

PROJECT SPOTLIGHT

WESTHILL HIGH SCHOOL

Phase I Renovation

PROJECT TYPE

Education (Grades 9-12)
Westhill Central School District

LOCATION

Syracuse, New York

SIZE

22,400 SF (Third Floor Only)

PROJECT SPOTLIGHT BY

Catherine M. Wolfe, CID, NCIDQ, ALEP
Vaysen Studio

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WESTHILL HIGH SCHOOL

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CLIENT OVERVIEW

The Westhill Central School District is located in Onondaga County, immediately west of and adjacent to the City of Syracuse. Westhill is a medium sized district with 1,900 students and a professional staff of nine administrators, 166 teachers and a support staff of 135. The general area offers abundant opportunities for cultural, recreational and educational pursuits. Small in geographical size (about 8-9 square miles), the Westhill District is home to 4,800 community members. The district is predominately residential in nature with over 95% of the tax base coming from home owners.

DESIGN CHALLENGE

Westhill High School is currently in the middle of a two-phase renovation project. The existing Academic Wing, a concrete structure building with a precast cladding system designed and built in 1960, is a prominent feature of the Westhill High School. As part the first phase, the design team was tasked with updating the exterior envelop to create a high performance academic wing as well as creating an interior learning environment on the third floor of a three-story academic building that fosters new educational delivery and thinking.

DESIGN SOLUTIONS

The North-South orientation of the academic wing with classrooms facing East-West results in inherent issues with glare in the morning and evening. To improve these conditions the existing academic wing was analyzed to determine how to incorporate techniques that maximize daylighting and energy efficiency.

The exterior envelope was replaced with new windows and a shading system, a terra cotta rain-screen system with continuous insulation and replacing the ventilation systems.

The interior environment was analyzed and transformed from a traditional double-loaded corridor to a meandering corridor with collaborative neighborhoods comprised of individual, small group, and large group areas to promote the shifting culture of educational delivery to a student-centered model.

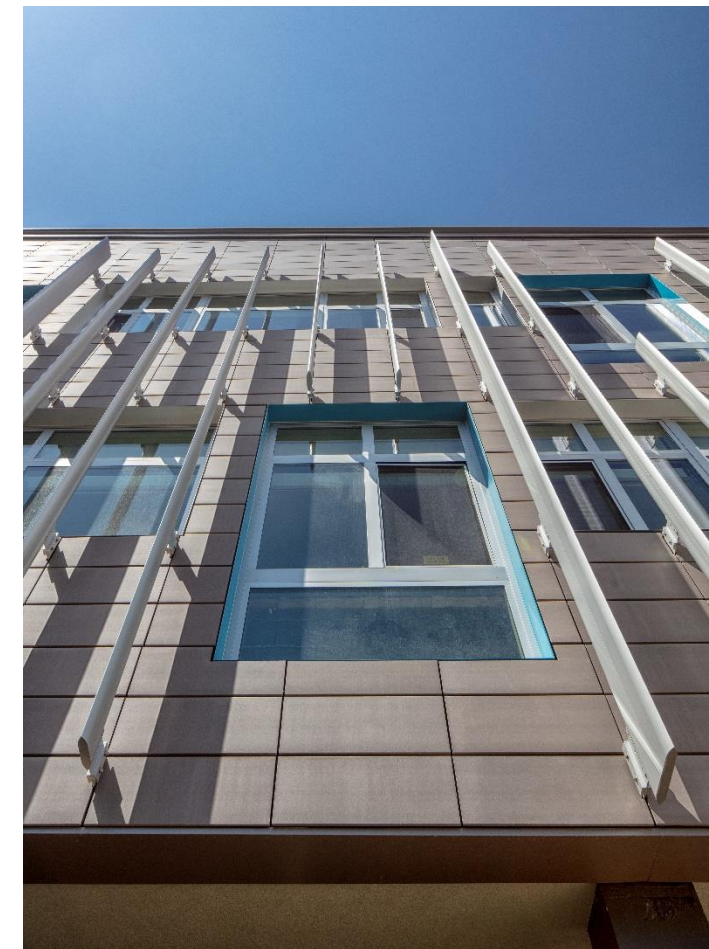
PROCESS

TIMELINE

Design: 2015-2016
Construction: 2017-2018
Post Occupancy: 2019-Present

PROJECT PARTNERS

Architect: Ashley McGraw Architects
Construction Manager: Turner Construction Company
General Contractor: MCK Building Associates
Structural Engineer: St. Germain & Aupperle Consulting
MEP Consultant: M/E Engineering
Testing Agency: CME Associates, Inc.
Environmental Consultant: Energy & Environment, LLC
Electrical Contractor: Huen New York, Inc.
Mechanical Contractor: HMI Mechanical Systems
Plumbing Contractor: Bellucci Enterprises, Inc.
Roofing Contractor: Pulver Roofing Co., Inc.
Furniture: Syracuse Office Environments
Post-Occupancy Evaluation: Vaysen Studio





BACKGROUND

As Westhill High School already has a high level of academic performance and graduation rates, the administrators and faculty began thinking beyond the academics. Preparing the students socially and emotionally for their advanced academic and professional pursuits became the focus. When Westhill Central School District set out to change the culture of education in a way that would empower students to direct their own learning paths and grow their social and emotional skillsets, the design team and stakeholders began researching active learning environments and educational delivery in primary, secondary and collegiate learning environments.

A 2015 Gallup Student Poll, "Engaged for Today, Ready for Tomorrow," has shown that as student moves through their primary and secondary education, levels of engagement with their studies drop drastically. A group of more than 900,000 U.S. public school students enrolled in grades 5-12 were polled and the results indicated that levels of engagement peaked at fifth-grade with 75% engagement and steadily decline until it bottoms out in eleventh-grade with only 32% of students reportedly engage.

To understand why this is happening, it is important to understand the teaching methodologies in practice. The Industrial Age educational systems are still very present in today's classrooms. These systems were originally organized to create a standardization of the learning process where a pre-set curriculum is delivered to a pre-set of people, divided into what we recognize as grade levels.

This model allows for students to gain specific skills and basic understanding of content areas that can then be tested and measured against the system's standards. Though this model excels in creating an efficient way to deliver education to a large group of students, it does not create an equal opportunity for all the students.

The trend is rapidly changing from this Industrial Age, "sit-and-get" model of education to one that is more personalized to the individual student. Studies have indicated that the more active a student is with their lessons through conversational and experiential learning, the more engaged they will be resulting in a higher level of retention. Due to this shift in thinking on how an individual learns, the traditional method of educational delivery and the built environment that it requires has changed.

Since it is now recognized that educational delivery and the built environment both play a key role in how a student learns, conversations on the shifting paradigm have become an important aspect of creating educational goals and aspirations for Westhill Central School District. It is widely understood that implementing change requires the infrastructure to do so. In order to better understand the infrastructure needed to support the educational goals, Westhill and Ashley McGraw Architects collaborated in a participatory design process that encouraged stakeholder engagement in designing the physical learning environment.

PROJECT GOAL

To change the culture of education in a way that encourages student-centered learning so that students will become confident, resilient, and self-disciplined learners.

EXECUTIVE SUMMARY

The term "Student-Centered Learning" is an instructional model where a teacher shares the instructional responsibility with their students. In this model, students are encouraged to take an active role in exploration, experimentation, and discovery in a particular content area or lesson.

In 2019, Vaysen Studio began conducting a design study on the first phase of Westhill High School, located in Syracuse, New York. The goal was to analyze the outcomes of incorporating design and instructional strategies within the third floor renovation of the academic building. The study focused on qualitative measurements of the successes and short-comings of the implementation of the student-centered education on the third floor as well as measurements of change in skillsets seen from the students occupying the renovated environment. The skillsets identified were taken from the District's Board of Education goals identified for the 2018-2019 school year.



The wall system is a high performance terracotta-rain screen with aluminum shading fins incorporated into the design based on daylight study analysis to reduce heat-gain and glare in the classrooms.

Exterior Envelope

Visual connections between the corridor, classrooms, and small group rooms allow for supervision of the collaborative neighborhoods. The visual connections also serve to celebrate the learning.

Security

Connection to Nature

The North and South ends of the building were opened up with glazing to provide connection to nature as students pass through the corridor.



The area of the windows within the classroom was increased to maximize visual access to the outside. Daylighting analysis showed that vertical shading fins would provide mitigation for glare and heat-gain concerns. This design solution of aluminum vertical shading fins was meant to be both beneficial and demonstrative of building performance informing design decisions.

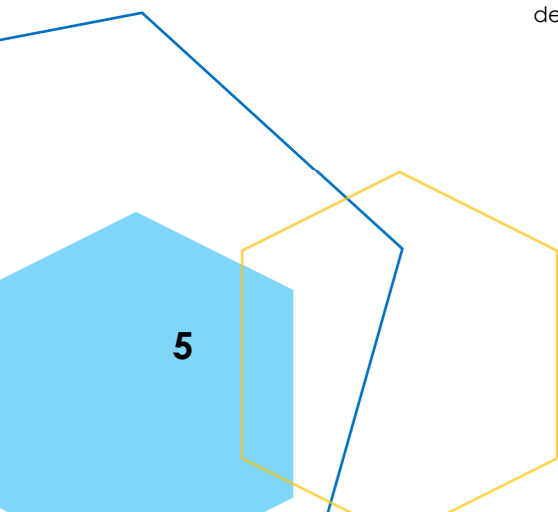
Within classrooms and science rooms, break out spaces are provided that allow students to access different technology and people needed to complete a given task. Walls and faces of casework are finished with magnetic whiteboards to encourage student interaction and collaboration. Within science rooms, the lab spaces are fully equipped the utilities required to complete their experimentations.

Learning Environments

Collaborative Neighborhoods

All areas of a building can present an opportunity for knowledge growth and idea sharing between students, their peers, and their teachers. The intent is to engage and encourage conversation of the lessons, research, and studies across the various disciplines and beyond the structured time frame of typical block scheduling.

Within the corridor, the traditionally straight thoroughfare is now jogged to create a meandering corridor broken up by two collaboration neighborhoods that prominently puts on display the collaborative, student-centered culture that Westhill High School is striving to emulate.





THE POST-OCCUPANCY EVALUATION

The evaluation of the third floor renovation at Westhill High School serves as a way to test the design and instructional strategies implemented during the project's first phase. The lessons learned from this study will directly impact the future design of the learning environments to ensure alignment with Westhill's educational initiatives.

Using the hypothesis that designing student-centered learning environments will encourage a change in the culture of educational delivery and improve a student's 21st Century skills, a design study was conducted by Vaysen Studio in 2019.

The primary objectives for conducting this study were:

- To analyze the design team's success in implementing the project goals;
- To see how the faculty and students of Westhill are adopting the Student-Centered Learning initiatives,
- Identify lessons learned for future projects with not only Westhill, but other clients as well; and
- Develop a standardized process for evaluating the K12 projects completed by Ashley McGraw and Vaysen Studio.

The study involved a collaboration between Vaysen Studio, Ashley McGraw Architects and the administrators of Westhill Central School District including the District's Superintendent and the High School's Principal and Assistant Principal. In addition to implementing the evaluations and surveys provided by Vaysen Studio, the school's administrators have also been providing continued feedback on the outcome on how the culture of education has been impacted on the third floor of the High School's academic building.

Missing from this study is an established Pre-Occupancy Evaluation (Pre-OE) benchmark for the Post-Occupancy Evaluation (POE) comparison. Additional surveys and evaluations will take place for the unmodified spaces on the first and second floor with the goals:

- To analyze how the instructional model differs for similar subjects taught on the different floors,
- Present a sampling of students and instructors on the first and second floor (Pre-Renovation of Phase II) with the same survey questions relating to 21st Century Skills that were administered to the student on the third floor (Post-Renovation of Phase II), and
- Compare how test results and overall GPAs differ from last year to this year for the classes that moved into the renovated spaces on the third floor.

Information was gathered from the occupants and the administrators through the means of informal conversations and observations as well as a formal online survey given to the faculty and students. The survey was conducted 6 months into occupancy of the third floor. To maximize the response rate and receive a diverse sampling of responses, we requested all students and faculty occupying the third floor during the first period of the day provide feedback. We received 100% participation from the faculty and students with a total of 12 faculty members and 140 students responding to the online survey.

The study focused on gathering qualitative data to assess the occupants' perceptions on how the renovated third floor impacted the culture of education, student-centered instructional models and the use of 21st Century Skills at Westhill High School.



THE RESULTS

Overall, the third floor renovation is well received by both faculty and students occupying the spaces. There are opportunities for improvement such as sharing with the occupants the intent of the different types of spaces and possible ways to use the design strategies implemented to help promote the educational initiatives. There were a handful of responses indicating that students were not aware of the how the designed spaces and elements were intended to be used prior to completing the survey and that they hope to have the opportunity to utilize them going forward.

"The collaborative culture is a lot more prevalent than before, and is very inviting to new ideas and different ways of doing things in the classroom."

- Student Response, Phase POE Survey, March 6, 2019

THE CULTURE OF EDUCATION

The main factors of the renovated third floor that contributed to the collaborative culture of education at Westhill were:

Students

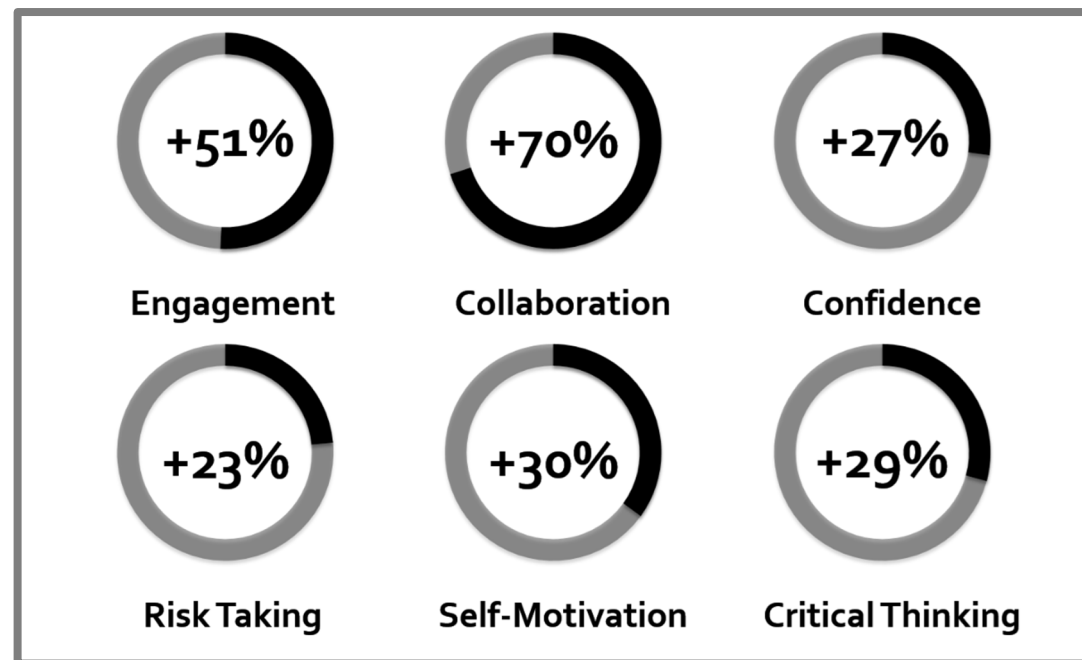
- Collaborative Neighborhoods (33%)
- Whiteboards (31%)
- Furniture (20%)
- Miscellaneous (16%)

Faculty

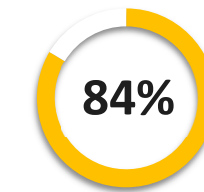
- Collaborative Neighborhoods (42%)
- Furniture (33%)
- Whiteboards (25%)

21ST CENTURY SKILLSETS

Students and Teachers were both asked how the renovation of the third floor has impacted 21st Century Skillsets of engagement, collaboration, critical thinking, confidence, self-motivation, and risk taking, as identified within the Board of Education Goals. 58% of students and 51% of teachers said student's engagement increased on the third floor. 84% of students and 70% of teachers stated that students' collaboration increased on the third floor.



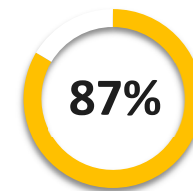
Student reported results of seeing improvements in the above listed skillsets.



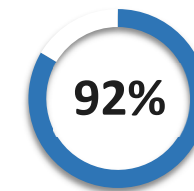
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INSTRUCTION
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Instruction

Within the realm of educational instruction, 84% of the students surveyed felt their classroom instruction promoted a student-centered educational model. They cited that teachers are encouraging more peer discussion and collaboration as well as allowing a level of independence for the student to explore a topic. Teachers have identified that their educational delivery has changed in the sense that they have incorporated more project based learning principles into their lessons. They also noted that they are more willing to have the students move throughout the room more to meet with peers and utilize whiteboards and small group areas.



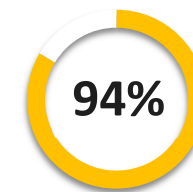
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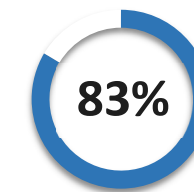
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Classroom Design

When asked if the design of the classroom encourages student-centered education, the faculty polled 92% in favor while the students polled 87%. The main reasons identified for why the classrooms support student-centered education were the whiteboards, spaces to collaborate and, in general, more opportunities to work in groups to share thoughts and ideas.



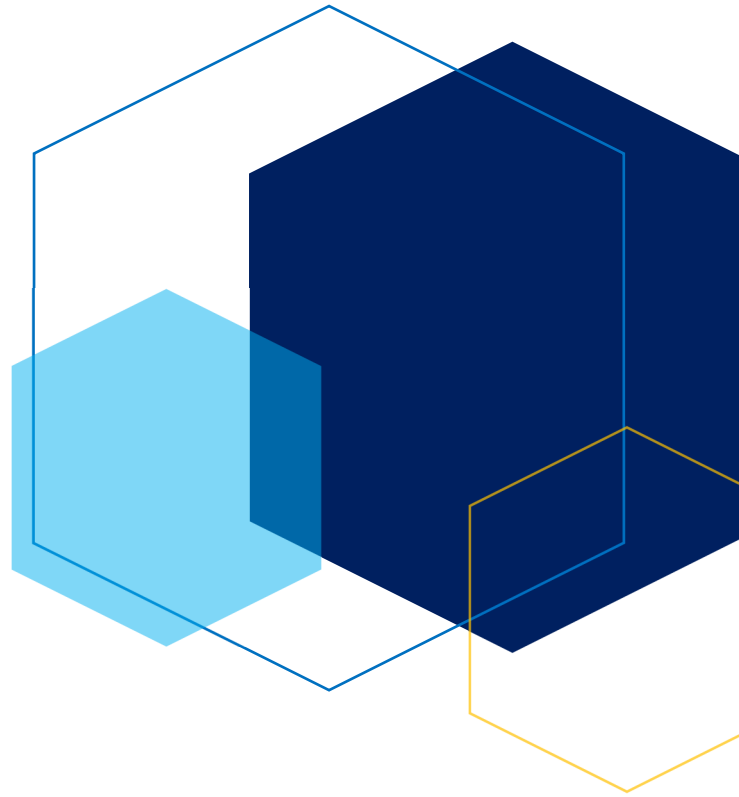
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Overall Design

When asked about the impact of the overall design of the third floor on student-centered education, the faculty responded favorably 83% while the students responded 94% favorably. Students expressed that the overall design was welcoming and allowed them to have more independence. Some students have responded that though they see the potential in the third floor, they are not always given the opportunity to fully utilize it. Teachers gave similar responses. They identified that students "own" their learning spaces when allowed to do so.



ASHLEY MCGRAW
+ Vaysen Studio



Susanne Angarano, CID, ASID
Founder/Principal
Interior Designer & Design Strategist
susanne@vaysen.com



Catherine Wolfe, CID, ALEP
Learning Environment Strategist &
Interior Designer
catherine@vaysen.com

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on design strategy and interior design.
We create harmony between people
and the places they inhabit.**

