

March 4, 2014



where great schools begin

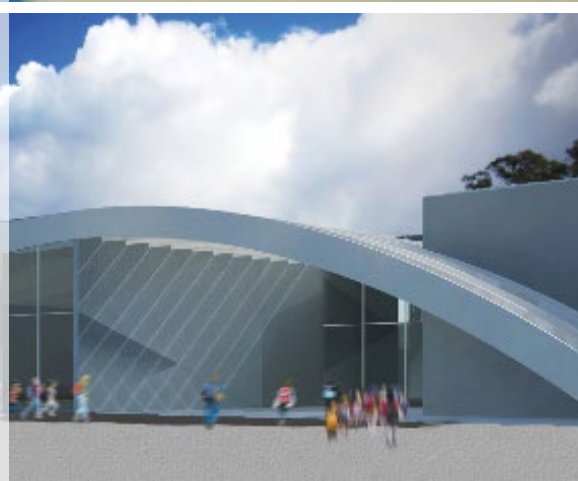
Virginia Chapter

**Virginia Chapter**

The Council of Educational Facility  
Planners International



Virginia Educational Facility Planners



**2013 Student Design  
Competition**



where great schools begin

Virginia Chapter





# Purpose of the Competition

- Expand the diversity of attendees at the annual conference by encouraging participation at the university level
- Student opportunities: educational facility planning, collaboration with design professionals, presentation skills, career development
- Add a “student perspective” component to the annual conference



# Competition Overview

- Students at Virginia Tech and Hampton University competed independently
- 3 classes total – 2 classes at Virginia Tech and 1 class at Hampton University

## Awards per Each Class

- First Place - \$500 award + conference expenses (present design)
- Second Place - \$200 award + conference expenses (present design)
- Two Honorable Mentions – certificate

## Mentoring Teams

- **Virginia Tech** – Stafford County Public Schools, RRMM Architects, Grimm + Parker Architects
- **Hampton University** – Newport News Public Schools, RRMM Architects, Moseley Architects

# Competition Overview

- Design a STEM Elementary School for 800 students
- Sites selected by Universities
- 3<sup>rd</sup> or 4<sup>th</sup> year architecture students, 6 weeks to complete
- Program organized around spaces that promote a holistically healthy student - Leadership, Nutrition, Fitness, and Discovery with formal and informal learning spaces



LEADERSHIP



NUTRITION



FITNESS



DISCOVERY



# Judging Criteria

- Creativity
- Learning Enhancement Potential
- Educational Functionality
- Presentation Quality
- Sustainability



# First Place – Carolyn Thoenen



Virginia Tech Class 1



**DYNAMIC LEARNING**  
PRICES FORK ELEMENTARY SCHOOL

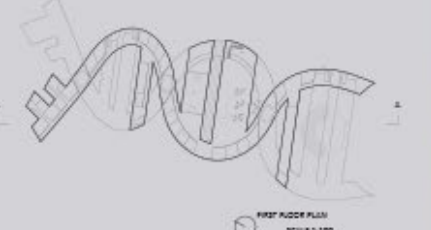
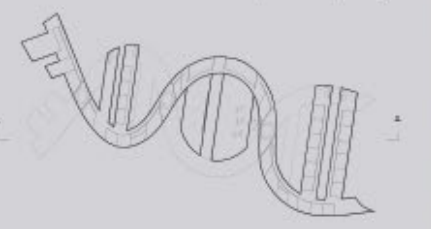
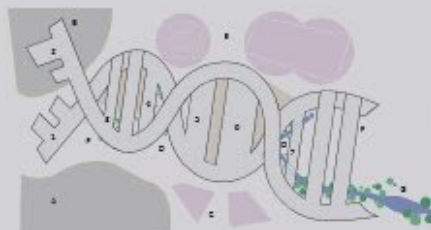
CLASSROOMS, PLAYGROUNDS, FIELDS.  
THE CONCEPT OF A SCHOOL STRUGGLES TO BREAK AWAY FROM THIS TYPICAL ORGANIZATION.  
SUBSEQUENTLY, THE STUDENTS OF TODAY HAVE GROWN TO SEE THE ENCLOSURE OF A CLASSROOM AS THEIR ONLY "LEARNING" SPACE.

THIS PROJECT SEEKS TO BREAK THAT STIGMA.  
THE BUILDING ENCLOSURE OF THE SCHOOL ENTWINES ITSELF AROUND AND THROUGH THE SITE, CREATING AMPLE OPPORTUNITIES  
FOR LEARNING WITHIN AND OUTSIDE OF ITS WALLS. TEACHERS CAN AT ANY POINT BREAK FROM THE TYPICAL CLASSROOM LECTURE,  
WALK ACROSS A HALLWAY, AND TAKE THE KIDS OUTSIDE TO STUDY THE PLANT LIFE OR WATER FLOW. STUDENTS GET REAL-WORLD  
INTERACTIONS WITH LIFE AROUND THEM, AND COME TO REALIZE THAT LEARNING CAN TAKE PLACE ANYWHERE, NOT JUST WITHIN THE  
CONFINES OF A SCHOOL. USING THE PART OF DNA, THIS SCHOOL PROMOTES CONSTANT, DYNAMIC LEARNING THROUGH  
INTERCONNECTED SPACES OF ACTIVITY, EXPLORATION, COMMUNITY, AND CREATIVITY.

SET AND FROM FIELDS  
COMMUNITY INTERACTIONS  
SITE RELATIONSHIP  
HEALTH AND WELFARE  
DISCOVERY AND PLAY  
SCIENCE AND BIRTH FIELDS










A: Vehicular Circulation  
B: Bus Circulation  
C: Community Place  
D: Earth Place  
E: Playgrounds  
F: Life/Health Gardens  
G: Multifunctional Bath  
H: Landscaping  
I: Community Space  
J: Living Wing  
K: Gym  
L: Cafeteria  
M: Admin Wing

SECOND FLOOR PLAN  
SCALE 1/8" = 1'-0"

FIRST FLOOR PLAN  
SCALE 1/8" = 1'-0"





Jury Comments:

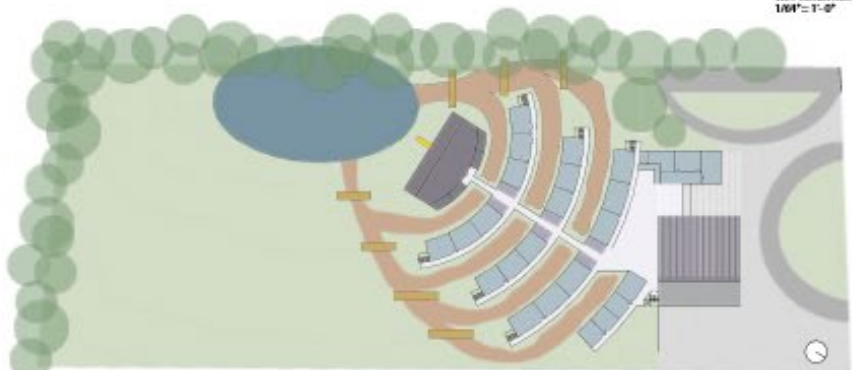
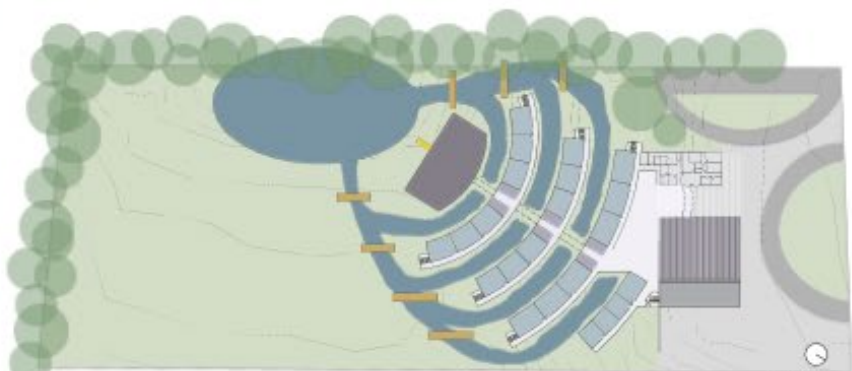
- good connectivity between the different learning environments
- promotes interaction between grade levels with dynamic building/site section



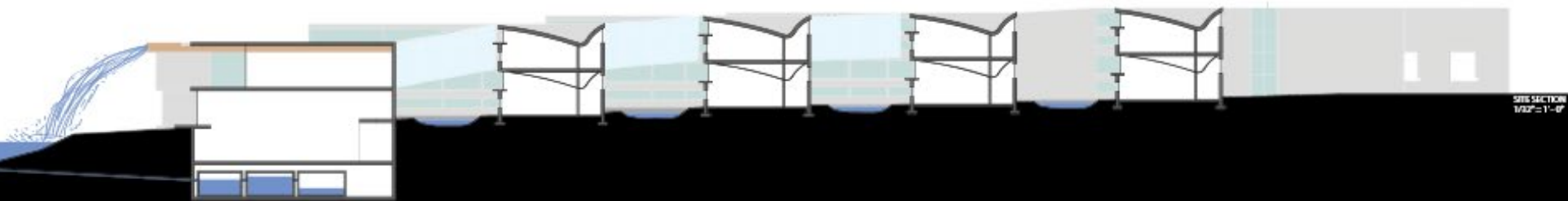


# Second Place— Brandon Holcombe

Virginia Tech Class 1



Learning From Water  
To understand water is to understand cycles, natural forces, and to an extent, living organisms. Learning from water gives children the opportunity to see a broader scope of our world. Children begin to understand cycles that rain, but are not seen. They develop an awareness and understanding of natural forces that affect the world around them. Instead of seeing the rain, they understand why it is coming. Instead of seeing flowing water, they understand why the water is flowing that way. The children begin to understand that without water, life would cease to exist. As the children progress through the years of elementary school, they will experience their senses deepening as the water provides life for plants and organisms. They will begin to understand the patterns that rain creates. They will learn the various ways that we use water as a resource and how we can recycle it. They will understand that it is not something to take for granted and they will learn to celebrate water.



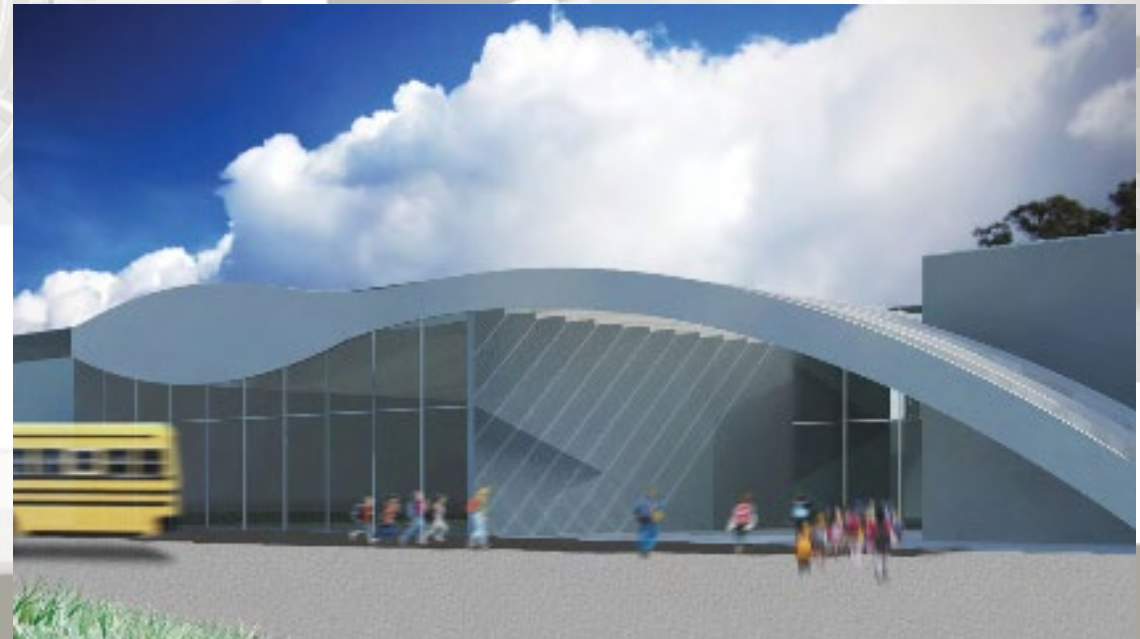


# Second Place— Brandon Holcombe

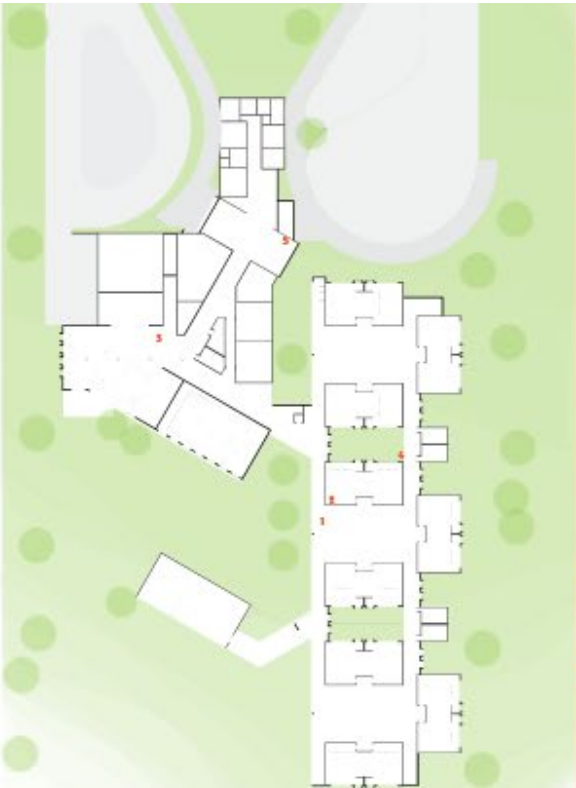
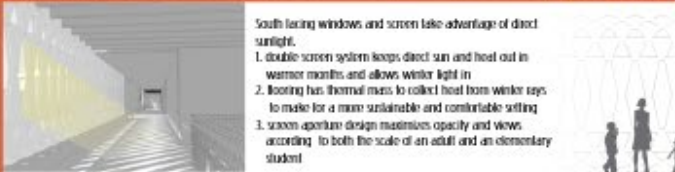
Virginia Tech Class 1

## Jury Comments:

- the flow of storm water is clearly expressed as it illustrates life cycles and natural forces
- water becomes a vehicle for learning throughout the school



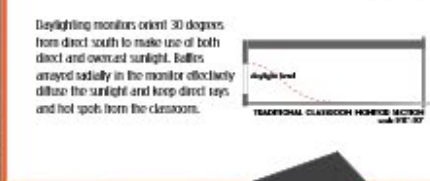
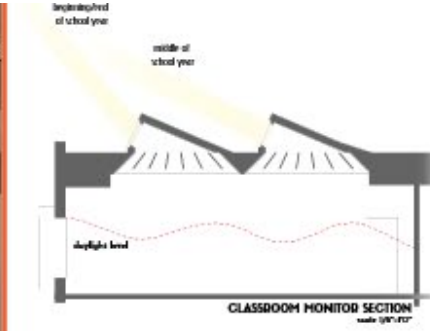




Jury Comments:

- with positive effects on vision, memory, and morale, daylighting is a design and learning tool

SITE + FIRST FLOOR PLAN SCALE 1/48"=1'-0"





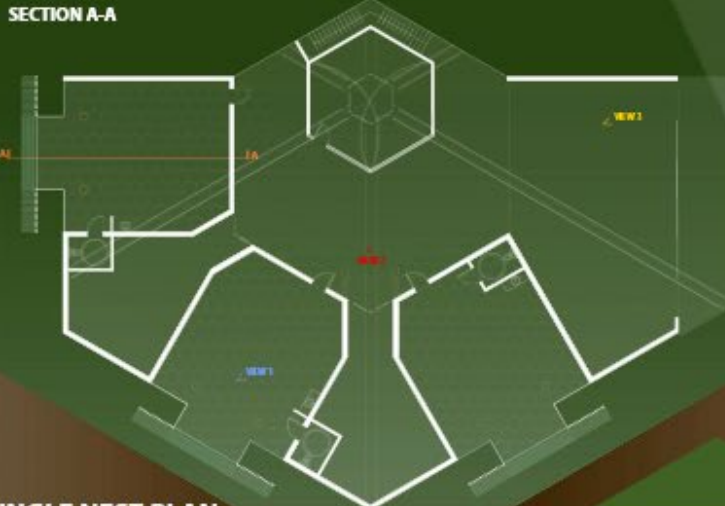
## WOODLAND ELEMENTARY SCHOOL

Jury Comments:

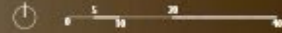
- the concepts of a school within a school, collaboration, and sustainability are developed in a series of learning “nests”



SECTION A-A

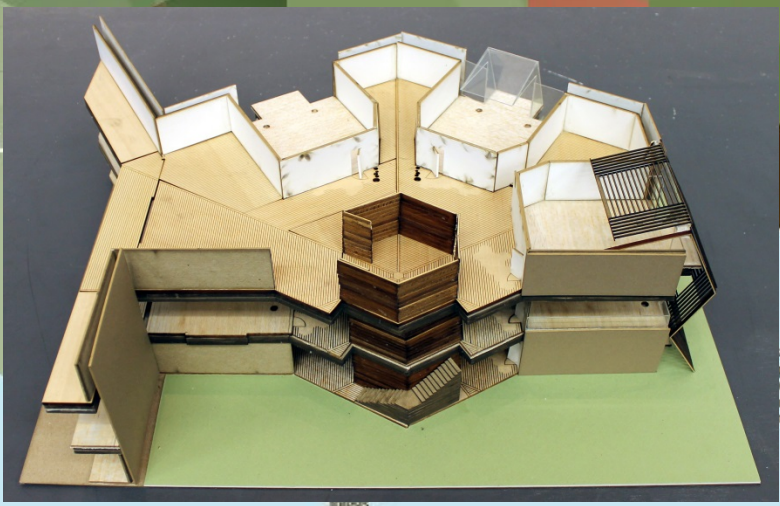


SINGLE NEST PLAN



### Primary Sustainability Features

- Shading system on all classroom windows to minimize solar heat gain in warmer months
- SolarTag electrical cabinets in classrooms and common spaces to save energy and teach students about energy efficiency
- Vegetative roof on top of cafeteria to teach students sustainable growing practices and healthy eating habits



a flexible space for quiet activities or display so trunk of a tree with collaborative spaces





THE LONG DRIVEWAY BEHIND THE SCHOOL PROVIDES A PLACE FOR STUDENTS TO ENJOY THE SPACE, AS WELL AS PROVIDING A PHOTOGRAPHIC OPPORTUNITY TO CAPTURE THE SCHOOL'S ARCHITECTURE AND THE BEAUTY OF THE SITE.



**CONSTRUCTION METHOD**

- 1. MASONRY LOAD BEARING WALLS
- 2. HEAVY TIMBER FRAMING
- 3. ROOF WITH SKYLIGHT
- 4. WOODEN SLAT SCREEN SYSTEM

**FIRST FLOOR PLAN**

- 1. LOBBY
- 2. GYM FACILITIES
- 3. GYMNASIUM
- 4. ADMINISTRATION
- 5. LEARNING CORRIDOR
- 6. CLASSROOMS GRADE 3-5
- 7. L.C. SUPPORT ROOMS
- 8. RESTROOMS
- 9. CAFETERIA
- 10. STAGE

**SECOND FLOOR PLAN**

- 1. LIBRARY / MAIN MEDIA SPACE
- 2. KINDERGARDEN LEARNING CENTER
- 3. CLASSROOMS GRADE 1-2
- 4. SUPPORT SPACE
- 5. LEARNING CORRIDOR BELOW
- 6. RESTROOMS

**STEM SCHOOL** BLACKSBURG, VA

C  
I  
E  
N  
C  
E

E  
L  
E  
C  
T  
R  
I  
C  
I  
T  
Y

N  
G  
I  
N  
E  
E  
R  
I  
N  
G

A  
T  
H  
E  
M  
A  
T  
I  
C  
S

STEM SCHOOL IS A PLACE WHERE TRADITIONAL METHODS OF TEACHING TAKE A BACK SEAT TO A MORE HOLISTIC APPROACH TO LEARNING. IT IS A PLACE WHERE AWARENESS OF ONESELF, AND THEIR SURROUNDINGS MEET, TO BEGIN THE DEVELOPMENT OF A LIFELONG DESIRE TO LEARN. THE LEARNING CORRIDOR EMBODIES THE IDEA THAT SELF DISCOVERY AND COLLABORATION ARE BEST DEVELOPED THROUGH ACTIVITY AND COMMUNICATION. THE SPACE ALLOWS THE FLEXIBILITY TO EVOLVE AS NEW METHODS OF EDUCATION COME ABOUT. LARGE EXPANSES OF GLASS THROUGHOUT THE SPACE BRING THE OUTSIDE IN, ACTING AS A CONSTANT REMINDER TO THE STUDENTS THAT THE WEATHER, THE SEASONS, THE TIME OF DAY AND THE NATURAL BEAUTY THAT SURROUNDS THEM IS A PART OF THEIR EVERYDAY WORLD.



SET TO THE REAR OF THE SITE, THE BUILDING'S LONG DRIVEWAY ALLOWS USERS TO EXPERIENCE THE ENTIRE SITE.



LEARNING CORRIDOR – THE HEART OF DISCOVERY & COLLABORATION WITHIN THE SCHOOL





# First Place – Connor Phiel

Virginia Tech Class 2

## Jury Comments:

- the different grade levels have great sight lines to see and experience what the other grade levels are doing
- these learning environments are successfully integrated into a barn structure which relates back to the local vernacular



CONSTRUCTION METHOD  
1. MASONRY LOAD BEARING WALLS  
2. HEAVY TIMBER FRAMING  
3. ROOF WITH SKYLIGHT  
4. WOODEN SLAT SCREEN SYSTEM

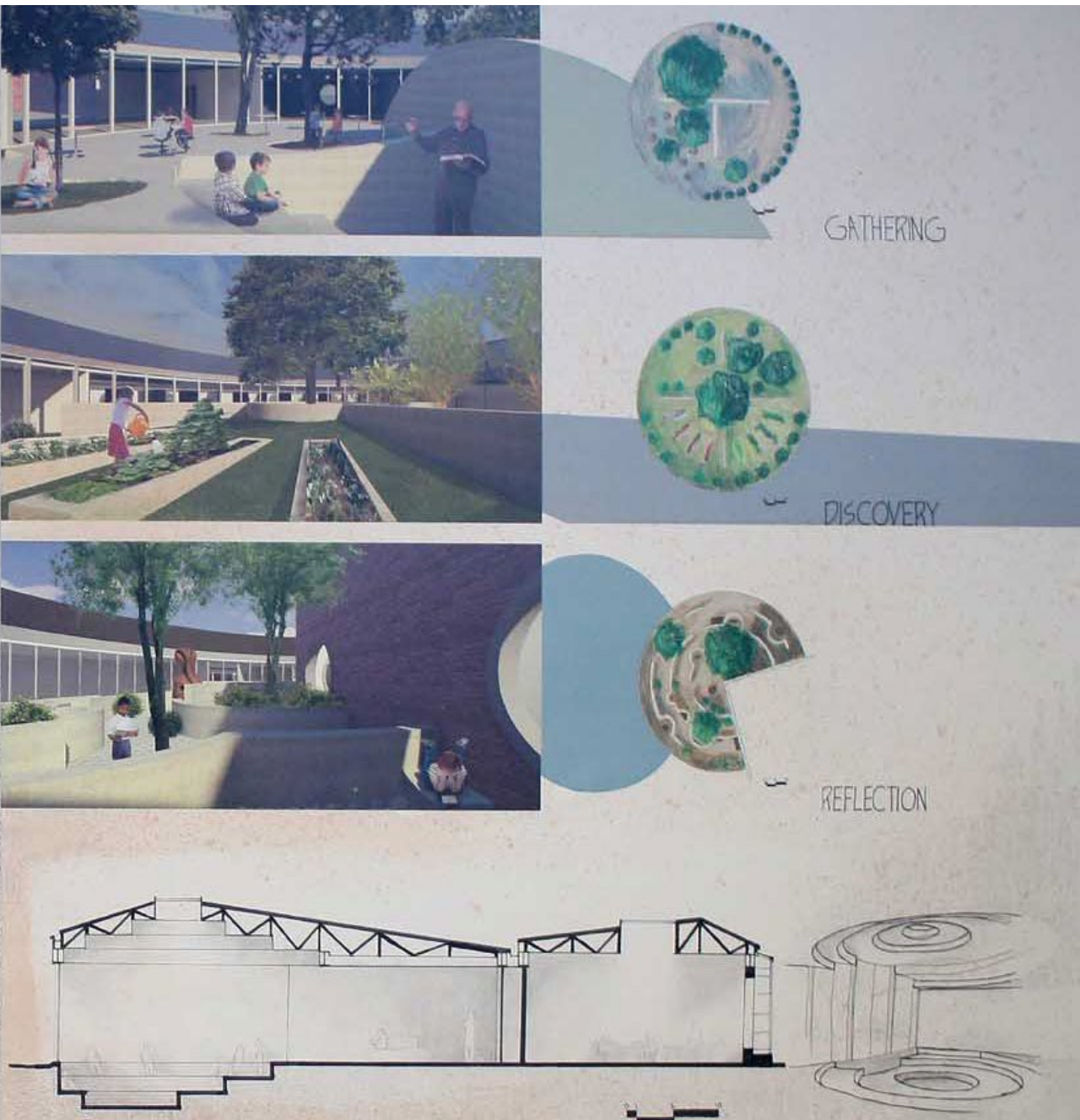
STEM SCHOOL BLACKSBURG, VA

STEM SCHOOL IS A PLACE WHERE TRADITIONAL METHODS OF TEACHING TAKE A BACK SEAT TO A MORE HOLISTIC APPROACH TO LEARNING. IT IS A PLACE WHERE AWARENESS OF ONESELF, AND THEIR SURROUNDINGS MEET, TO BEGIN THE DEVELOPEMENT OF A LIFELONG DESIRE TO LEARN. THE LEARNING COORIDOR EMBODIES THE IDEA THAT SELF DISCOVERY AND COLLABORATION ARE BEST DEVELOPED THROUGH ACTIVITY AND COMMUNICATION. THE SPACE ALLOWS THE FLEXIBILITY TO EVOLVE AS NEW METHODS OF EDUCATION COME ABOUT. LARGE EXPANSSES OF GLASS THROUGHOUT THE SPACE BRING THE OUTSIDE IN. ACTING AS A CONSTANT REMINDER TO THE STUDENTS THAT THE WEATHER, THE SEASONS, THE TIME OF DAY AND THE NATURAL BEAUTY THAT SURROUNDS THEM IS A PART OF THEIR EVERYDAY WORLD.

LEARNING COORIDOR – THE HEART OF DISCOVERY & COLLABORATION WITHIN THE SCHOOL









## Jury Comments:

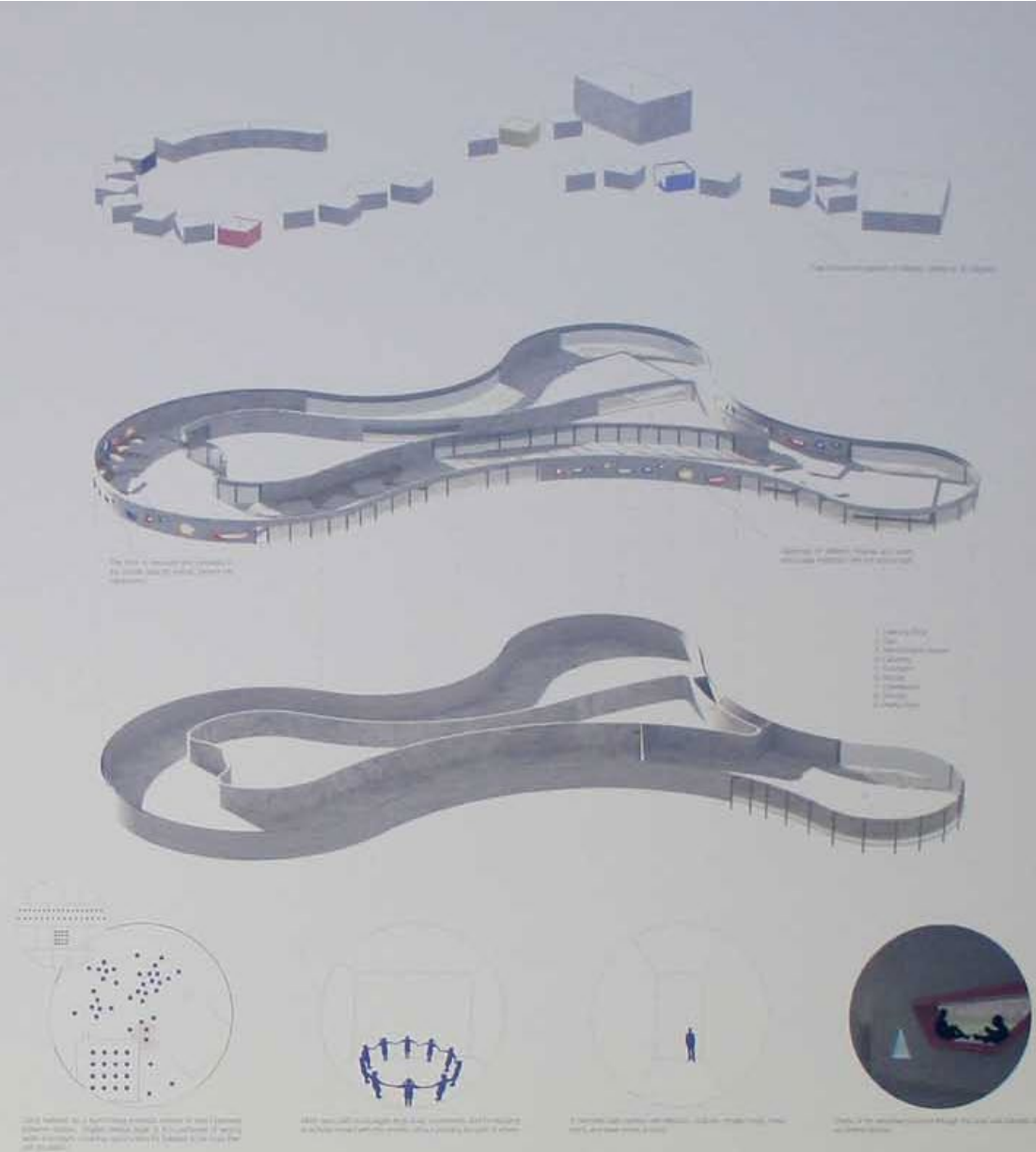
- a variety of learning spaces ranging from classrooms to collaborative spaces to unique outdoor courtyards that encourage students to gather, discover, and reflect on the natural environment
- skylights provide a dynamic daylighting effect, while changes in the floor level direct movement and create learning spaces



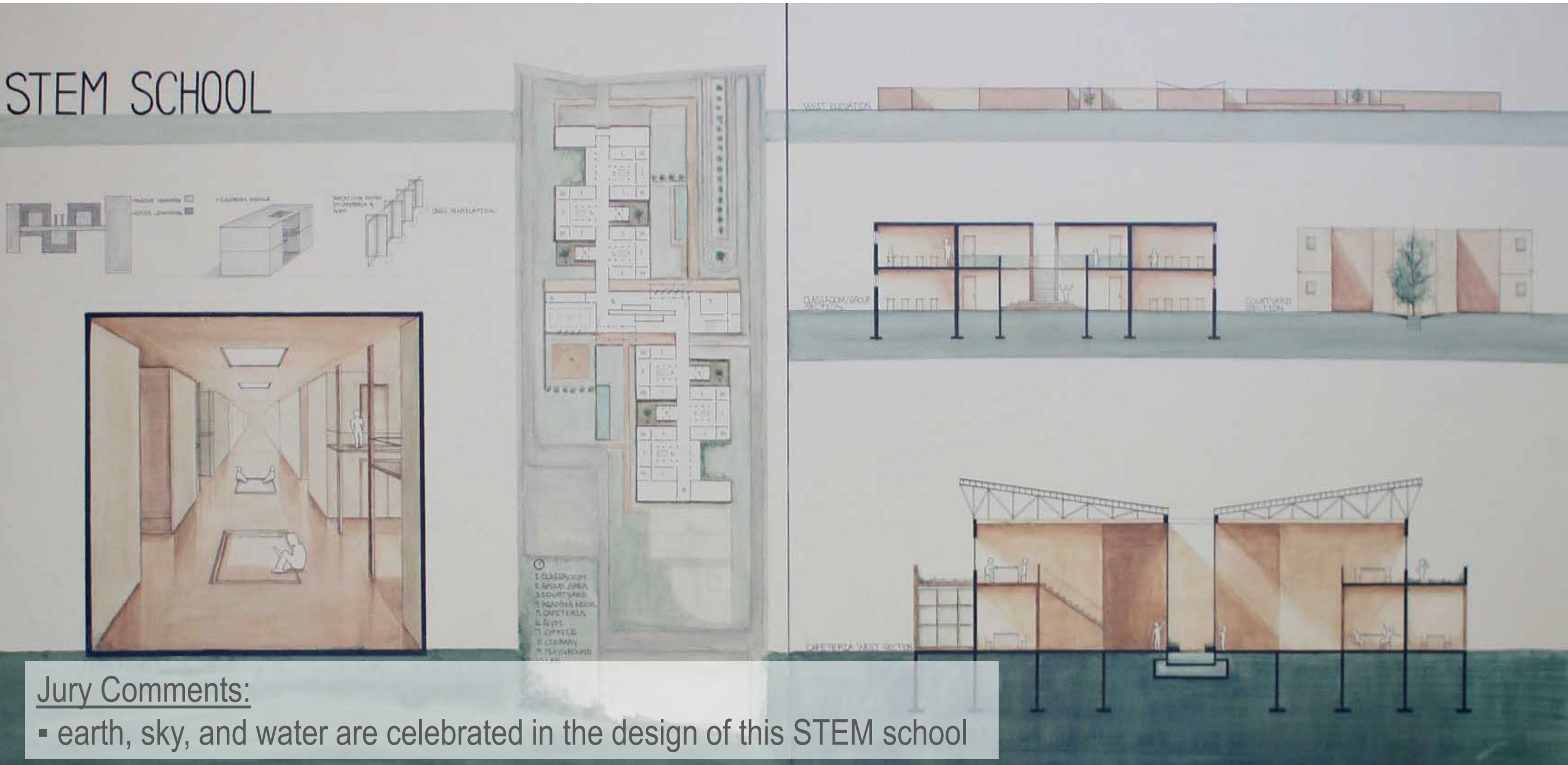


Jury Comments:

- niches and other child-inspired spaces illustrate the thought that was given to how students would experience the building







Jury Comments:

- earth, sky, and water are celebrated in the design of this STEM school



## “PEBBLE IN A POND”

When inspiration is sparked in a child, a ripple effect begins. Once inspired, they begin to develop a desire to learn more and more, never being satisfied with what they know. This process is similar to a pebble being dropped in a pond. When dropped, the pebble creates ripples that expand outward and continue to grow. After analyzing how children grow and learn, it is crucial to provide them with their “pebble” so that they can start their never ending ripples of education.

The design for this school originated from the concept of ripples and providing children a place where they can expand their knowledge. The site, located on a wetland, has a number of key water elements including a pond and a stream. Incorporating water into the design, the school acts as yet another ripple in the ecosystem and extends the existing wetlands. Features such as an integrated water filtration system, a green roof, extensive daylighting, and a state of the art technology center make this STEM school both stunning and unique.

Parti Sketch



1,074,613  
Acres of wetlands in Virginia



5%  
Wetlands  
covering the U.S.

2nd Floor  
1" = 70'



1st floor  
1" = 70'



- Circulation
- Classrooms
- Gymnasium
- Technology center
- Administration
- Dining

Axon



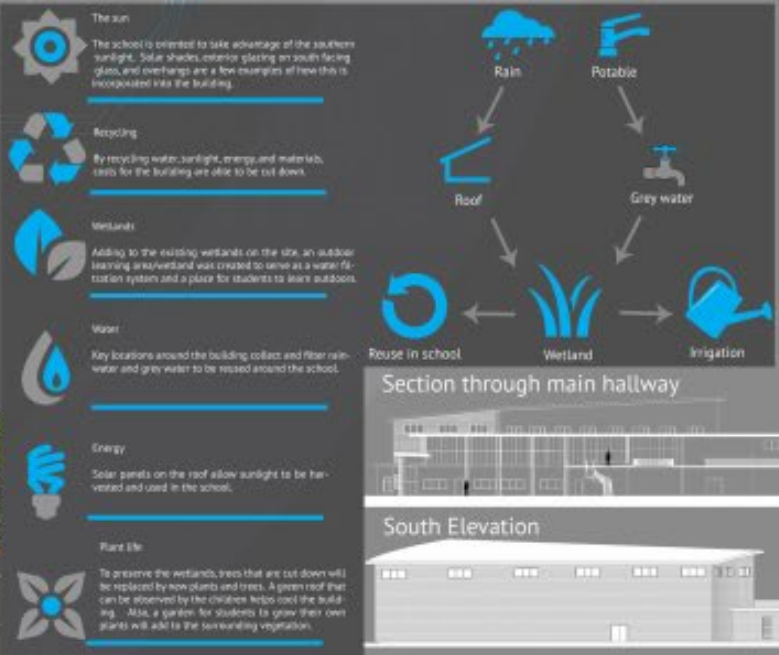
View to courtyard from classroom



View through main hallway



View inside courtyard



Sketches



Section through main hallway



Section through courtyard



South Elevation





# First Place – Chase Kea

Hampton University Class 3

“PEBBLE IN

A

When inspiration begins to drop, and more, they know, pebble being dropped, they expand out. After analysis, it is their “pebble” never ending.

The design concept children a p their know, wetland, habitats include. Incorporating school acts ecosystem and extends the existing wetlands. Features such as an integrated water filtration system, green roof, etc. are all part of the design.

## Jury Comments:

- well researched, well documented, programmatic areas are well zoned
- demonstrated a good understanding of the outdoors - very good connection between the outdoors and the indoors by relating the marsh to the building

2nd Floor  
1" = 70'

Circulation

Axon

Axon

View to courtyard from classroom

Sketch

Section through courtyard

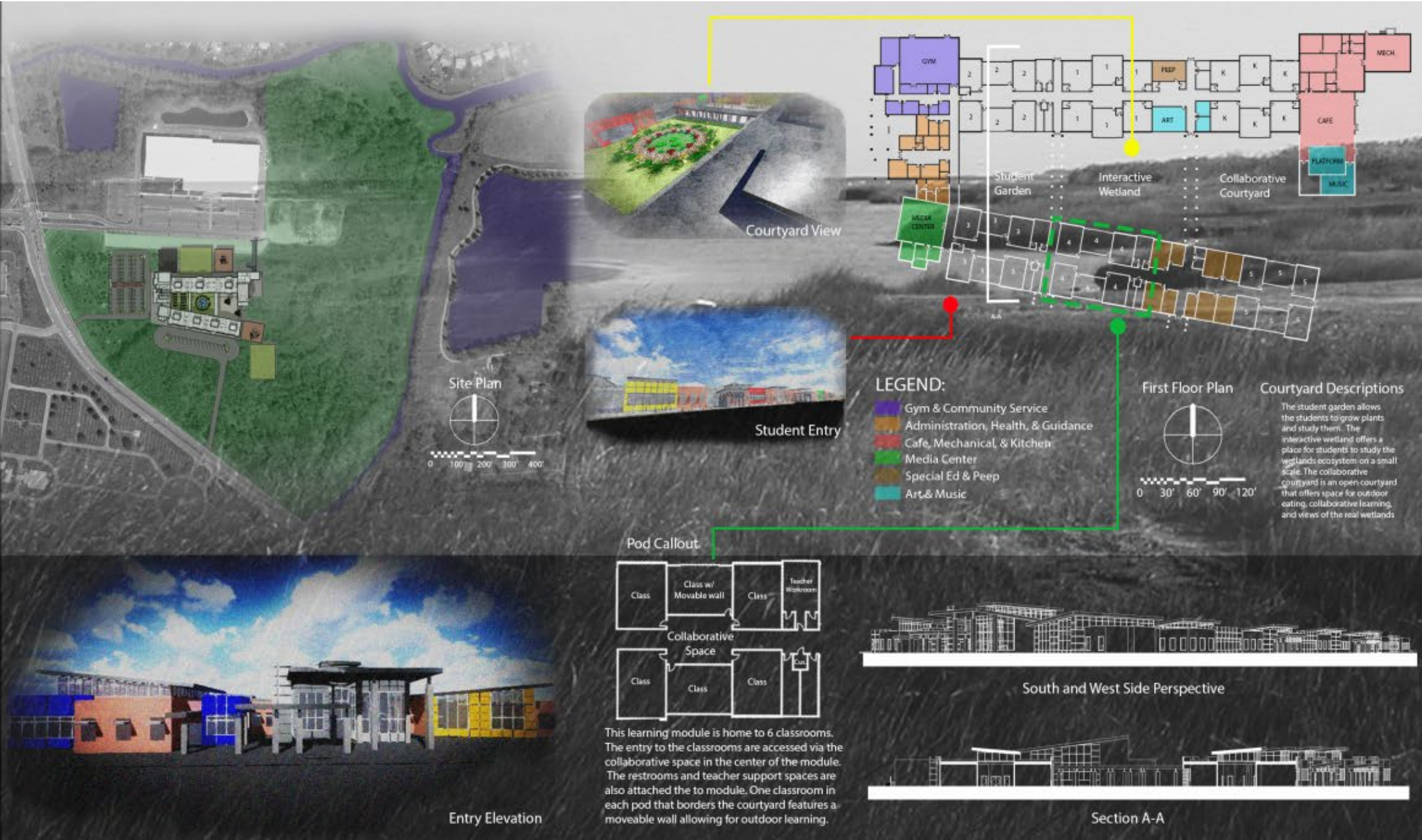


# Second Place – William Parks

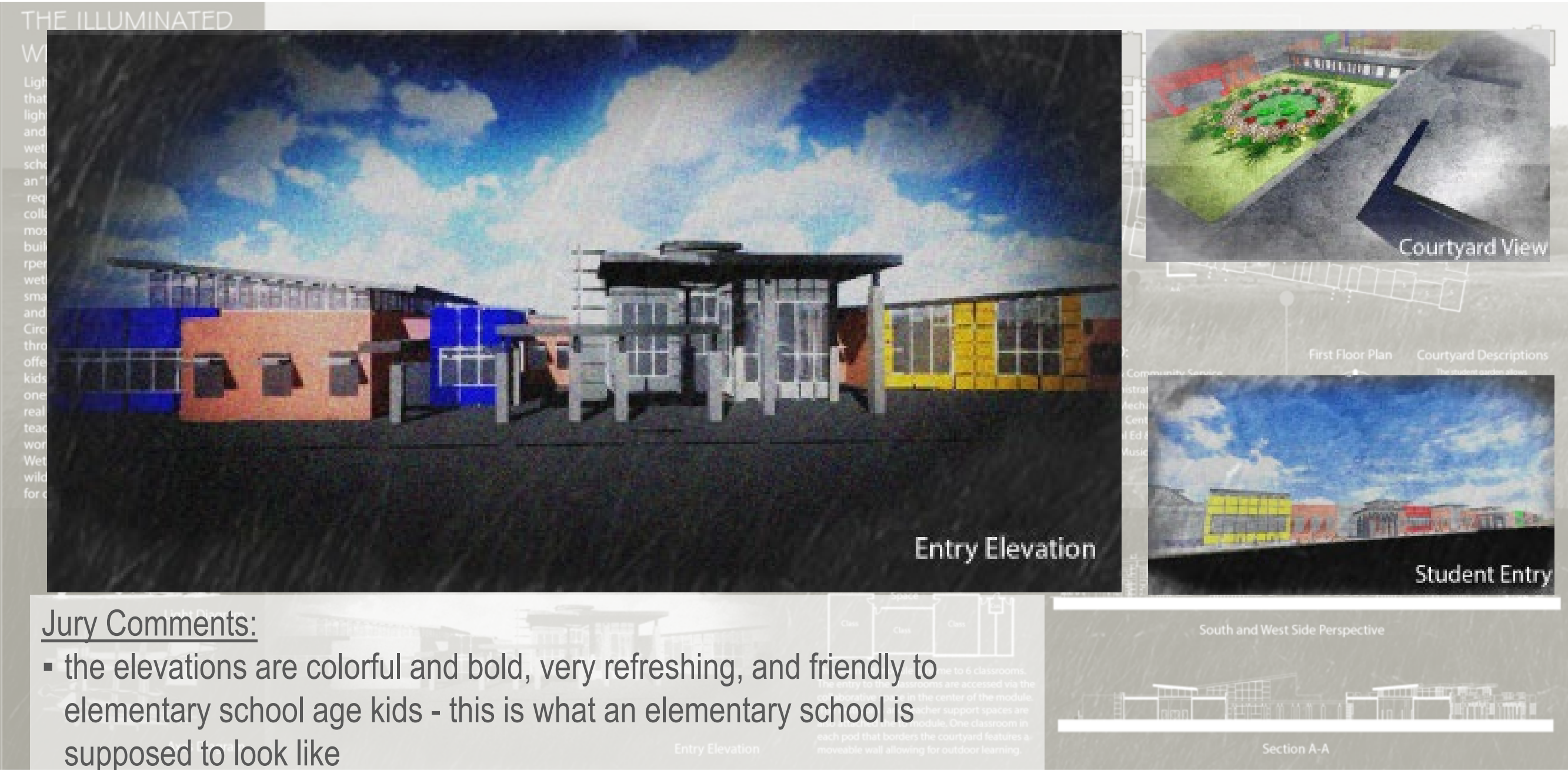
Hampton University Class 3

## THE ILLUMINATED WETLAND

Light is defined as the form of energy that allows us to see things. Not only does light help us see, it also effects our mood and inspires creativity. Much like the wetlands are saturated with water this school is saturated by sunlight creating an "Illuminated Wetland." The spaces that require extra creativity, such as the collaborative spaces and art, recieve the most sunlight. Organizationally the building was broken into three modules, rpresenting the three different types of wetlands. Each module is composed of smaller modules that can be taken out and implemented into other projects. Circulation through the module is through the collaborative spaces offering the opportunity for the older kids to mentor and help the younger ones. The "Illuminated Wetland," like a real wetland, is a diverse ecosystem of teachers, students, and faculty, working together to reach a higher goal. Wetlands provide nutrient rich food for wildlife like schools provide knowledge for children to grow.







### Jury Comments:

- the elevations are colorful and bold, very refreshing, and friendly to elementary school age kids - this is what an elementary school is supposed to look like



ADMIN  
QUIET  
NOISY

COLLABORATIVE LEARNING  
BUILDING THAT TEACHES  
VISIBILITY FOR SECURITY

SCIENCE  
TECHNOLOGY  
ENGINEERING  
MATHEMATICS

LEARN TO CREATE  
USE TO BUILD

UNDERLYING LANGUAGE OF SCIENCE  
NATURE

DISPLAY  
WATER FEATURE  
CIRCULATION  
EAT  
FLEXIBILITY

COMMUNITY CENTER

Teachers lounge is a carved in vault, that looks out into the courtyard

SUSTAINABILITY FEATURES:  
Light shelf (south)  
Solar hot water  
Bicycle rack  
Green wall  
Green roof  
Solar chimney  
Storm water management  
Recycled content & local material  
Fitted glass or blinds (east/west)  
Interactive living wall

**Jury Comments:**

- strong inside/outside connection by the use of collaborative learning courtyards

This STEM elementary school will serve both as a learning tool, and a safe haven for the leaders of tomorrow. Sustainable features have also been incorporated to make the building environmentally and human friendly.





# THE BEEHIVE

**CONCEPT:**  
AN ENCLOSED STRUCTURE IN WHICH THE HONEYBEE RAISES, LIVES, AND EDUCATES THEIR YOUNG IN A SAFE, SPACIOUS, AND YET EFFICIENT ENVIRONMENT. THE WORKINGS OF THE BEEHIVE IS INDEED AN AMAZING FEAT. THIS CONCEPT GIVEN TO US BY NATURE IS A MAJOR INSPIRATION FOR THE DESIGN. THE DESIGN WILL PROMOTE A SENSE OF PLACE WITHIN THE COMMUNITY AND PROVIDE A UNIQUE LEARNING EXPERIENCE WITHIN THE SCHOOL. THE DESIGN WILL INSPIRE THE STUDENTS TO INTERACT, EXPLORE, DISCOVER, AND EXPERIMENT WITHIN THEIR ENVIRONMENT.

**Jury Comments:**  
■ ingenious use of color for wayfinding purposes

**Imagine :**  
A place of discovery  
A place of exploration  
A place of where nature can engage students in a unique learning experience  
**Imagine** that as your school

SUSTAINABLE FEATURES	CONTEXT	SAFETY
EXTERIOR GLAZING RETENTION POND SOLAR PANELING WATER HARVESTING DAYLIGHT HARVESTING RECYCLED FLOORING	<b>CHALLENGE:</b> CREATING A UNIQUE IDENTITY, WITHIN THE CITY OF HAMPTON, WHILE MAINTAINING THE HIERARCHY A STYLE <b>SOLUTION:</b> INCORPORATING FORMS FROM SURROUNDING BUILDINGS INTO THE ELEMENTARY SCHOOL	SINGLE TWO POINT ENTRY INSTANTLY LOCKABLE DOORS ELIMINATE DESIGN FEATURES THAT PERMIT ACCESS TO ROOFS

**EAST TO WEST SECTION**

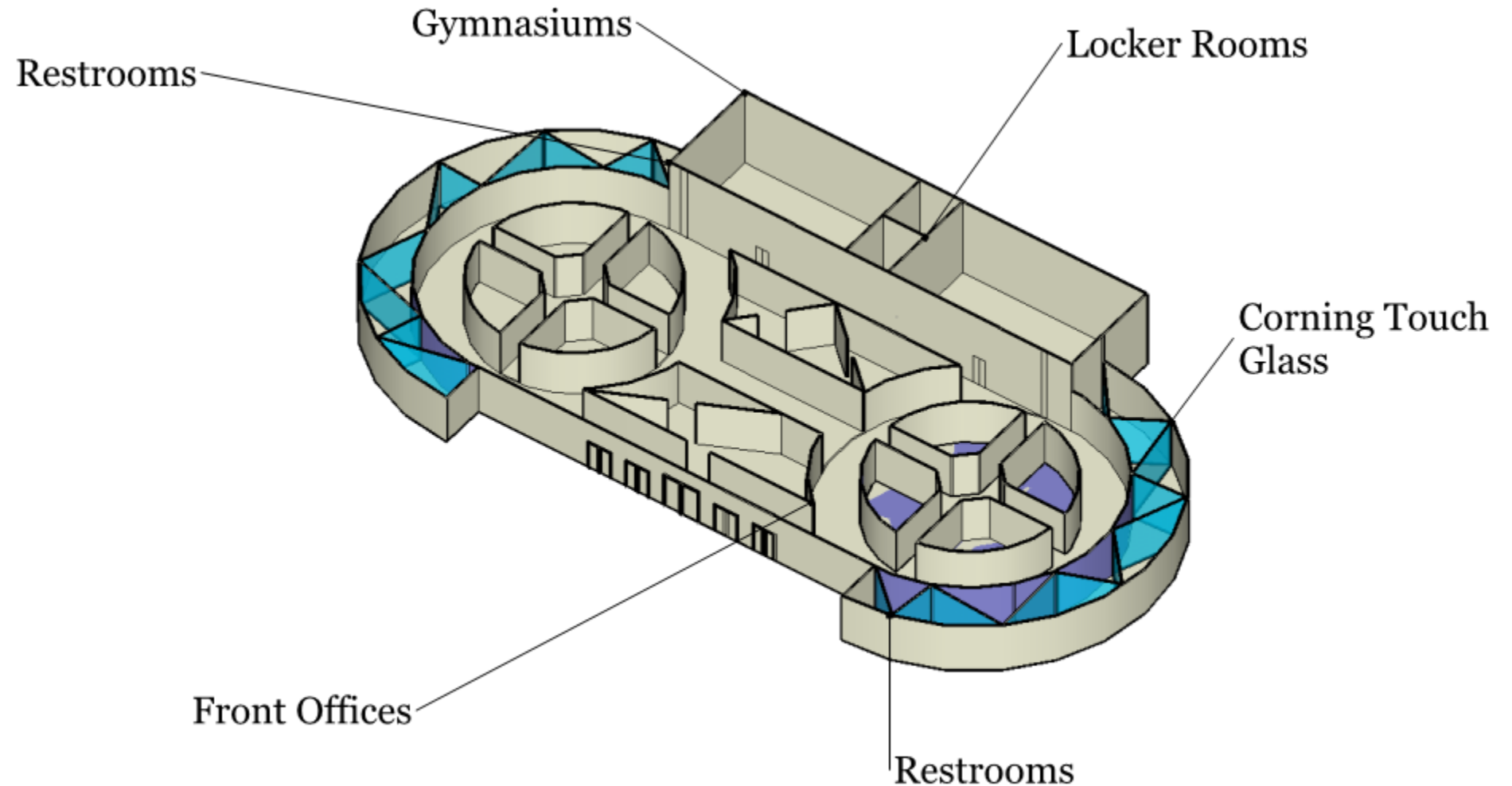


# Award – Katie DiFrancisco, Chris Padgett, Wade Gallagher, Spencer Parker

School of the Future Competition

“It’s not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change.” Charles Darwin

This quote represents the basis of education; that students should learn to be adaptive and go into the world to bring the change that is necessary – **this design reflects a pedagogical change in education.**





# Final Jury Comments

- Diagrams are Important to Explain an Idea
- Develop the Concept at Different Scales
- Entourage Helps the Viewer to Understand the Spaces
- Provide Clarity of Concept
  - Include a Legend of Spaces
  - Emphasize What's Important
- Overall.... Very Impressive!!! Thank you!!!



LEARNING CORRIDOR - THE HEART OF DISCOVERY & COLLABORATION WITHIN THE SCHOOL





# Special Thanks to...

- Virginia Tech
  - Professor Elizabeth Grant
  - Professor Mario Cortes
- Hampton University
  - Professor Robert Easter
  - Professor Paul Battaglia
- School of the Future
  - Mike Ulderich

