

# 2015 Exhibition of School Planning and Architecture

## Duxbury Middle/High School New Construction

Duxbury Public Schools/Town of Duxbury  
Duxbury, Massachusetts

# Duxbury Middle/High School



Photo: Brett Beyer





Duxbury Middle/High School Site Plan

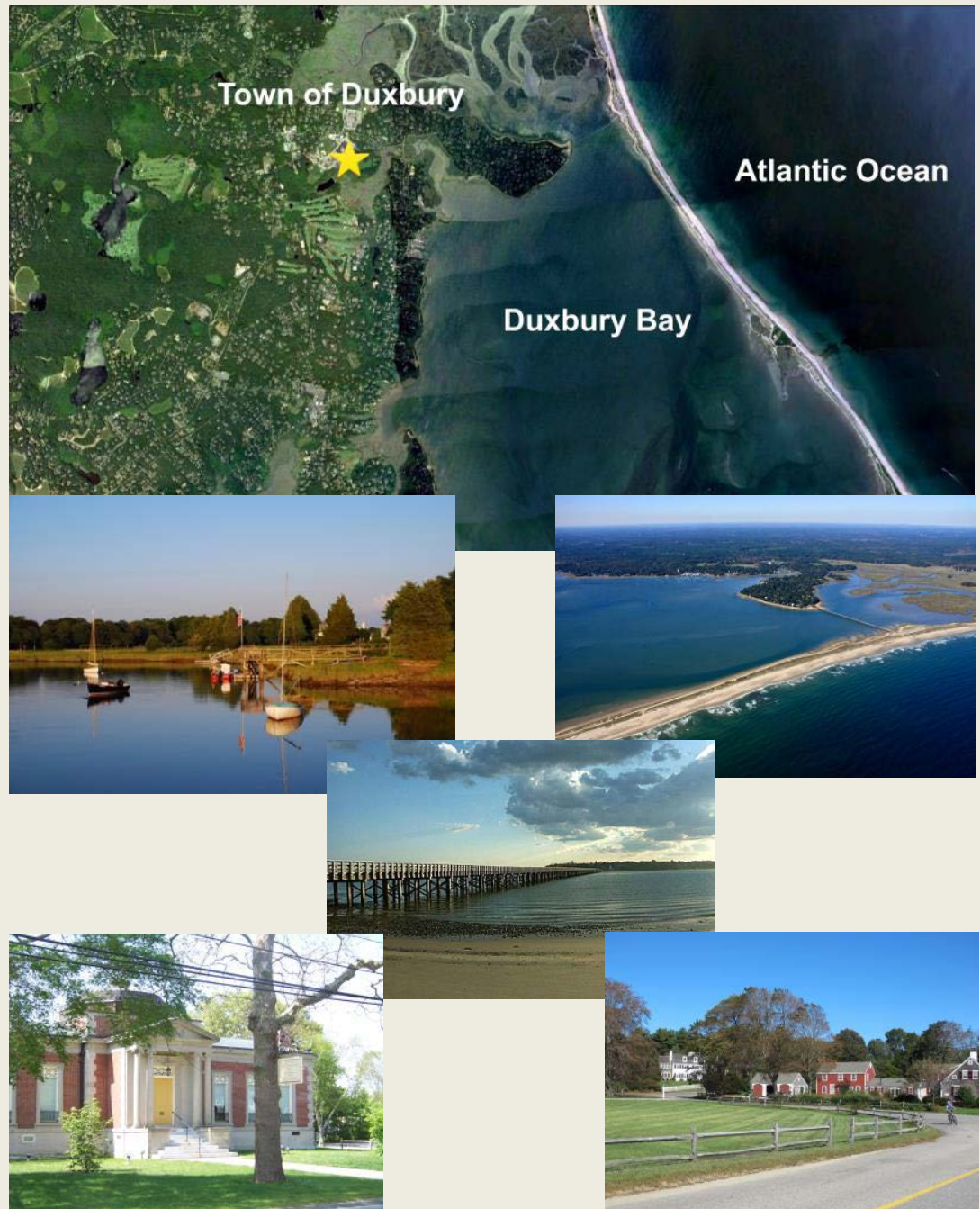
## Context

### Community Environment:

The Duxbury Co-Located Middle/High School project was an opportunity to celebrate not only a singular New England seaside community rich in culture and history, but also a forward-looking community's commitment to education.

Duxbury is committed to educating all of its children together from Pre-K thru Grade 12. This unique campus provides the children to learn together as they grow from grades 3-5 at the Alden School, and again as they move to the Middle and High School.

Tremendous opportunity for scientific exploration exists with the sites proximity to ponds, salt marshes, the Bluefish River, the bay and the beach. This diverse range of natural conditions provides an exemplary "open air lab". The expansion of public field provides for additional active and passive recreation for these of students and the public at large.





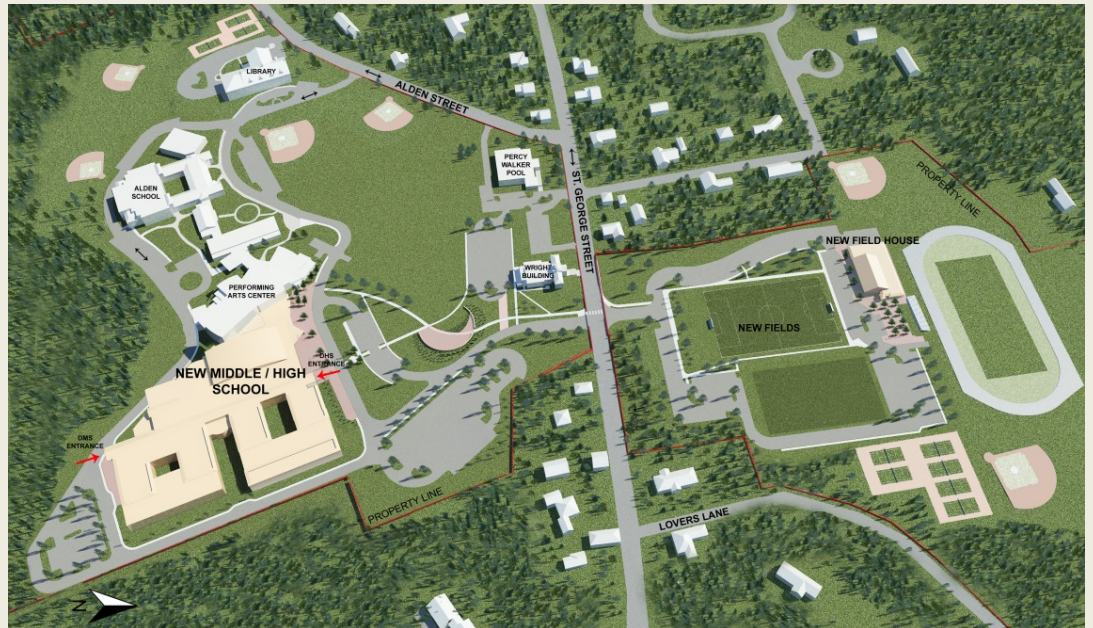
## Planning Process

### Community Environment:

The design of the Campus provides for children in school to share amenities such as the Duxbury Free Library, the Town Pool, the Duxbury Rural and Historical Society, Student Union as well as the Duxbury Performing Arts Center (PAC) with its' community.

These adjacencies as well as the proximity of the Campus to the South Shore Conservatory of Music, The Duxbury Art Complex Museum and the Alden House Museum, all within a short walking distance, easily offers students cultural opportunities. The key element in unifying the campus became the development of the Co-Located Middle/High School linked to the Elementary School by the Performing Arts Center (PAC).

The site was pre-selected based on the findings of a previously completed feasibility study. The team developed a scheme which was based on the study, but also saw an opportunity for a single phase new building project which was simpler, less expensive, and less disruptive to the educational process.





## Library

### Learning Environment:

The library was viewed to be the crown jewel of the community wing; available to all students at all grade levels. This secular temple represents the repository of knowledge and culture as well as a portal into the ever shrinking world at large. The library location affords views of the iconic Myles Standish Monument. This view towards the town's past combined with the technological access to the world around them ideally fulfills the requirements of the secular temple.

Photos: Brett Beyer

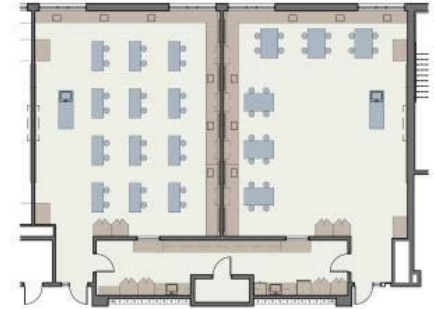


## Classroom & Science

### Learning Environment:

Classrooms are designed to provide maximum flexibility and efficiency. All classrooms enjoy natural day lighting and 90%+ face either north or south. Such orientation provides ideal illumination provided by north light or south light which can be controlled and optimized through the use of brise soleil on the exterior and light shelves on the interior to maximize daylight harvesting and providing all classrooms with the optimal classroom environment. The learning environments further enhanced through the use of a displacement ventilation system.

All science rooms are designed with subject specific requirements. Utilities are provided along the perimeter walls while movable tables provide the flexibility of multiple configurations to suite any specific learning situation. Each two science rooms share a common prep area which maximizes efficiency and avoids unnecessary redundancy.



## Organizational Diagram

### Physical Environment:

The project is composed of four distinct parts, the first of which is the spine or concourse which provides the armature upon which all other parts are arranged. This concourse is the street on which the other three components, High School Middle School and Community Wing are located and have their own distinct addresses. The design allows for the possibility of adding space in the future as well as the ability to modify existing classrooms and other Learning Spaces in the academic wings on all three floors.

The existing Performing Arts Center (PAC) and its support spaces (including the Elementary School Cafeteria and Kitchen) will serve as a hinge connecting to the “Public” wing of the new Middle-High School.

The Performing Arts Center, Library, Cafeterias and Athletic facilities as well as learning spaces for The Arts and Distance Learning are accessible in a controlled and convenient way, which insures the security of the rest of the facility during public events, Life Long Learning and any number of other community uses.





## Concourse Floor Concept

### Physical Environment:

The Concourse (Spine) is the realization of Main Street. The main design intentions were to provide naturally lit open and airy space from which the various component parts can be accessed as their own distinct addresses.

The Concourse runs nearly parallel to the barrier beach which is so much a part of the town's identity. It was therefore natural to celebrate that fact with an artistic interpretation in the form of an informative map of the beach executed in a terrazzo floor.

We see the bay side (community wing) as representative of culture, history, and tradition secured by the safe harbor. The classroom wings are on the ocean side representative of exploration, adventure, and the unknown.

Photos: Brett Beyer







## Phasing Diagrams

The site was pre-selected based on the findings of a previously completed feasibility study. The study suggested that a project be undertaken that would develop new middle school facilities behind the existing middle school. Upon completion of those facilities middle school students would be moved in to the new building and the old middle school would be demolished. A new high school then would be built in the area of the demolished middle school and connected to the new middle school. The High School would then be demolished providing for expanded athletic facilities.

### Existing Campus

Includes the Town Library, Elementary School, Performing Arts Center, Middle School, Pool, Student Union and High School (across street from larger campus).



### Phase One

Construct new middle / high school building with connection to the Performing Arts Center. Also construct new Field House adjacent to existing high school.



### Phase Two

Occupy new school then demolish existing middle and high school buildings. Complete construction of new parking and site amenities on main campus and athletic facilities on former high school site.



## Contextual and Massing Studies

The site was pre-selected based on the findings of Several massing studies were done to explore how the building would orient itself on campus. As demonstrated in Fig 1 and Fig. 2 the removal of the old Middle School not only opened the existing fields to provide for more active and passive recreation, but also removed the visual encroachment of the Middle School to the Wright Building (foreground).



Fig 1



Fig 2



Arial View



## Elevation Development and Studies

Numerous exterior design variations for the school facades were presented. The commitment to provide an appropriate and contextual aesthetic to a setting that is vibrant but also fragile for the design of the campus in the scale and orientation of its component parts was critical. Hand sketches were the foundation for the development of the three schemes. All three schemes include three pediments that are representative of the town's traditional village center, which included the church, town hall and original high school.

After review by the building committee and the town's design review board it was unanimously agreed that our initial concept (image to the right) was the appropriate character for the building as it represented a building of its time and was contextually appropriate within the campus as such.



Initial Concept





1st Floor Plan





## 2<sup>nd</sup> Floor Plan





# Duxbury Middle / High School Project Details

<b>Project Name</b>	Duxbury Middle High School
<b>City</b>	Duxbury
<b>State</b>	Massachusetts
<b>District Name</b>	Duxbury Public Schools
<b>Supt/President</b>	Dr. Benedict Tantilio III, Superintendent
<b>Occupancy Date</b>	September 2014
<b>Grades Housed</b>	6-12
<b>Capacity(Students)</b>	1,750
<b>Site Size (acres)</b>	20
<b>Gross Area (sq. ft.)</b>	326,000
<b>Per Occupant(pupil)</b>	186
<b>gross/net please indicate</b>	1.48
<b>Design and Build?</b>	Yes
<b>If yes, Total Cost:</b>	104,000,000
<b>Includes:</b>	
<b>If no,</b>	
<b>Site Development:</b>	
<b>Building Construction:</b>	
<b>Fixed Equipment:</b>	
<b>Other:</b>	
<b>Total:</b>	



US NEWS & WORLD REPORT  
2013 BEST HIGH SCHOOLS

**DUXBURY HIGH SCHOOL**

196th in the country - out of 22,000 schools  
10th in Massachusetts