The column sizes range from around W8x31 to W12x152. There is also Carbon Rectangular and Square HSS Tubes Grade B and Round HSS Pipe Grade C. Four 12" CMU shear walls as well as shear and moment connections of the steel are used to combat loading and resist lateral forces.



Rendered Dance Rehearsal Classroom



Rendered Wellness Lobby



Maggie Golden | Lighting + Electrical

Advisor - Dr Richard Mistrick | Renders provided by architect

<https://www.engr.psu.edu/ae/thesis/portfolios/2015/mlg292/index.html>