

CHIARAVALLE MONTESSORI SCHOOL, NORTH WING ADDITION





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- I. EXECUTIVE SUMMARY
- II. SCOPE OF WORK & BUDGET
- III. SCHOOL & COMMUNITY ENGAGEMENT
- IV. EDUCATIONAL ENVIRONMENT
- V. PHYSICAL ENVIRONMENT
- VI. RESULTS OF THE PROCESS & PROJECT

EXECUTIVE SUMMARY

When Chiaravalle Montessori School purchased its building from the city of Evanston in 2010, a prime improvement target was a two-story, 68-year-old gymnasium wing addition off of the original three-story historic 1898 structure designed by Daniel Burnham. The goal was to create a space that transitioned 21st century Montessori learning into action, embodying Maria Montessori's concept of free activity within a "prepared environment" tailored to specific characteristics of children. The resulting 19,000 sf North Wing is both a reflection of Montessori principles and the idea that form follows function – that teaching and learning should shape the building, not vice versa.

SCOPE OF WORK AND BUDGET

- Capacity (Students): 310
- Site Size (Acres): .53 acres ("lot area")
- Gross Area (sf): 19,000 sf
- Project Cost Total: \$8,580,000

SCHOOL & COMMUNITY ENGAGEMENT

When developing the North Wing, Chiaravalle and the design team had to consider the needs and wants of two primary groups: students, parents and staff of the school, and the neighboring community of Evanston. They used a robust discovery process to ensure all parties had a chance to express thoughts and offer insight. The process included observing and shadowing workshops, uncovering patterns and opportunities, and interviewing parents and students for first-hand insights. A student design lab helped spur creative thinking and ideas from students. A survey helped refine building themes, and gathered thoughts from Chiaravalle educators, families and its staff/board.

The discovery process exposed several challenges. The North Wing needed to serve as a space conducive to multiple program needs, meaning it had to be a flexible and adaptable environment. To complicate matters, the site area available to build was limited to the footprint of the existing annex being replaced. Additionally, any exterior materials and building massing used had to reflect the original Burnham building and gel with the surrounding community aesthetic. As a result of the discovery process and to respond to these challenges, three primary drivers were established. The North Wing would:

- Empower Montessori principles
- Achieve design goals
- Reimagine program areas

EDUCATIONAL ENVIRONMENT

“Education is a natural process carried out by the human individual, and is acquired not by listening to words, but by experiences in the environment.” – Maria Montessori

The North Wing needed to provide tools for independent exploration, create flexibility for different types of use and honor learning spaces as the students’ domain. To ensure the layout focused on human-centered design, the team used a four stage process:

- *Discover* (as previously mentioned): Observe and shadow classes; uncover patterns and opportunities; and interview parents and students for first-hand insights.
- *Activate*: Ease student transitions; support student independence; welcome families; and celebrate the Chiaravalle community.
- *Strategize*: Empower Montessori principles; achieve design goals; and reimagine program areas.
- *Launch*: Develop and implement the solutions; creation the architecture itself.

Another key factor to the development and design of the North Wing was to educate the human potential – Maria Montessori used this idea to create and guide the eight Montessori core principles:

- *Prepared Environment*: Considered one of two critical principles for Chiaravalle specifically, the idea behind establishing a prepared environment is that it encourages children to do things for themselves. The design team created the North Wing to be a collection of spaces that allow students to explore.
- *Movement & Learning*: Montessori education believes sensory-motor activities encourage the learning process and help develop cognitive powers. The Hub – an open, gathering and performance area located in the North Wing – was designed to encourage active learning.
- *Choice*: Similar to the prepared environment, Montessori education offers students the option to set their own learning pace and determine the projects they work on. The Hub, Da Vinci Studio, Global Learning Lab and Think Tank were created to assist with this process. For example, students focused on the Big Bang theory could act it out in The Hub, draw the various stages of it in the Da Vinci Studio, study the impact in the Library and discuss the timeline of it with fellow students in the Think Tank.
- *Interest*: Montessori classrooms help students absorb content through creating an educational environment that piques their interest. The Da Vinci Studio and Global Learning Lab were designed to create interesting environments for students to learn within.
- *Motivation*: Per Montessori standards, the education environment should inspire learning and engagement through incorporating elements like bright colors, spatial interest or other visually stimulating elements. The use of a gathering stair (instead of an enclosed stairway) connecting The Hub to the second level was implemented to encourage students to climb their way up to other educational spaces.

- *Peer Teaching*: Montessori education encourages multi-age classrooms and spaces combined with the curriculum to allow students to learn from and educate each other based on real-life experiences. The Think Tank, Global Learning Lab, Library and Hub were designed to encourage collaboration and student-to-student engagement.
- *Whole learning*: Whole learning is focused on “the four C’s:” critical thinking and problem solving; communication; collaboration; and creativity and innovation. The North Wing offers an interdisciplinary experience as reflected in its various rooms and spaces, and how the spaces are all connected to each other.
- *Earned responsibility*: The second most critical principle Chiaravalle identified was the idea that students should first take care of themselves, then take care of plants and animals, and then take care of others. Sustainable elements were implemented into the North Wing (mentioned later under the Physical Environment section) to help encourage student responsibility.

PHYSICAL ENVIRONMENT

Fast forward to the present day environment of the school. Physical features of the North Wing include a spacious and welcoming main entrance, parent cafe and adjacent central gathering space (The Hub) that strengthen school/community sense by providing comfortable spaces for parents and students to linger. A drama studio and another movement and music studio expand the school’s creative and performing arts offerings. The new gymnasium – double the previous facility size – accommodates multiple functions simultaneously. The centrally located library, Think Thank, a Global Learning Lab and a Da Vinci Workshop integrates art and design with the study of science, technology, engineering and mathematics.

The North Wing also features many sustainable elements – sustainability was considered important to the design as it corresponds with the principle of earned responsibility. These sustainable and cost-effective design features of the North Wing make it one of the notable projects recognized in USGBC’s 2016 Top 10 States for LEED (and LEED Platinum certified). Photovoltaic panels, a geothermal heating and cooling system, low-VOC materials and abundant natural lighting are just some of the features that set the school apart. Others include:

- Addition designed to consume 50.8 percent less energy than ASHRAE 90.1 2007 baseline
- On-site renewable energy through a 7kW roof-mounted photovoltaic array, which produces more than five percent of the building’s energy
- Vegetated roof covers roughly 30 percent of flat roof area
- Plumbing fixtures save 42.5 percent of water from baseline
- Zero parking spaces provided on dense urban site with access to public transit
- Recycled materials make up 42.4 percent of materials used on the project (by value)
- 71.7 percent of new wood products are FSC-certified (by value)

- 79.4 percent of core learning spaces utilize daylight, as are 76.2 percent of regularly occupied spaces

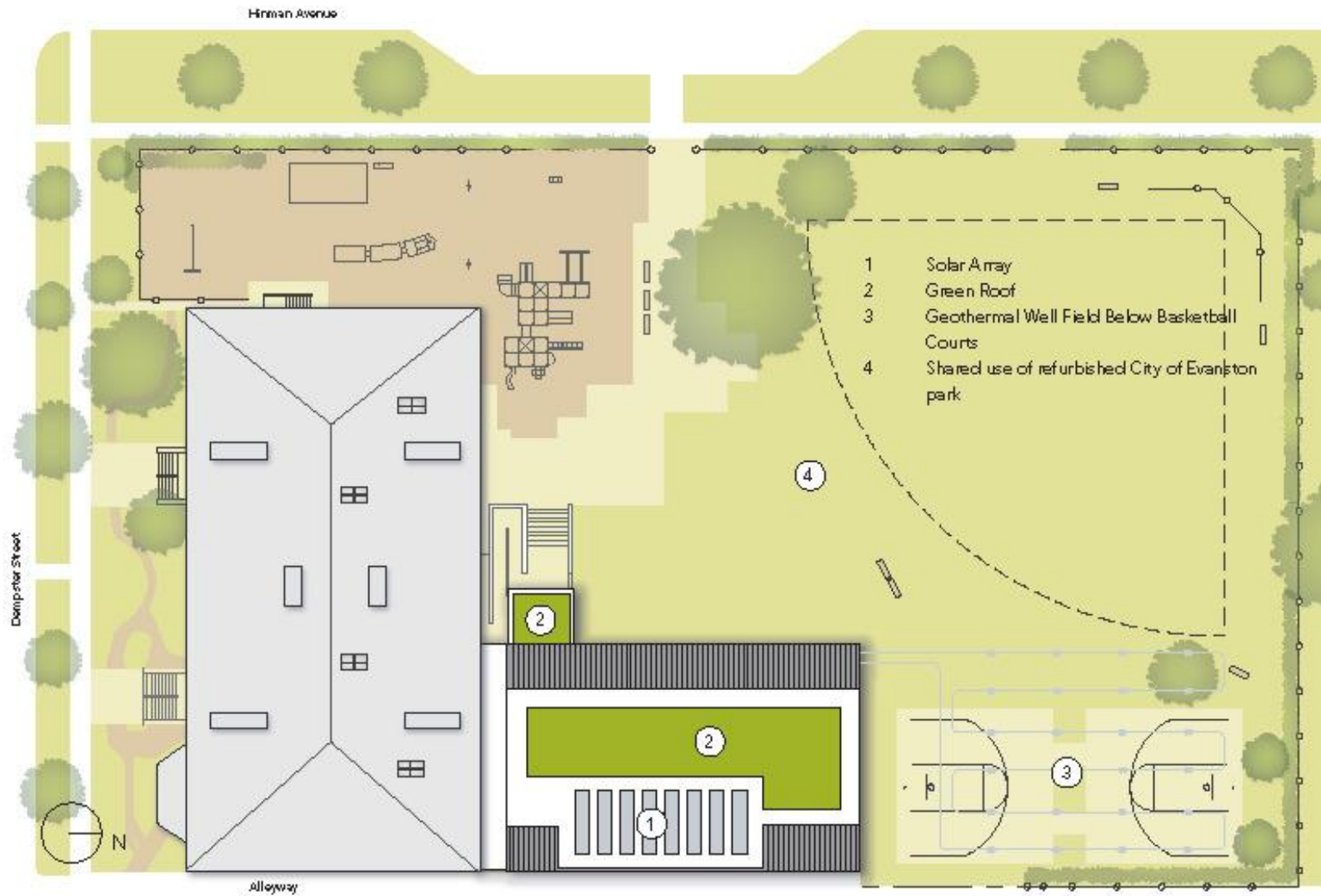
As Chiaravalle Montessori is located in a historic district of Evanston, Illinois, the North Wing features exterior panels by Resysta Façade that match the original brick color of the Burnham building, and help make the North Wing flow like a natural extension of the school.

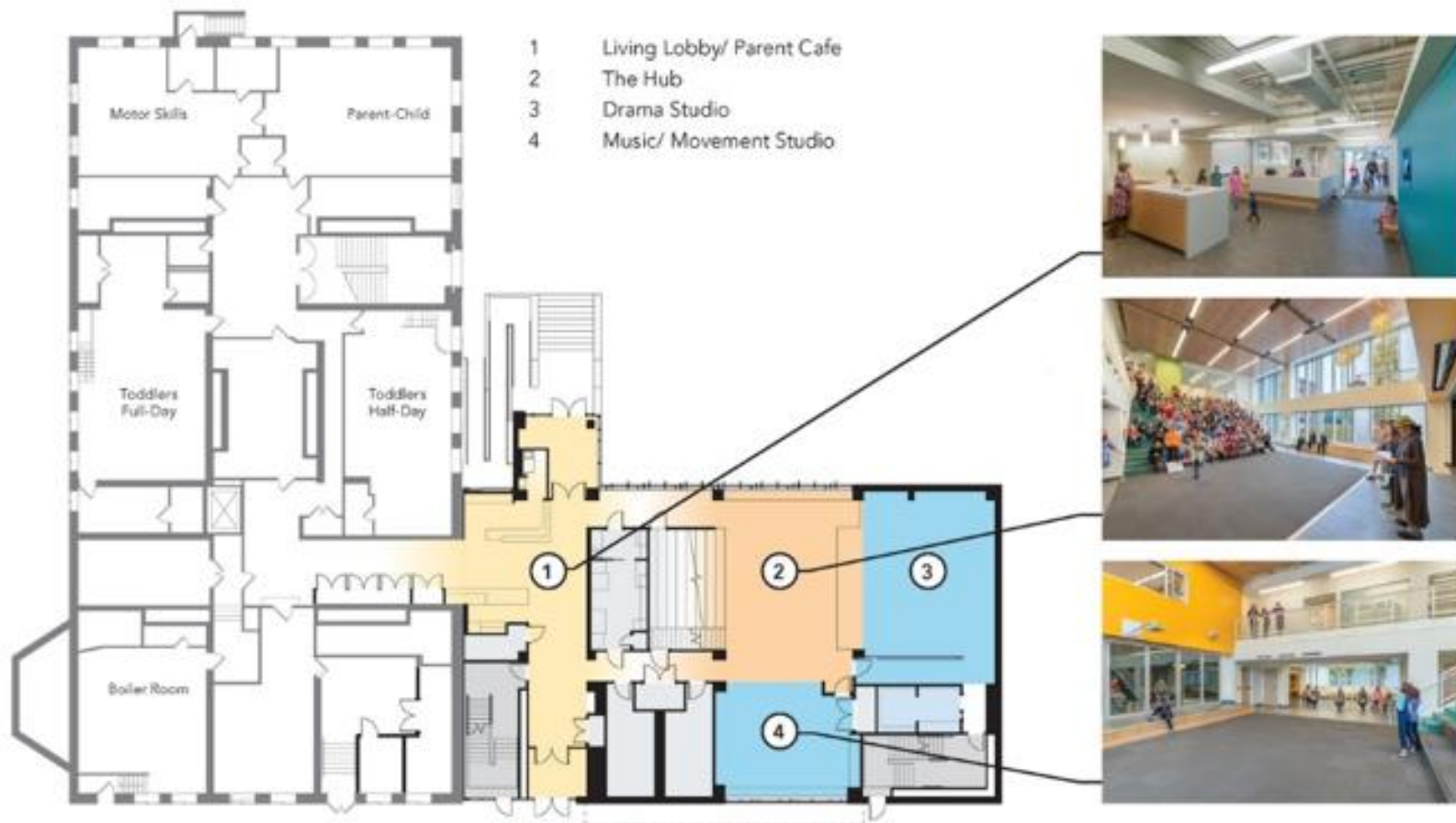
RESULTS OF THE PROCESS & PROJECT

The Chiaravalle Montessori North Wing needed to be a space that transitioned 21st century Montessori learning into action. It needed to embody the eight core principles of Montessori education. It needed to be sustainable. And it needed to reflect the design of its original building and the surrounding community. Through establishing a robust discovery process, developing spaces that physically represented and encouraged the eight core principles, and through implementing sustainable features that also helped it match its surrounding environment, the North Wing became a building designed for its function.

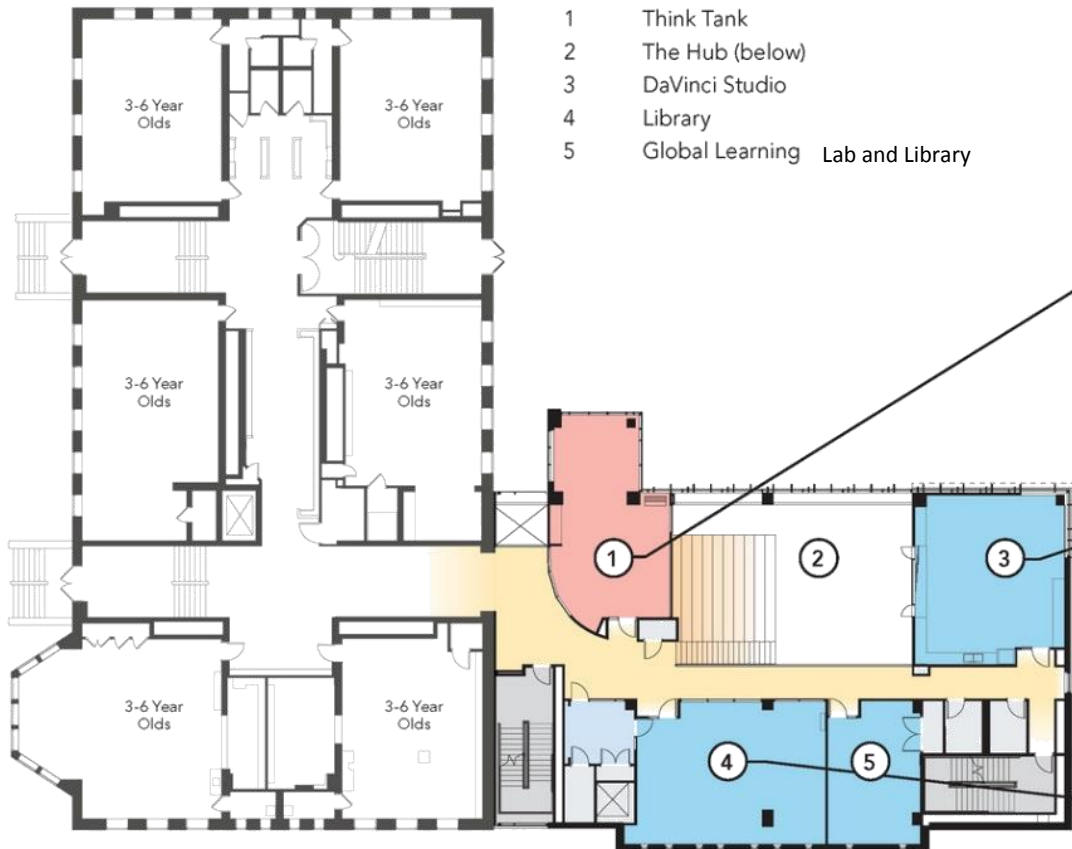
The wing has received positive response from students, staff and the community, as well as regional and national recognition – it was named a Green Ribbon School locally and nationally, and is LEED Platinum Certified by the U.S. Green Building Council. The success of the project can be best summed up by Matt Baker, writer Sustainable Chicago Magazine, who stated Chiaravalle is an example of how “progressive teaching methods beget progressive building design.”

SITE PLAN





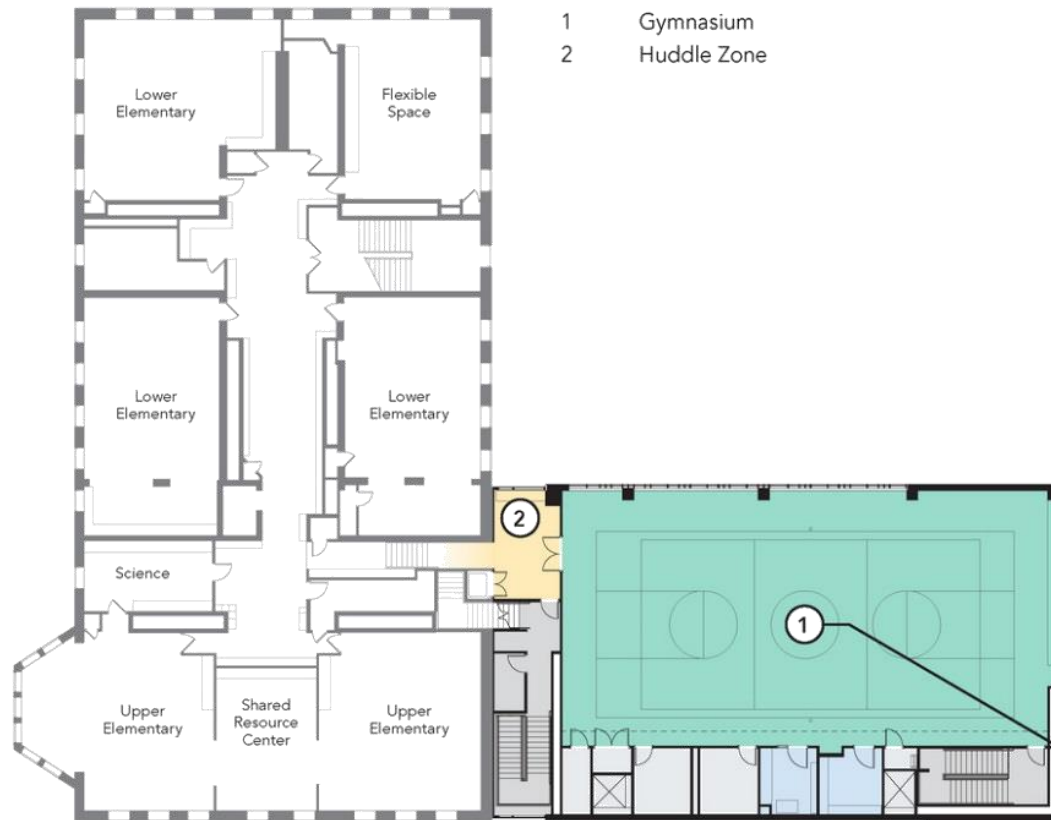
FIRST FLOOR



- 1 Think Tank
- 2 The Hub (below)
- 3 DaVinci Studio
- 4 Library
- 5 Global Learning Lab and Library



SECOND FLOOR

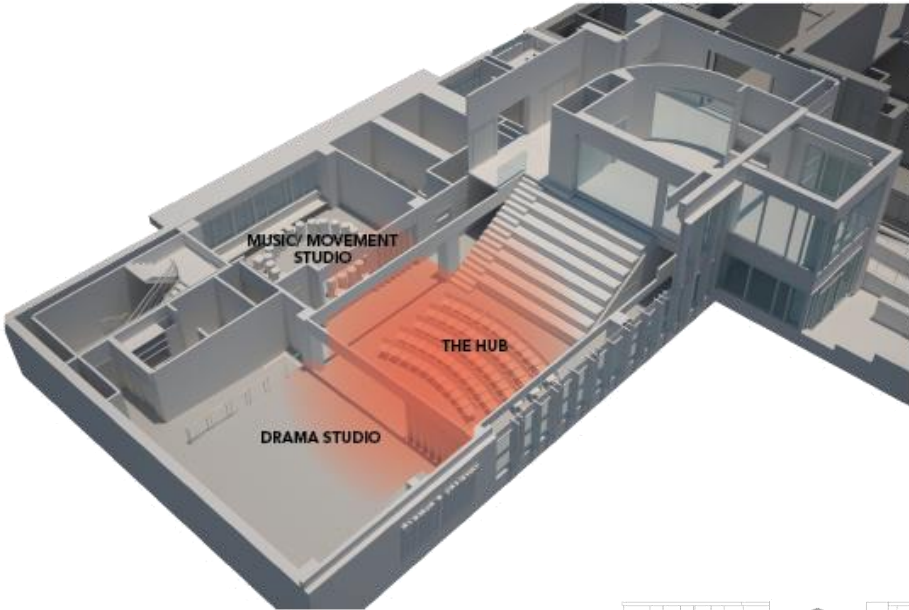


- 1 Gymnasium
- 2 Huddle Zone



THIRD FLOOR

BIRD'S EYE VIEW



- 1. LOBBY/PARENT CAFE
- 2. THE HUB
- 3. DRAMA STUDIO
- 4. CIRCULATION
- 5. THINK TANK
- 6. DAVINCI STUDIO
- 7. GYMNASIUM



NORTH – SOUTH SECTION

LIVING LOBBY



THE HUB (VIEW FROM GATHERING STAIR)



THE HUB (VIEW FROM GATHERING STAIR)



DAVINCI STUDIO



THINK TANK



LIBRARY



SUSTAINABLE FEATURES PLAN



ORIGINAL ANNEX



NORTH WING

