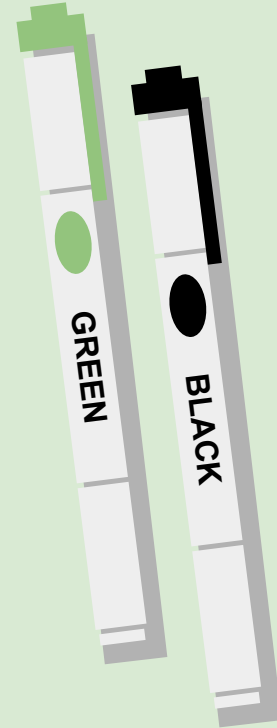


Kyre Sheppard
Seniko Hogan
Ashton Colantonio
Tristynnn Sizemore



Beck International
Academy

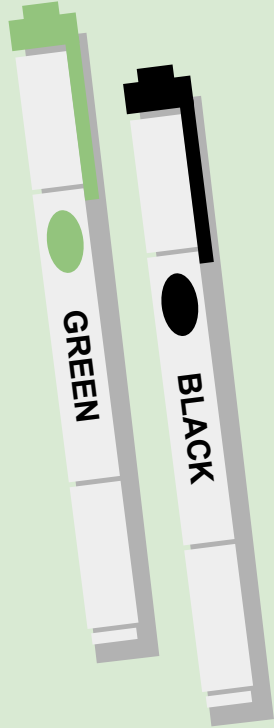
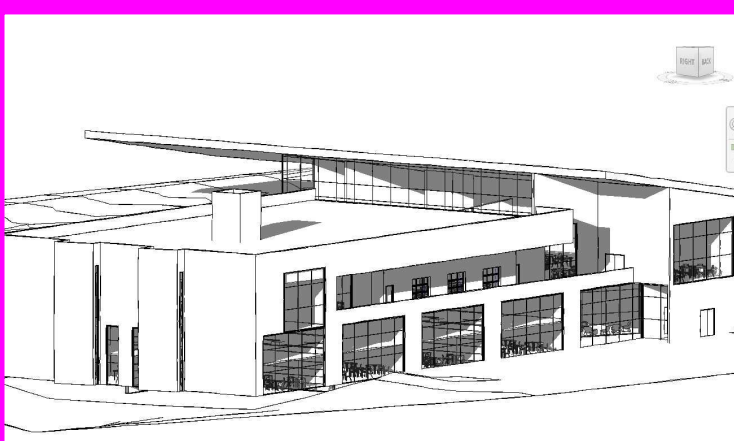
Greenville, SC



ROPER MOUNTAIN ACADEMY

Our Motto

R-Respect
O-Open-minded
P-Prepared
E-Engaging
R-Remarkable



DESIGN PROCESS

IDENTIFY THE PROBLEM

What are the challenges we face?

How can we solve them?

EXPLORE

Inspiration board.

DESIGN

Make a drawing or model of our design


TEST IT OUT

Test it for safety
and
eco friendliness

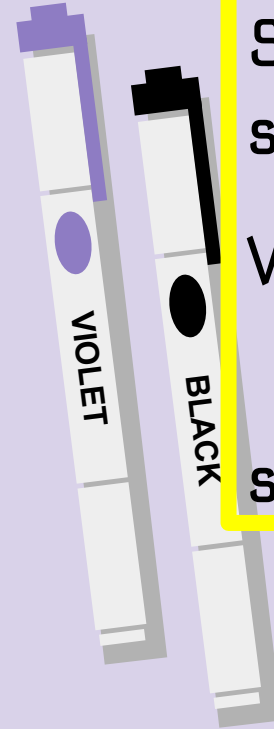
MAKE IT BETTER

Make adjustments to make it amazing.





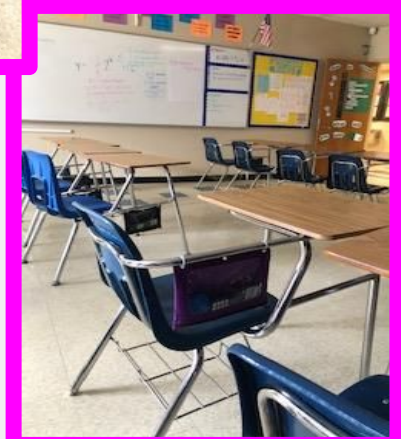
**How did we
identify
our
problem?**



Surveyed teachers & students,
Visited current site
Identified needs of students.

Our Current Site-Regular Classrooms

Our current classrooms are very basic. Each classroom includes a Promethean board and desks or tables and chairs.



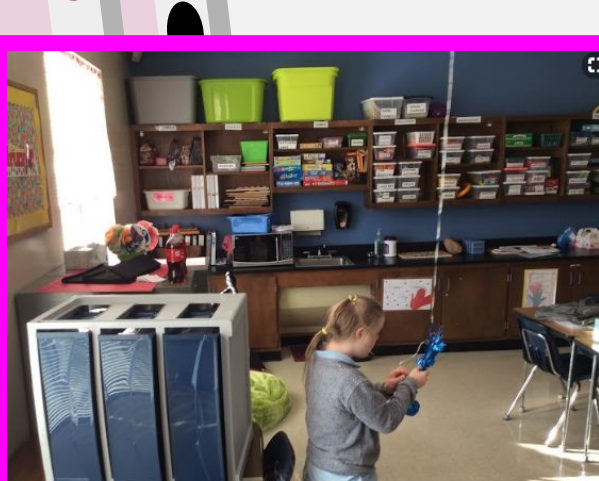
PINK

BLACK

Current site visit-Special Needs



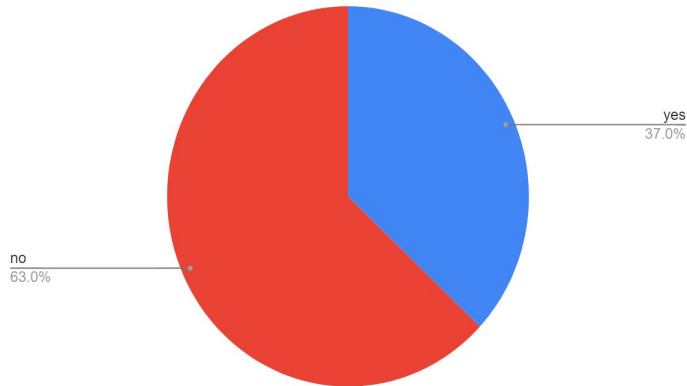
Our special needs classrooms are a regular sized classroom. The teachers have added cubbies and alternative seating and make do with the small amount of space available.



Results of Teacher/Student Technology survey

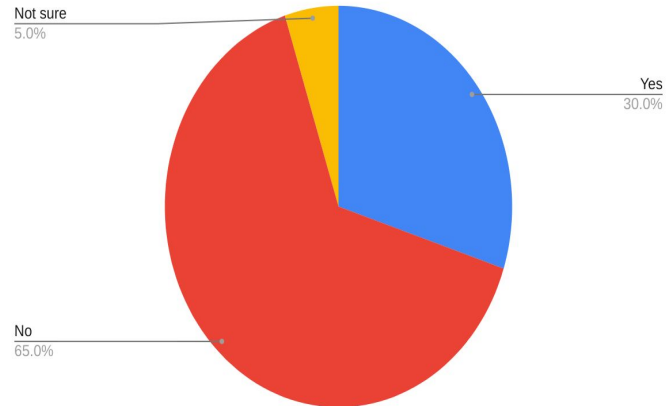
Do you feel you have enough knowledge to adapt and efficiently use technology in the workforce?

Teacher Survey



Do you feel you have equipped your students to adapt and efficiently use technology in the workforce?

Student Technology Survey



Identify the Problem



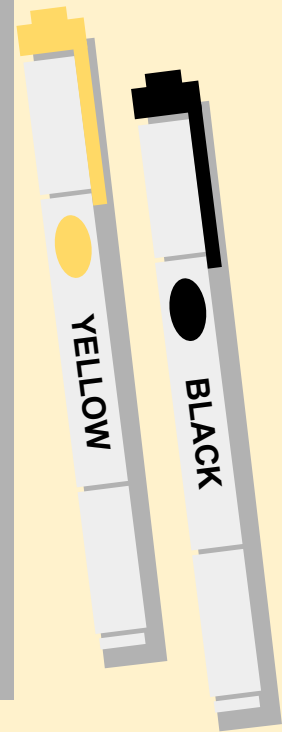
Our special needs students need additional supports



Not technologically advanced



We don't have opportunities for students to interact with science/nature





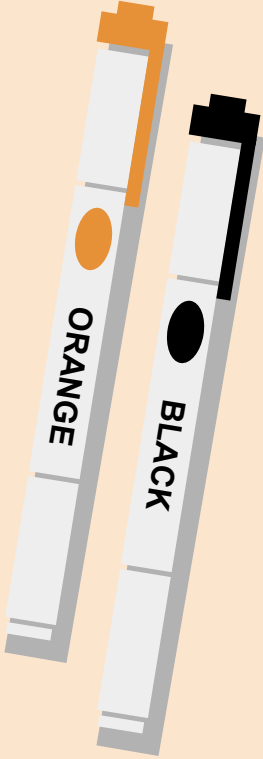
Explore

We began looking at other schools in the area and what they provide for their special needs students. We also looked at technology advancements at different schools and began looking for a location that would meet our needs.

Research



One of the spaces we took a look at was the Kendeda Building at Georgia Tech. They have added features to their building to make it totally sustainable. It has features such as the solar panels on the roof, and renewable materials used inside that we would like to see in our building.



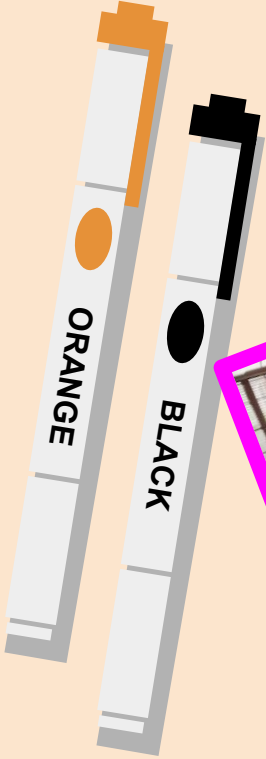
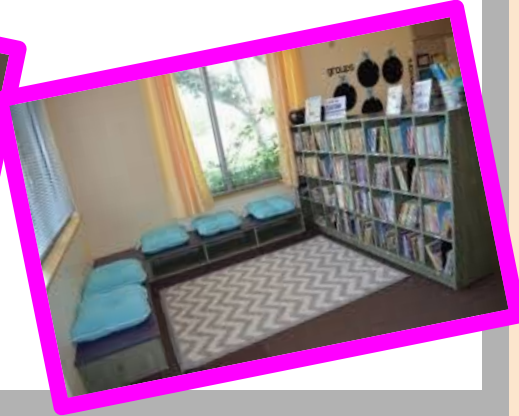
Research



Lisle Elementary designed by Perkins and Will showed us many elements we wanted to incorporate. We like the living staircase, the large TV screen and the open spaces for students to collaborate.

Inspiration board

We wanted to have
alternative seating
available and large
common areas for
collaboration



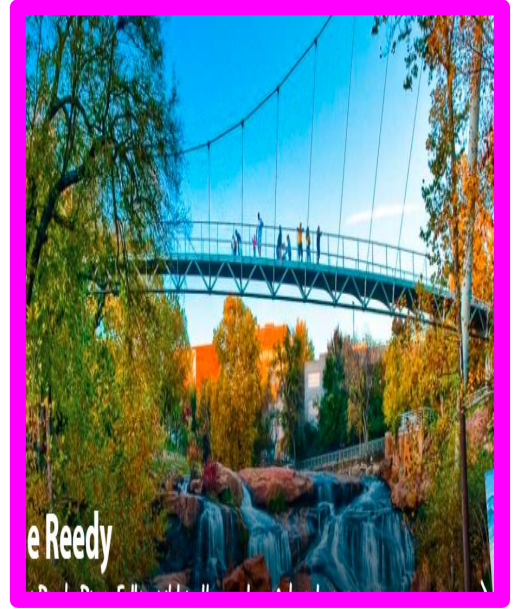
Inspiration Board

For our special needs students we want to have colorful equipment that is adaptable to their needs. We also want to provide a sensory room for them to use to explore the world around them.



Inspiration Board

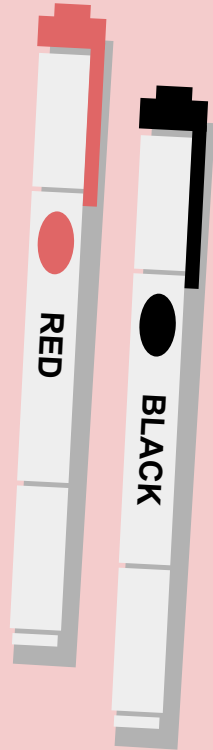
For the outside of our building, we wanted to incorporate features of our city. We are located in the deep south and like the look of old plantation homes. We also have a waterfall and suspension bridge in our downtown area that we would like to incorporate.



e Reedy

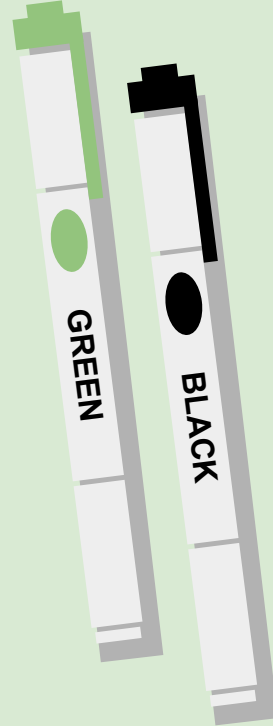
GOALS FOR ROPER MOUNTAIN ACADEMY

- 1) Create an area for our special needs students where they can have adequate resources.
- 2) Create a safe environment
- 3) Create an eco-friendly environment
- 4) Create a school that reflects our heritage and city.



MISSION STATEMENT

Our mission is to provide a school that is inclusive and equal for all students so that they may reach their full potential through science and technology enriched experiences that will impact their community.





Choosing a location

As we were looking at locations for our school site, we began looking at pieces of land that was near nature. We looked for sites near the Reedy River because we wanted to bring in water elements to our design to model after our downtown area. We came across the Roper Mountain Science Center and even though it was not near the water source we desired, it provided an opportunity for students to be near a world class science center. The benefits of having this next to our school seemed amazing.

Roper Mountain Science Center

The Roper Mountain Science center has a Butterfly Garden, the Daniel Observatory, a Hall of Natural Science, a Living History Farm, Nature Trails, and a Planetarium



HOOPER PLANETARIUM



DANIEL OBSERVATORY

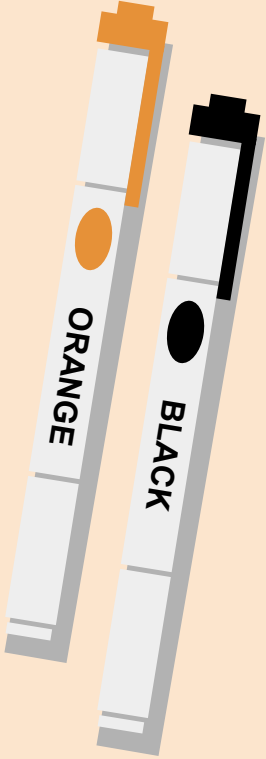


GOOGLE EARTH IMAGES



The property we found is the site of an abandoned amphitheater. The ground is steadily sloping down. We are using this to build a bi-level school. Because some of the building will be below ground level, we were limited on the windows we put into place.

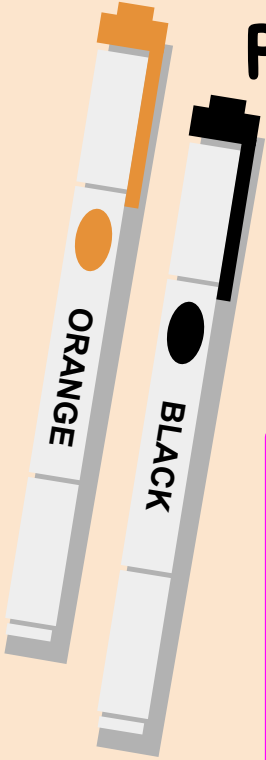
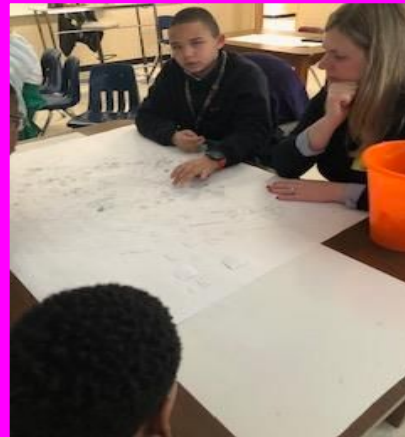
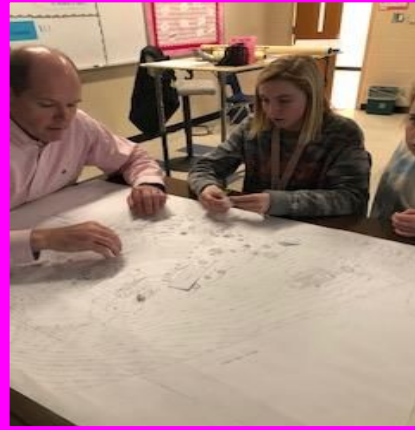




Choosing a layout for our school

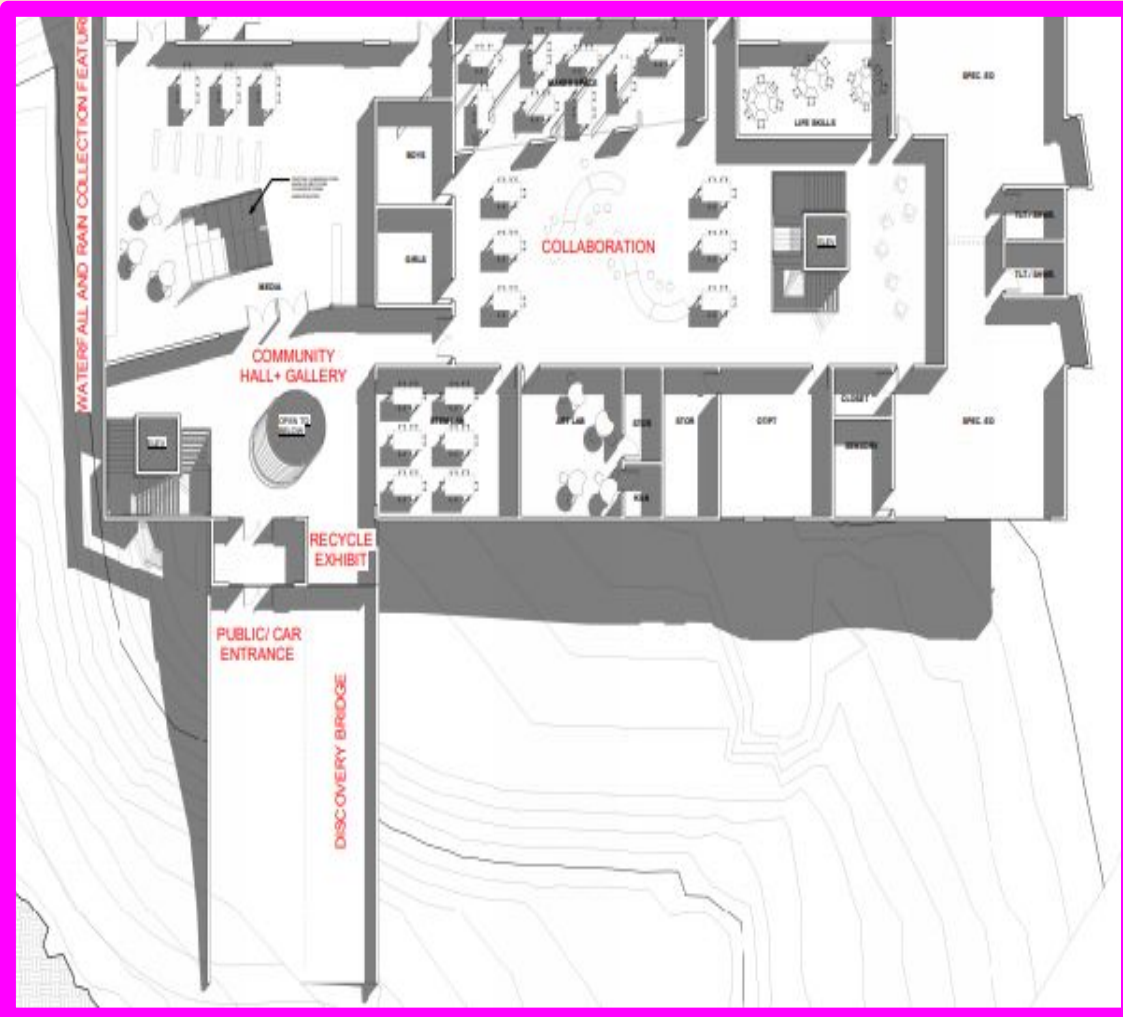
Paper Doll Activity

Working with Architects,
we figured out the
dimensions of rooms and
then used the Paper Doll
Activity to layout the
design for our school.



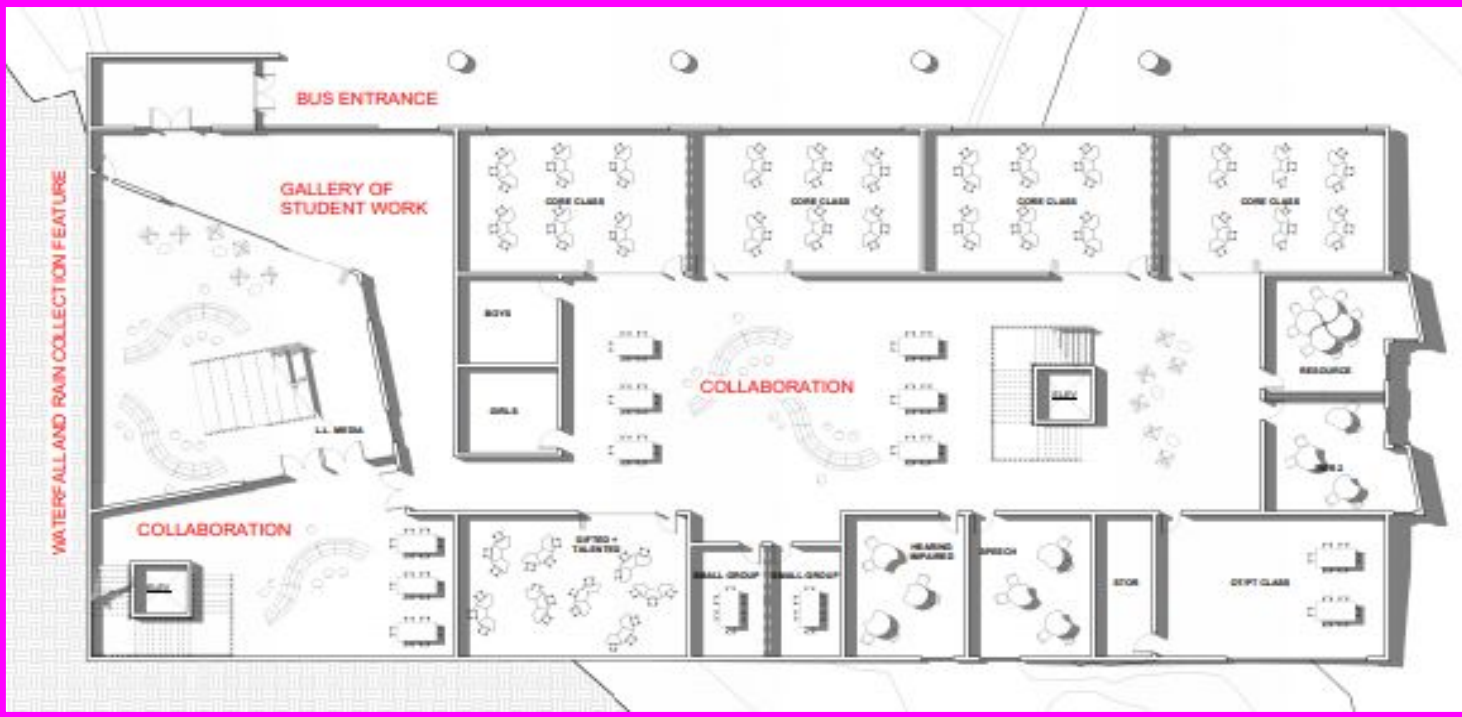
Floor plans-Top Floor

After many different designs, we finally agreed on a two story building. The first story is going to house our regular classrooms and the second will be an entire wing for our special needs students. We included large special needs classrooms, two toilet/changing areas, a life skills lab, sensory room and a Physical therapy area. Our media center is located on both levels. There is a large makerspace area for students to explore technology.



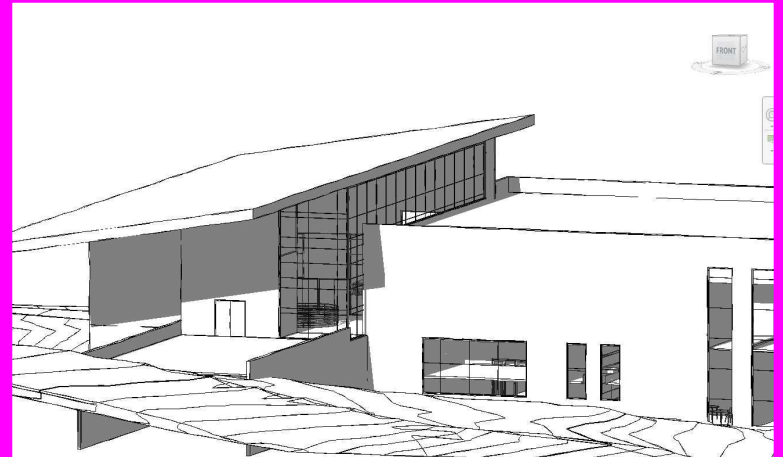
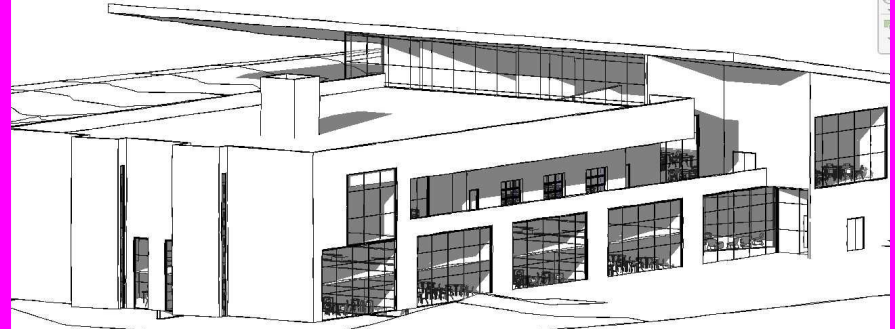
Floor plans-Bottom Floor

The bottom floor houses our regular education classrooms. We included a large collaboration area for students to work on projects together. We opted not to have large windows in all of our classrooms to create a safer environment in case of tornadoes or intruders.



Outside of Building

The outside of our building is a two story, bi-level structure. It has a bridge in the front to model our downtown area. We have large columns on the back that wink at Southern plantations. Cars will pick up through the front and buses will pick up on the side of the building.



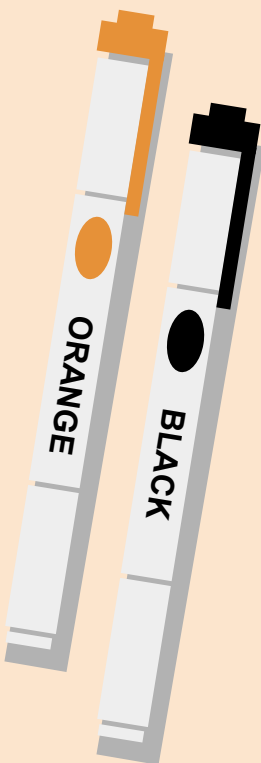
3D Model

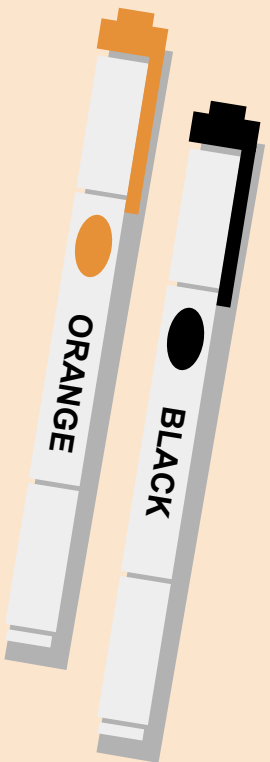


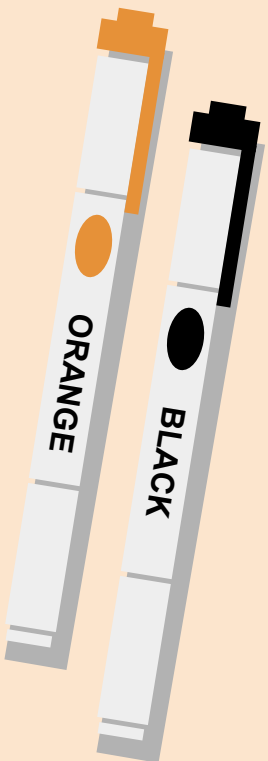
In our 3D model, we chose to use wall covering on the walls to show how each room could possibly look. We chose geometric designs to incorporate math and science concepts.

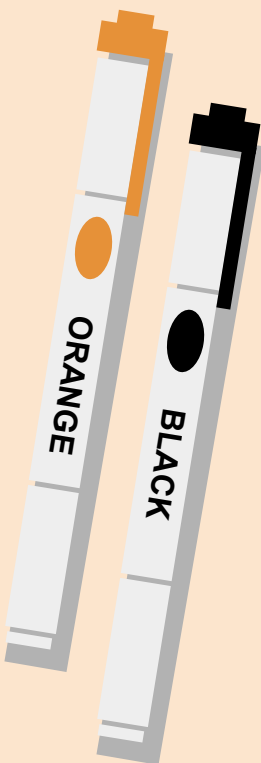
ORANGE

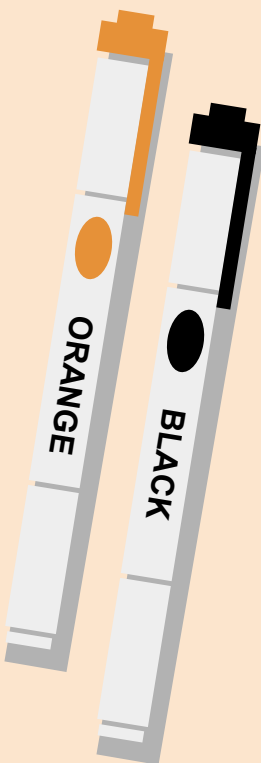
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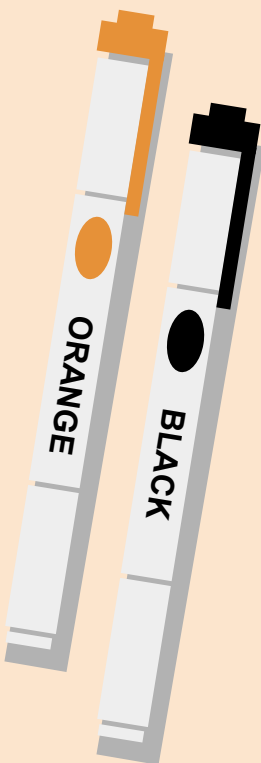




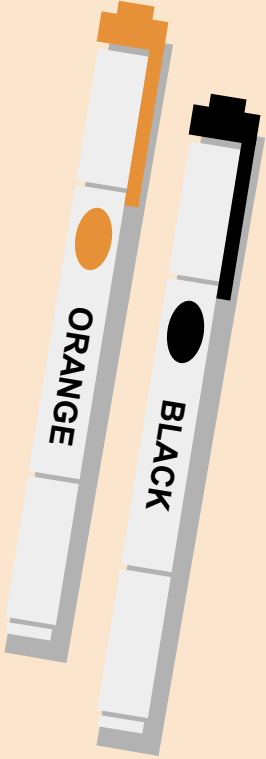






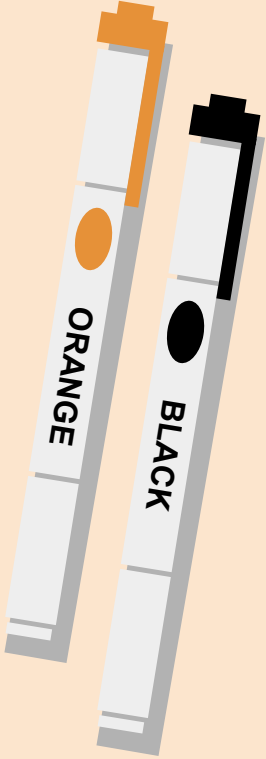
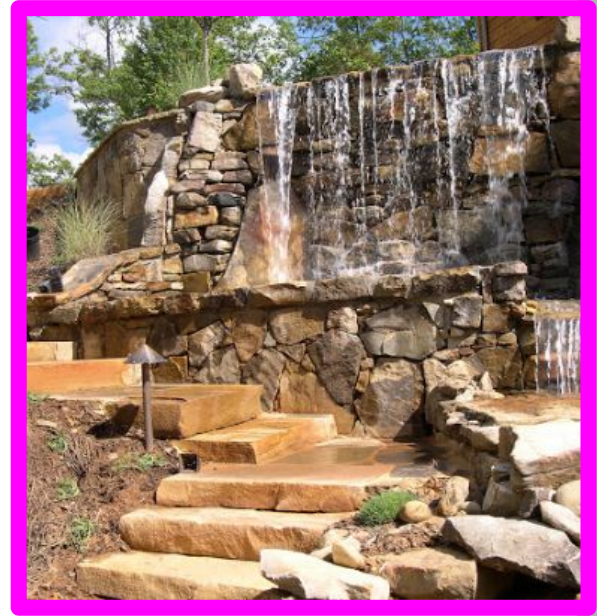


Choosing Eco- Friendly materials to build our school



Repurposing Stone

Since we are demolishing an old amphitheater, we wanted to repurpose the stone. In our outdoor area we want to place a waterfall that is modeled after our Downtown area. Using the stone from the amphitheater we want to build a beautiful water feature. We also want this to double as a rainwater collection tank.



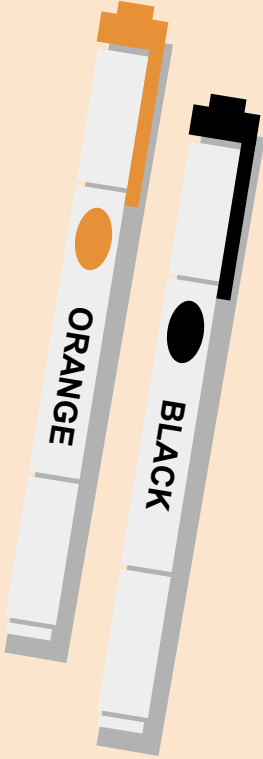
Repurposing Fallen Pine Trees

During our winter months, ice storms cause many trees to fall. We would like to repurpose these fallen trees to create staircases throughout our building.



Recycled water bottles

In our front entrance we wanted to place a large earth hanging over the staircase. We would like to collect recycled water bottles to make this artwork. We will consult with an artist that will help us to build this massive piece of art.



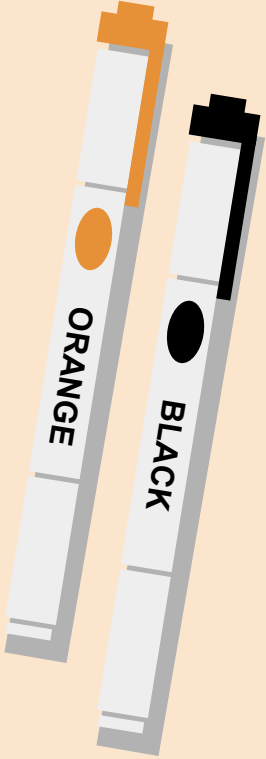
Biophilia

Biophilia is a design where you bring nature inside. We would like to create living walls throughout the building. We would also like to incorporate it into the floors to create features. Biophilia can help to provide natural air filtration. It can also provide sound insulation. Biophilia has been known to reduce stress, feelings of anger, and anxiety levels. It has also been known to reduce fatigue..



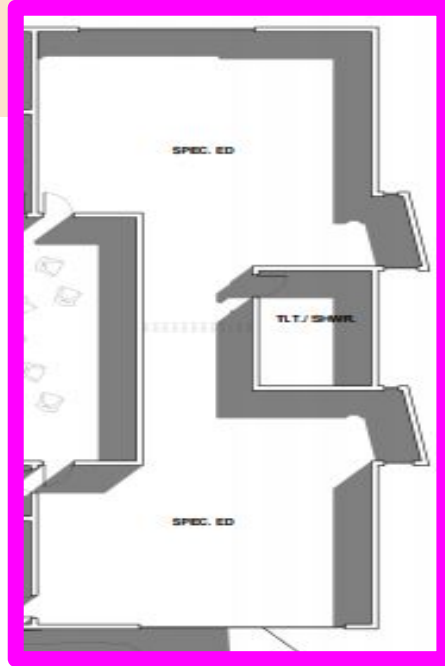
Flexibility of learning Spaces

Learning can take place anywhere in our building. Our classrooms open up to each other to make larger spaces, there is a collaboration room where students can work together. In the media center, students have access to tables and a large learning staircase. There is an outdoor learning space where students can gather outside on the bridge or on the large porch. There is a sensory room and makerspace as well. Learners should be able to easily find a place to fit their learning styles.



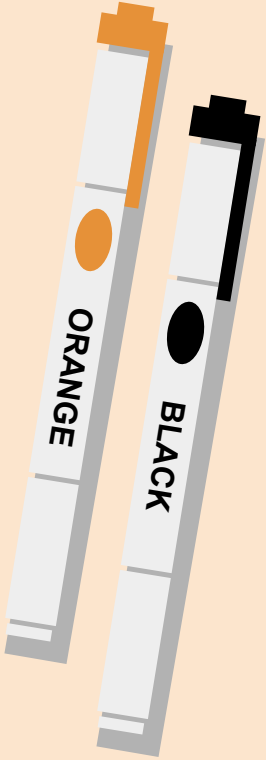
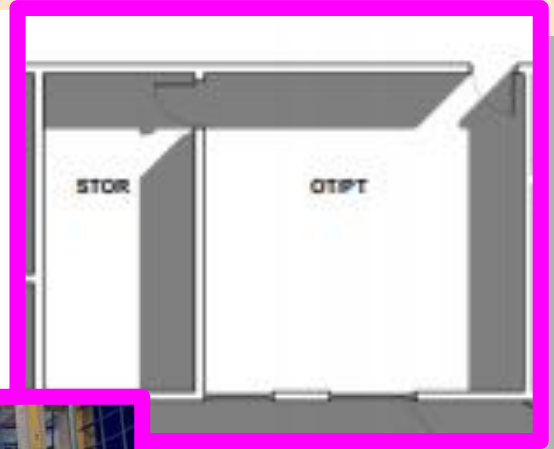
Special needs classrooms

For our special needs students we decided to have a fun and colorful learning environment, therefore we decided to create more room for our special needs students so that they can move around more comfortably unlike some other establishments. For our seating we decided to have a couch, regular chairs, and bean bag chairs. We added a small nook in each room for students to “hide” in when they need a safe space. For the overall room design we decided to make a more safe environment.

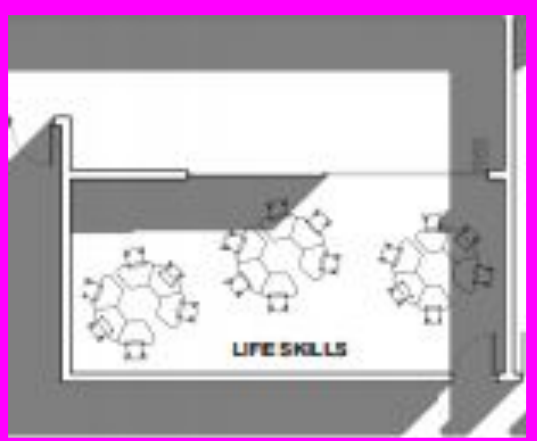


PT Room

The Physical therapy room is a state of the art area where our special education students can get the care they need, while at school. Doctors and nurses will come to the school on an as needed basis to work with patients/students.



Life Skills



In the life skills room, there will be a kitchen and other household items where students will be able to learn how to live on their own. The school store will be housed in the life skills room and will be run by our Special needs students. This will allow them to learn how to use money and interact with the public while learning a life skill.

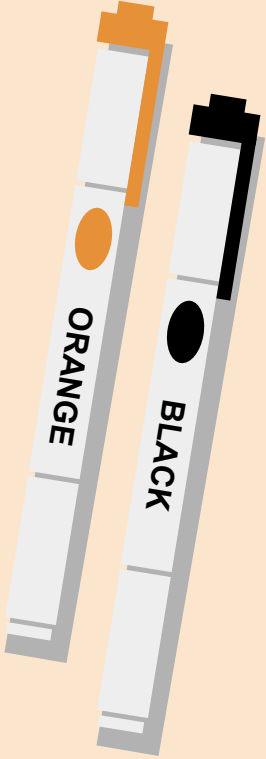
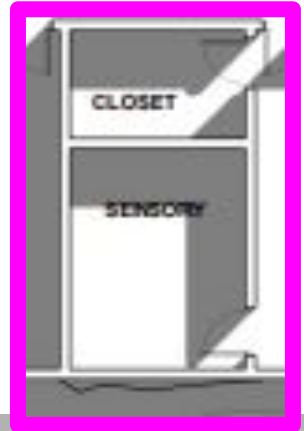


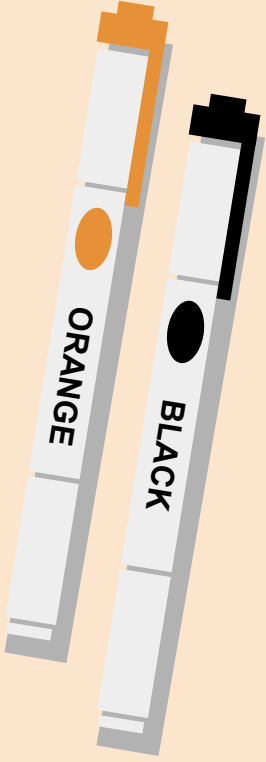
ORANGE

BLACK

Sensory Room

Most schools don't have sensory rooms for the special education students, but sensory rooms are very important to calm down and stimulate young learners. Sensory rooms are also important because they help students further develop and engage their senses. In our sensory room, we have included a living wall of grass and a wall of sequins.

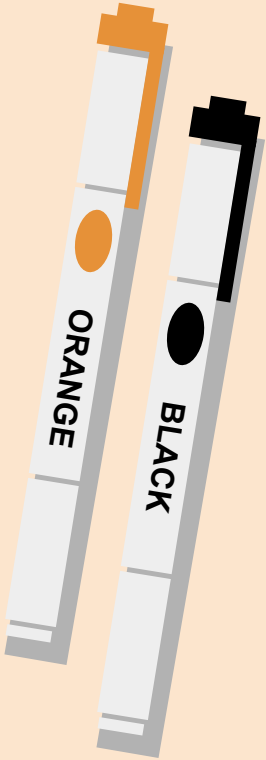




Science/Technology options

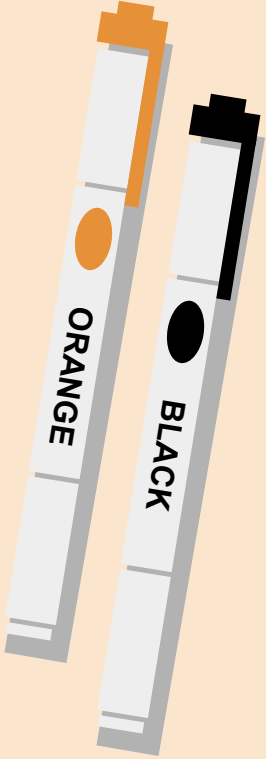
Power strips

We would like to put power strips on each table in the classrooms and Media Center so that students have readily access to power their devices throughout the day.



Large Promethean boards & Computer tables

In each classroom, there will be a large movie screen type Promethean board and a computer table connected to it. The Promethean board will have the option to show several screens at one time. The computer table will have adaptable keys so that our special needs students will be able to use them anywhere in the school.



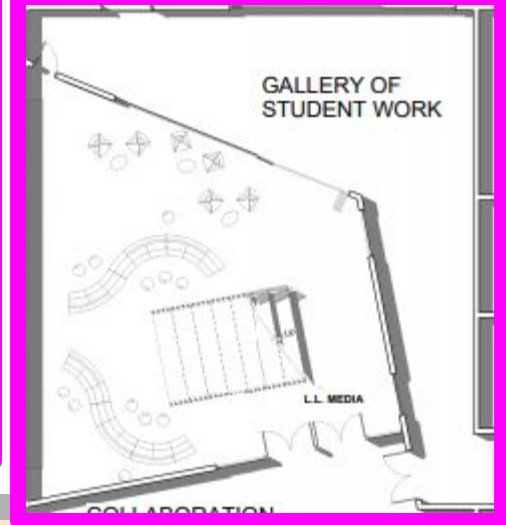
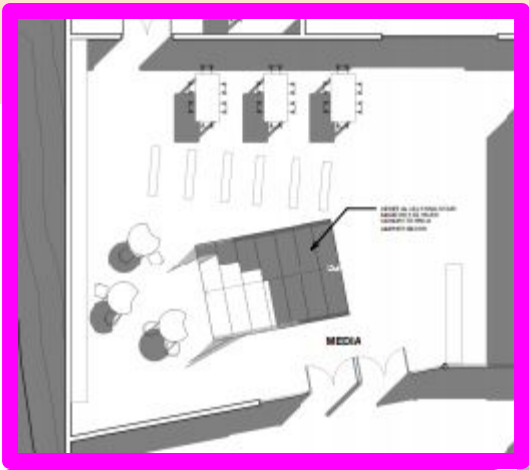
Makerspaces

The Makerspace will have the most up to date technology available to students. It will house robotics, 3D printers, legos, and video games for students to explore as well as anything new that comes along. It will stay up to date with the times.



Media Center

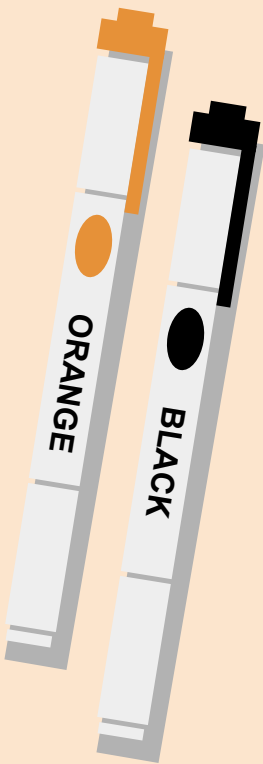
In our media center there will be lots of alternative seating, a cafe for students to get drinks from. It also has a large staircase where students can sit or lay and read books. It has areas where students can study in a quiet space. It will house books for all ages so that students can find something on their reading level including our special needs students.

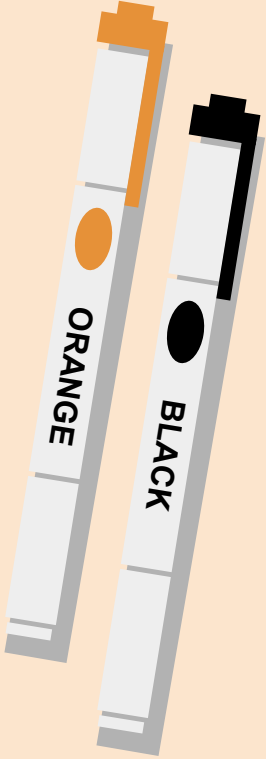


Seating areas



Tables

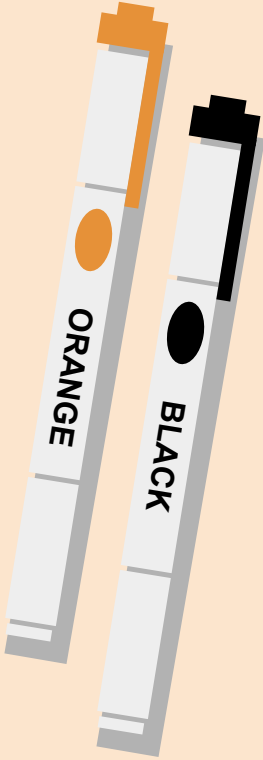
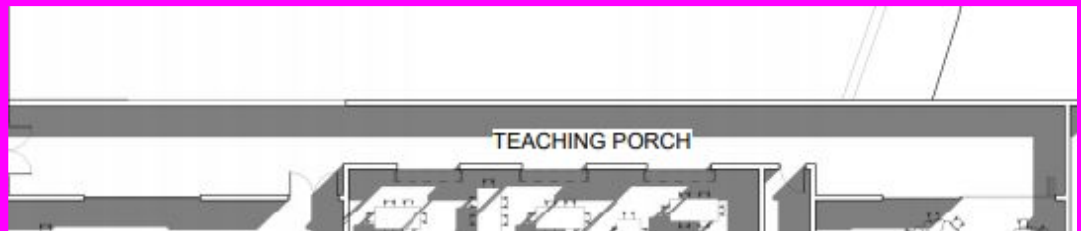




Eco-friendly

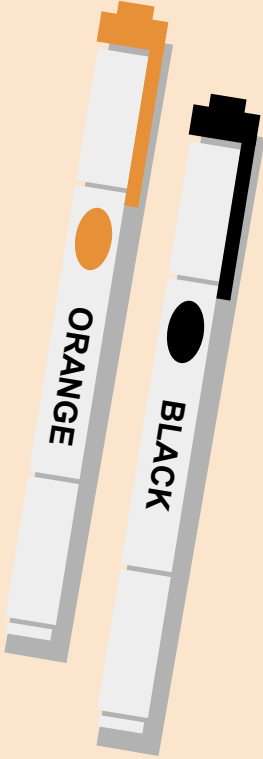
Outdoor Learning spaces

We wanted to give our students an option to go outside to learn but in an environment that was enclosed so that they are in a safe area. We created an outdoor learning space which is similar to a southern porch. We will provide comfortable seating chairs and the rainwater retention tank shaped like a waterfall will be located here. This will also provide a source of cooling for the building.



Rainwater Retention tank

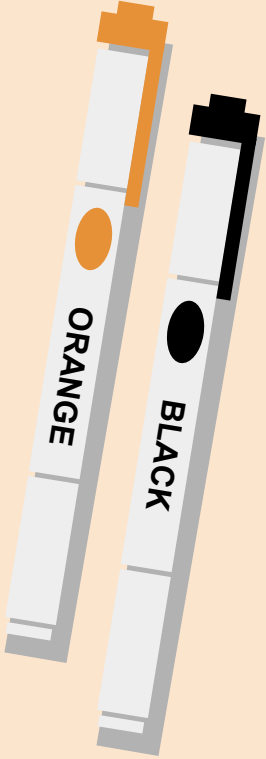
A rainwater retention tank offers a sustainable source of water. We wanted to incorporate a Waterfall into our outdoor area as a tribute to our Downtown area where the Reedy River spills into Falls Park. This waterfall wall will also double as a retention tank. The water will be used to flush the toilets throughout the building to reduce water use and costs for the school.



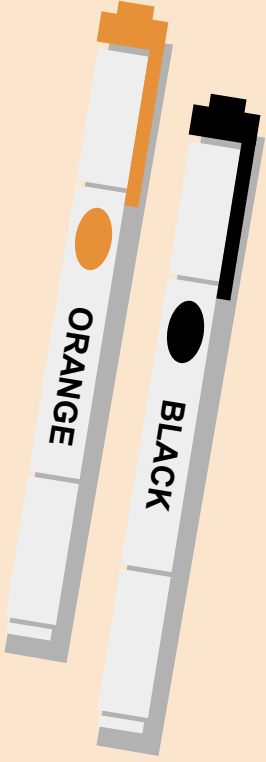
Green Roof

An intensive green roof will help to keep heat in during the winter months and to keep the building cooler during the hotter months. It can reduce the amount of stormwater runoff. The water is used by the plants and then released back into the atmosphere through condensation and transpiration.

Also, it would provide a habitat for insects, birds, bees and butterflies.



Solar Trees

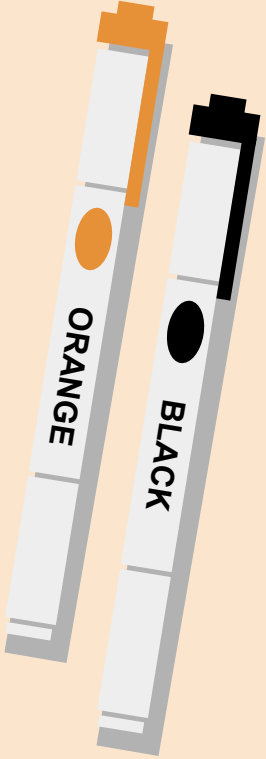


Solar Trees are metal structures that are shaped like trees with solar panels at the top. Solar energy is collected at the top and converted to electricity. We would use these to power our electronic devices within the school.



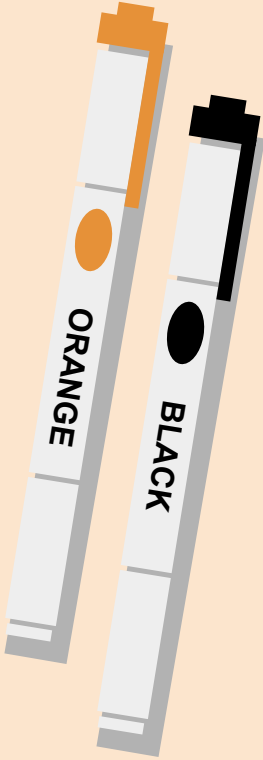
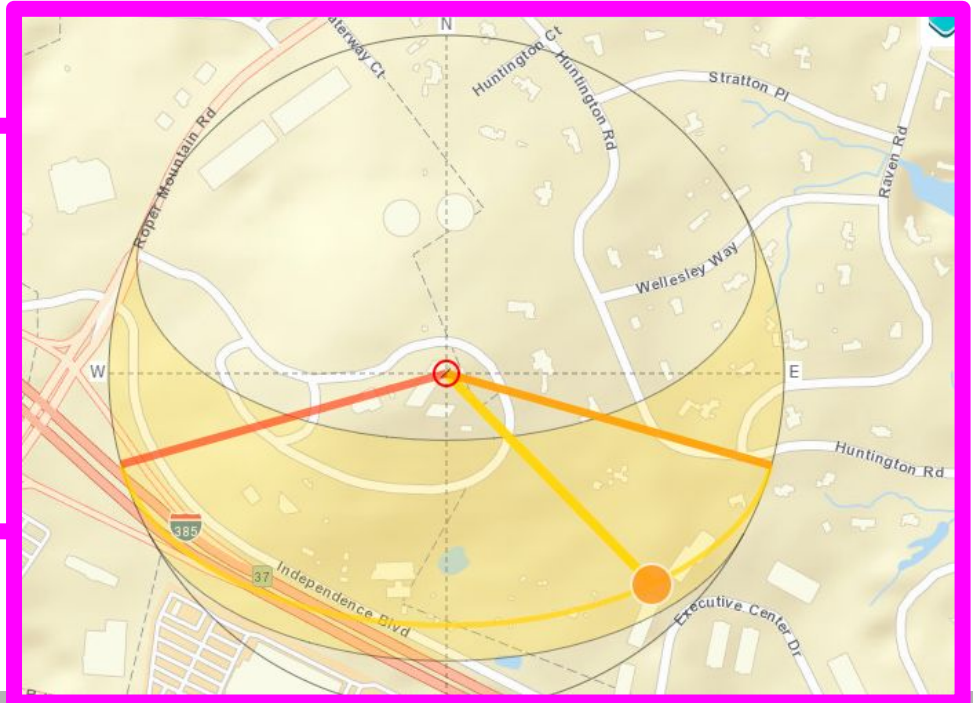
Motion sensed lights

Our school currently uses Active motion sensed lights. This kind of light turns on when it senses movement in the room and turns off when no motion is determined. It would save lots of energy for the school. We also have a regular light switch in case of failure.



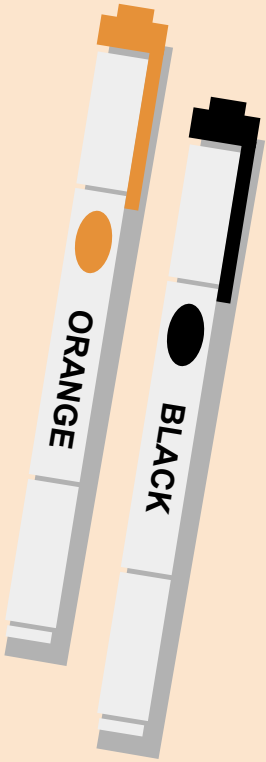
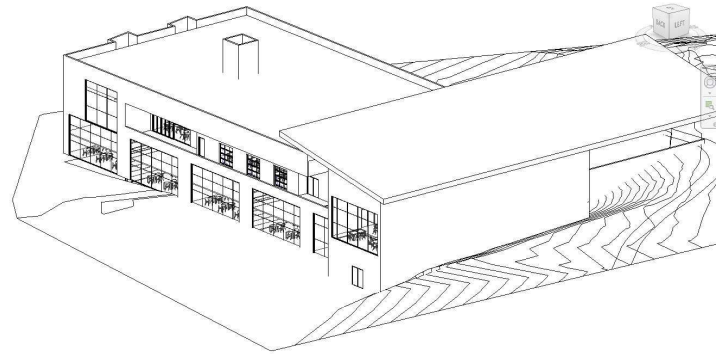
Window Placement

When we did an site analysis, we looked on google earth and determined the direction of the sun. We placed our windows in the location where they would be able to absorb the sun's heat energy to help with the heating costs of the building.



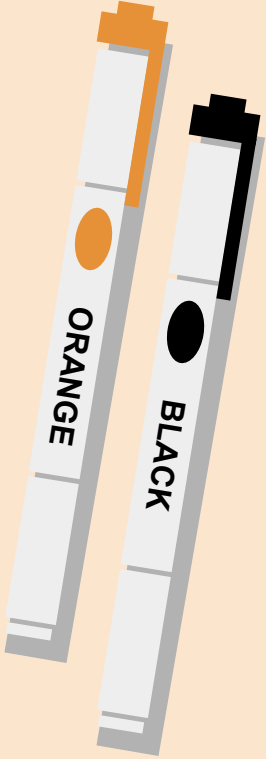
Daylighting

All windows are located on the North and South of the building. This provides optimal lighting for learning environments. Adequate daylighting has proven to enhance learning and improve testing scores.



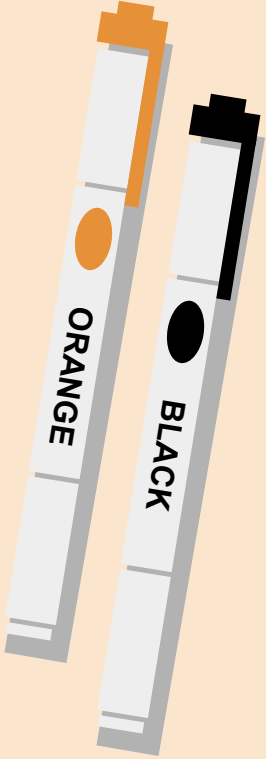
Power hand dryers

To cut down on paper waste, high powered hand dryers will be placed in all restrooms. These are recessed into the wall to avoid damage being done. It has an automatic shut off after 1 minute to conserve energy.



Motion sensed faucets

In order to keep running water to a minimum, we will install motion sensed faucets in all bathrooms. This will cut down on wasteful use of water or the possibility of someone leaving the faucet running.



Safety features



We invited our District Safety manager to review our floor plans. We discussed where to place fire alarms, where students would shelter in place, and where they would hold safe if an intruder was in the building. Because of his expertise, we revised our plans to reflect safety needs.

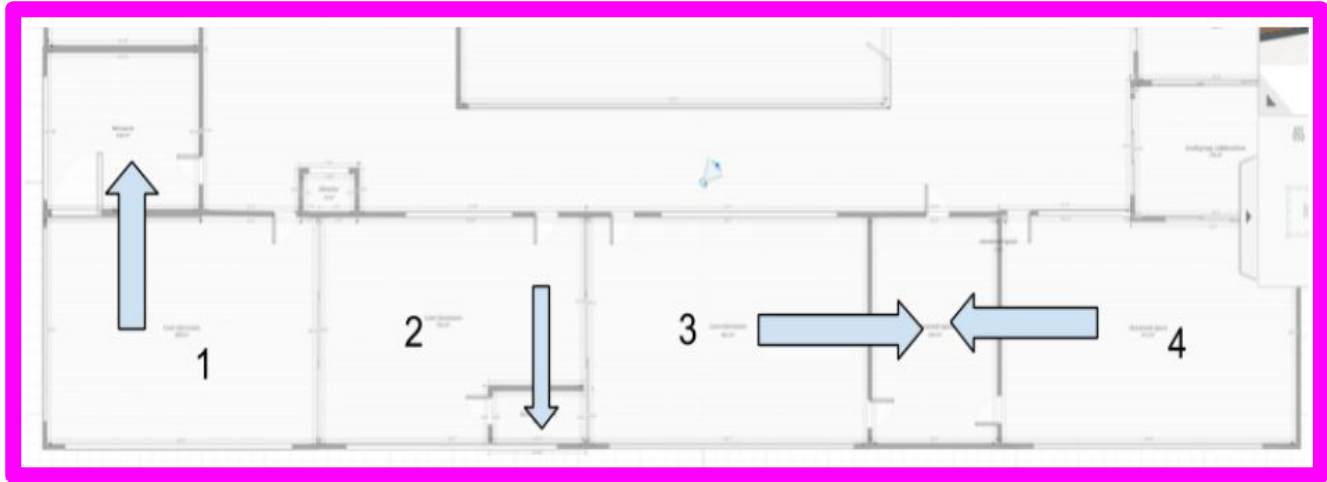
Fire Alarms

After discussing where to place fire alarms with our Safety Director, he suggested we have two fire alarms on each floor. There needs to be a safety alert in every room in the building and the alarm needs to be loud enough for anyone to hear it. The fire alarm is connected directly to the fire department so if an alarm is triggered, they are automatically notified and know the exact location of the outbreak.

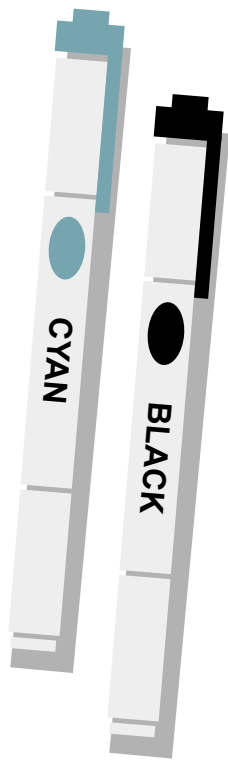


Safety plan for Intruders and Tornadoes

We wanted an open floor plan with sliding doors in between classrooms so that a small room could open into a larger room for projects and collaboration. While doing this, we realized that we needed safe areas in case of tornadoes or intruders. To solve this issue, we made sure that next to or in each classroom was a “safe” room that everyone could easily access.



THANK YOU!



Scott Powell, architect

Ali McClure, architect

Grant Gothran, Recraft

Mike McComas, Safety Director

Scott Carlin, Executive Director of Facilities