

# EDUCATIONAL SPECIFICATIONS

## Brookfield Public Schools

**DRAFT**

Issue Date: 3/15/19



*Create Your Tomorrow*

**BROOKFIELD PUBLIC SCHOOLS**

**BROOKFIELD, CT**

**APPROVED:**

BROOKFIELD BOARD OF EDUCATION

**DATE:**

IN PROGRESS

# New School Construction to Replace Huckleberry Hill School

## Educational Specifications

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### Introduction to Brookfield

Situated along the Housatonic River Valley, Brookfield is a suburban community and home to 16,500 residents. The Brookfield Public Schools enrolls approximately 2,700 students who attend one of four educational facilities: Center Elementary (Pre-K-1), Huckleberry Hill Elementary (2-4), Whisconier Middle (5-8) and Brookfield High School (9-12).

## SECTION I - RATIONALE

In August 2016 the Brookfield Board of Education (BOE) established The Strategic Schools Facility Committee who subsequently commissioned Tecton Architects to analyze and conceptually design the best option for educating students from the two District elementary schools and the fifth graders who are currently housed at the middle school. The scope of work included a master plan of the existing facilities and the creation of a long range plan for the district. This work included updates to demographic projections, comprehensive existing conditions analysis of the existing facilities, planning options, and the development of a conceptual design for the preferred option.

Our current K-8 school configuration consists of Center Elementary School (CES) Grade Pre K-1, Huckleberry Hill School (HHES) Grades 2-4 and Whisconier Middle School (WMS) Grades 5-6. The school design that resulted from the efforts of the Strategic Facilities Committee will be performed in accordance with C.G.S 10-286 regulations and in accordance with the Town of Brookfield Charter regarding public school projects.

The Committee, after several months of research and engagement with the Town and stakeholders, plans to build a new school on the undeveloped west side of the Huckleberry Hill campus with a portion of the related site amenities and an additional egress on the town-owned Nabby Road parcel.

- Students and staff will be able to remain at all three schools (CES, HHES, WMS portables) while the new school is built, eliminating any disruption due to construction.
- Huckleberry Hill is 59 years old, Center School is 81 years old and the portables that house grade 5 students are approximately 50 years old. All facilities have outlived their useful life span.
- The mechanicals/utilities of each facility are inefficient.

Once the new school is constructed and ready for occupancy, the existing Huckleberry Hill facility will be demolished. This option was selected as the result of an exhaustive, three-year community input process, feasibility study, and inclusive of a facility conditions study with Tecton Architects. The study investigated multiple options, including maintaining the facilities as they exist and developing capital plans for each school all the way to the ultimate decision to build a brand new school to educate all PreK – Grade 5 students in Brookfield. Eight formal options were considered by the Strategic School Facilities Committee. The Committee consisted of BOE members, school district administrators, Municipal Building Committee members, educators, parents and residents.

The desire to pursue the study described above was initiated because of the aging condition of both CES (built 1938) and HHES (built 1964). Building systems at each school continue to present challenges and barriers to maintaining an adequate and safe environment that meet today's teaching and learning expectations. The infrastructure of both buildings is at or beyond the end of their useful life span. Furthermore, Grade 5 students are educated at the middle school in 50+ year old portables, detached from the rest of the school. Developing an environmentally safe and flexibly constructed school which provides access to all programs and spaces for students and faculty is a major driver for this New School project.

The updated demographic study presented to the BOE in August of 2018, prepared by Milone & MacBroom, considered the District's ten-year student enrollment projections. Contrary to trends found in many CT communities, including Brookfield, the recent enrollment figures indicate student enrollment projections steady with a slight increase in the number of students entering in the primary grades. For the purposes of planning for the new school and this education specification, the highest eight-year projection was used.

The final decision to reconfigure grades Pre-K - 5 was approved unanimously by the BOE in August 2018, followed by unanimous approval of the Boards of Selectmen and Finance and the Planning Commission. Accommodating a developmentally and academically sound Pre-K – 5 grade configuration aligns with the Committee's Pre-K - 5 proposal.

The reconfigured grade level alignment of Pre-K - 5, including the early childhood center (Grades Pre-K - 1) which will promote a smaller, “*school within a school*” environment, fosters a greater sense of community and unity of purpose by educating all of our elementary children in one school. While the cost of demolishing the existing HHES is built in to the plan, the Town will form an Ad Hoc Committee to study the possible future uses of Center School.

Aging Grade 5 portable classrooms at WMS will be demolished. This cost is also built into the proposed project budget. Moving the Fifth Grade students to the new elementary school will “right size” the middle school for the original three grade (6-8) configuration as it was designed. Middle School classroom spaces will then be freed up to provide space for innovative programs such as a world language lab, maker spaces, STEM labs and the arts. Additionally, much needed more specialized learning areas will become available for intervention, tutoring, OT/PT, etc. This New School plan, often referred to as the “perfect plan” impacts almost 80% of the students in Brookfield with one comprehensive project. It also minimizes disruption to students and staff and cuts construction time in half in comparison to a renovation/addition project.

The New School project will allow for implementation of programming requisite to provide a 21<sup>st</sup> century educational experience that aligns with and fulfills the promise of the District's Strategic Coherence Plan goals of providing highly individualized, inquiry-based learning in a digital learning environment with flexible and adaptable spaces for the District's youngest students. Not only are our existing facilities not adequate in size and infrastructure to facilitate and accommodate 21<sup>st</sup> century learning, they require extensive ongoing repairs which contributes to interruption of services, while draining capital funds. It is throwing good money after bad to remain sub-par. Providing a balance of reasonable class sizes in an optimal environment is fundamental and paramount to the Brookfield Public Schools; helping students *Create Their Tomorrow*. Through multiple forums, input sessions, town presentations and surveys, stakeholders have emphatically expressed support for high quality facilities to address our strategic goals of communication, innovation and creative problem solving, critical thinking, connection, collaboration and character development. The remainder of the document outlines the Educational Specification for the New School project.

## SECTION II – BROOKFIELD PUBLIC SCHOOLS

The District's Mission is **to inspire, challenge and prepare all students to live meaningful and productive lives**. This mission statement provides the foundation for the identified attributes of a successful graduate by explicitly stating that critical thinking and problem solving, communication and collaboration, creativity and innovation are essential elements of a Brookfield Public School education.

The new Pre-K – 5 school will provide students with a quality learning environment designed to support the instructional experiences of an inquiry-based curriculum aligned to current standards. In a building with space designed for a variety of hands on/minds on learning opportunities students will develop skills and an appreciation for the visual and performing arts, health and physical fitness, and enriching extracurricular activities. In addition to engaging academic learning experiences the new school will provide the opportunity for teachers to immerse students in educational technology, as digital learning tools will be intentionally integrated throughout all facets of the new building design.

## SECTION III – LONG RANGE PLANS

### Strategic Coherence Plan

The Strategic Coherence Plan serves to guide the current and future work of the Board of Education, community, and educators. The District Implementation Plan (DIP), as a living document, will be continuously evaluated and updated in alignment with the Strategic Coherence Plan. Additionally, each school team will annually evaluate and update their School Improvement Plan (SIP), as aligned to the DIP, in response to measured and observed student needs. Furthermore, the personal performance goals of administrators and teachers will be aligned with the SIP of their respective buildings. The relationship of the Strategic Coherence Plan, the District Improvement Plan, and the School Improvement Plans is both dynamic and symbiotic. Ultimately, it is this relationship that will empower all components of the school system, intentionally driving the progress of the district to best serve Brookfield students.

We have articulated several core areas of focus:

*Communications & Collaboration*

*Critical Thinking & Problem Solving*

*Creativity and Innovation*

*Character & Connection*

The world around us has changed. With the advent of the digital age and the global economy, the definition of what it means to appropriately prepare a student for life learning and work beyond school has been transformed. Content knowledge is no longer enough to ensure student success – there is a growing consensus that a definable set of skills is needed for all students to help them prepare for the challenges they will face. Without these skills, students will have limited choices and will not have the ability to appropriately adjust and learn as circumstances and opportunities change throughout their lives. This Strategic Coherence Plan is designed to determine, plan for and ensure that Brookfield Public School graduates develop the skills (critical and creative thinking, problem solving, effective communication and collaboration) and the content knowledge they need to succeed - regardless of their future path of choice. The actions identified by the plan outline what needs to happen to realize this vision.

Ultimately, we must ensure that all Brookfield students graduate ready to succeed in the 21st century global community. While building upon the attributes currently in place in Brookfield, the members of the Strategic Coherence Planning team have identified necessary actions to guide the work for the next five years. As the proposed actions are implemented, the district-wide focus will increasingly spotlight how students can demonstrate the degree to which they have mastered content, critical/creative thinking, problem solving, communication, and collaboration.

Students will engage in rigorous learning activities and receive specific, personalized feedback to guide them as reflective, self-directed learners and problem solvers. Moreover, vertical alignment, from kindergarten to graduation, will ensure continuous measurable growth towards district goals, which will be communicated to students, parents, and the community.

Budgets and resources will reflect the district's commitment to support the success of all students. To improve professional practice and build student capacity for critical/creative thinking, problem solving, communication, and collaboration, the district will build upon current successful practices, while creating the instructional space for teachers and students to meet the goals of the Strategic Coherence Plan.

## Board of Education Strategic Goals: 2018-21

When the Board of Education adopted its five-year Strategic Plan in 2016, it was structured into key focus areas, each with goals and sub-goals. The underlying objective is to propel the Brookfield School District and its students to excellence. The four cornerstones of that framework are:

- **Goals for Learning– What We Teach & Why We Teach It**  
*A master curriculum strategy, which fosters coherence across subjects and grades, and drives to the highest levels of quality education and achievement for our learners.*
- **Teaching for Learning– How We Teach & Continuous Improvement**  
*A plan for excellence in our educators and leadership, focusing on differentiated instructional strategies and provision of feedback to support all learners.*
- **Measures of Learning– When We Know Our Students Have Learned**  
*Improved use of assessments and measurements, focused on improving educational results.*
- **Coherence of Systems & Structures**  
*Aligned school operations to best support quality education, including efficient well-controlled business management, technology capacity, facilities and communications.*

**The above Strategic Coherence Plan Goals are further refined into District Implementation Goals.**

1. **Leadership Development and Capacity Building:** Through leadership development Brookfield educators will collaborate in professional learning communities that foster continuous improvement, innovative and high leverage instructional strategies, and lifelong learning. Through ongoing reflective supervision and feedback, professional development will be targeted to students' and staff's learning needs.
2. **Student Achievement:** Increase the academic achievement of all students ensuring that every student has access to rigorous, high quality, vertically aligned K-12 learning experiences by providing students opportunities to problem solve, comprehend increasingly complex texts, and write cohesive, evidence supported arguments. Instruction will cognitively engage students through highly effective teaching strategies, including the integration of computer technology; the use of student data to drive instructional decisions; and job embedded, ongoing professional development.
3. **Curriculum, Instruction, and Assessment:** Curriculum (what we teach), instruction (how we teach), and assessment (how we know students are learning) are at the heart of the work we do in the Brookfield Public Schools to ensure that every Brookfield High School graduate is empowered to become a critical thinker, problem-solver, effective communicator, global citizen, and life-long learner through rigorous, relevant and comprehensive educational experiences, expansive student opportunities, and active community involvement.
4. **Culture, Climate and Communication:** Students learn best in a physically and emotionally safe and supportive school environment that promotes student learning by fostering self-reliance, willingness to share ideas, positive relationships, and a sense of belonging to the school community. A positive school climate nurtures mutual respect, listening to others, and assuming responsibility. Each school and the district will provide ongoing communications and build partnerships among students, staff and other adults in the school community.

## District's Core Beliefs

- **Comprehensive Education:** We hold as a value that the district will provide an educational program that spans a wide range of curricula that can accommodate all children in meeting their educational needs.
- **Safety:** We hold as a value that all students and staff and other member of the school community will work in an environment that secures their physical and emotional well-being.
- **Life-Long Learning:** We hold as a value that all students will learn the necessary skills and receive encouragement to be active and inquisitive learners throughout their lives.
- **Citizenship:** We hold as a value that all students will be taught that the obligation they have as citizens is to fulfill their civic responsibilities to their community, state and nation.
- **Respect:** We hold as a value that all students will hold themselves in high esteem and treat all others as they wish to be treated.
- **Continuous Improvement:** We hold as a value that all students and staff will continue to grow through ongoing experiences that fulfill their needs and enrich their knowledge.
- **Rigor:** We hold as a value that all students will be challenged with a comprehensive array of high-quality programs that enables them to expand the limits of their abilities.
- **Communication:** We hold as a value that all students will be taught and encouraged to articulate thoughts and ideas using oral, written, and non-verbal communication in a variety of forms and contexts integrating the array of communication resources available to them.
- **Responsibility:** We hold as a value that all students and staff will be accountable for their decisions and their actions.
- **Integrity:** We hold as a value that all students and staff will demonstrate an adherence to moral and ethical principles rooted in a sense of honesty and truthfulness.
- **Collaboration:** We hold that all students and staff will work effectively and respectfully with one another in groups to achieve common goals.

### The District is currently organized with three levels:

- Two Elementary Schools
  - Center Elementary School serving Grades Pre-K - 1
  - Huckleberry Hill School serving Grades 2 - 4
- One Middle School serving Grades 5 - 8
- One High School serving Grades 9 - 12

The Pre-K school at CES serves children from ages 3 - 4. As there are no magnet schools located within the District, Brookfield has an arrangement with the Danbury Public schools for 43 seats at The American International School (AIS).

The proposed plan will reconfigure Pre-K – 5 into one New School, consolidating the four schools to three. Center School will be repurposed by the Town, Huckleberry Hill and the portables housing Grade 5 at the Middle School will be demolished.

The proposed District organization (Option C) will consist of three total schools:

- One Pre-K - 5 Elementary School
- One Middle School serving Grades 6 - 8
- One High School serving Grades 9 - 12

Special Education programs will continue to be provided within each school with students receiving specialized instruction and programming necessary for a free and appropriate education for all students.

## **SECTION IV - PROJECTED STUDENT ENROLLMENT AND PROPOSED PROJECT CAPACITY**

As discussed earlier, our schools have recently experienced a leveling-off of the prior 10-year enrollment decline. Furthermore, our primary grades, specifically, Pre-K is experiencing a significant enrollment increase with many children identified with special needs from Birth – 3. Consultants Milone & MacBroom do not have quantifiable housing data that correlates directly to student enrollment increases, however, birth rates indicate that we are on an incline in Brookfield. Evidence suggests that available housing (single bedroom condominiums through traditional Brookfield, large single-family homes), coupled with a reputation for high quality public schools, a civilly engaged citizenry, major recreational areas and activities, low taxes, and proximity to New York, makes Brookfield an attractive location for growing families with school-aged children. Access to major highways and train lines situates Brookfield in a convenient location in northern Fairfield County, which is a draw for many commuters and homebuyers. Milone and MacBroom’s School Enrollment Study and subsequent updates (June 2018) considered demographics, housing and enrollment patterns, and other information to develop the District’s projected student enrollment through the school year 2027-2028.

The Study shows a general increase in student populations through 2027-2028 with enrollment in grades Pre-Kindergarten through Fifth Grade anticipated as follows:

<i>Pre-Kindergarten</i>	39
<i>Kindergarten</i>	153
<i>First Grade</i>	177
<i>Second Grade</i>	197
<i>Third Grade</i>	176
<i>Fourth Grade</i>	182
<i>Fifth Grade</i>	213

Total students in Grades Pre-K - 5 are expected to peak in year 2025 to 2026 at approximately 1,137 students. As required by the state of CT, these figures are based upon highest enrollment within an 8-year period.



## SECTION V - LEARNING/EDUCATIONAL ACTIVITIES

The primary purpose of the Brookfield Public Schools is to inspire, challenge and prepare all students to live meaningful and productive lives. Improving student engagement and learning and developing the whole child are paramount. The academic goals of our Pre-K – 5 school are aligned with the goals of the BOE approved curricula and are coherently integrated with the Connecticut Core Standards. The Brookfield Public Schools graduate profile is articulated below:

Research links environmental influences to students' learning. 21<sup>st</sup> century design concepts, environmental considerations and digital integration have the potential to increase student achievement more than ever before. Together, these design elements are a major vehicle to a globally envisioned goal of helping all children academically and also emotionally, socially and physically. Referred to as "21<sup>st</sup> Century Learning Environments", resultant research has articulated ideas that link the classroom environment with student learning.

**Outlined below are aspects of these 21<sup>st</sup> Century elements that are the fabric of the Brookfield Public Schools Educational Specification for the New School project:**

- **Collaboration**  
Productive learning environments possess learning spaces that promote and encourage collaboration inside and outside of the classroom. "Learning Commons" within the school are one strategy to inspire collaboration among students within the school community. These areas encourage collaboration between students, and also, *teacher to student* and *teacher to teacher*. Such spaces will incorporate these areas at all grade levels where collaborative, connection, creative and innovative problem solving activities can be accommodated. Areas in the school include open areas, shared outside classroom space, within the learning commons, art studio, music performance rooms, digital (stationary and mobile) learning labs, multi-purpose spaces and STEM inquiry rooms.
- **Student Centered Learning**  
A major focus of the Brookfield Public Schools mission is Student Centered Learning – to promote this most effectively for the student to be in action, that is, to do the learning. Spaces should provide environments that accommodate different learning styles and teaching delivery methods to engage all learners. Speech, literacy and math specialists along with resource and English language learner classrooms will be intentionally designed throughout the school. Special Education and other specialized instructional areas will be located near each grade level neighborhood. Such rooms will be devoted to individual or small group instruction. These spaces can also double as flex space within each grade level neighborhood for student and teacher collaboration. Accordingly, students should be provided the opportunity to utilize flex spaces as self-navigating individuals as best situates their learning needs.
- **Engagement and Interactive**  
Teaching methodologies, in support of our curriculum development work designed to empower learners will require the inclusion of interactive learning including access to advanced technology tools and the internet.
- **Exploration / Creation**  
One of the goals of our curriculum design efforts is developing individual learning plans for all students. This will promote student directed learning. Through digital and creating published works, student can experience the inspiration of inventing and the spirit of innovation by engagement in authentic inquiry. Areas to allow for curriculum

engagement and community collaboration such as displaying student work will be incorporated into common areas.

- **Play, Inquiry, Discovery**

Elementary Schools should inspire curiosity and exploration, fostering an environment that encourages children to be free to play and create.

- **Safety and Security**

21st century security design principles are planned for the New School. This school will be secure and designed so that students and staff are protected while also establishing a welcoming environment. The New Elementary School will meet State of CT Safety and Security Council Guidelines for Public Schools. All measures and systems are already being designed and coordinated with the Brookfield District Emergency Management Team.

- **Connection to Community**

Beyond school aged children, the school will serve as a learning center for the entire community. Increased utilization is incorporated into the conceptual design. Performance areas, cafeteria and recreation will be designed to provide large spaces to accommodate various school and community events, including voting, presentations, and the kitchen. The Registrar of Voters, Parks & Recreation department and local community groups have contributed to initial design concepts of the New School. The New School will be developed with showers and an adequate generator so the school can serve as a shelter for the West Side of Town, as there is currently no shelter for residents in this location.

**A brief overview of educational vision and program description for each content area is provided below:**

- **Visual Arts**

Our students utilize various media to create art while developing an understanding of art's role in history and culture, critically thinking about art and making aesthetic judgements utilizing argumentation skills developed across the curricula.

- **Music**

Our students learn musical skills and appreciation and awareness of music's influence on our culture. Our music program provides students with vocal, instrumental, and physical movement lessons with experiences in large ensembles such as band and chorus. Students performances and concerts occur during the school day and in the evening multiple times per year.

- **Physical Education**

Our students are exposed to a wide range of activities with emphasis on learning skills, positive social skills, and team interaction along with learning about the benefits of exercise supported by lifelong, healthy habits of body and mind.

- **Health**

Our students participate in a planned program of motivating experiences to promote a healthy lifestyle and social/emotional wellbeing. We prepare students to make informed decisions which promotes high quality individual, family and community health.

- **Language Arts**

The goal of the District is to help each student become a self-directed, strategic reader and writer that can determine a purpose for reading a particular text and then decide how to approach a writing or reading task. Students are immersed in an environment that explicitly and systematically addresses foundational oral language/discourse, focused on authentic purposes for reading and writing and incorporates a variety of quality fiction and nonfiction materials.

- **Mathematics**

The Pre-K - 12 Mathematics Mission of the District, in partnership with our colleagues, families and the community, is to develop mathematically literate members of society who engage in challenging learning experiences requiring communication, collaboration, critical thinking and creative problem solving. Students persevere as they apply what they learn in mathematics in a variety of meaningful ways.

- **Science / STEM**

In our District, STEM (Science, Technology, Engineering, and Mathematics) is an interdisciplinary approach to learning. Students explore and problem solve with authentic scenarios and challenges connected to real world applications. Students engage in inquiry and seek ways to improve their community and the world around them. Through productive struggle, students develop a willingness to take risks and communicate their ideas.

- **Social Studies**

The goal of social studies is to prepare all students to perform and understand their roles as effective citizens in a democratic and global community. Focusing on acquisition of knowledge, the development of skills that enable students to use that knowledge, and the opportunities to examine values in order to better understand themselves and contribute to society as individuals and members of the community.

## SECTION VI - OVERALL INSTRUCTIONAL DESIGN

Instructional Vision: The vision for our learners is clear, coherent and aligned with our district plan. Our daily goal is to ensure each student is challenged through student-centered, standards-aligned curriculum and instruction through rigorous inquiry process. We strive to develop our students to be independent, life-long learners.

Student-centered learning based upon inquiry will propel our students to *Create Their Tomorrow*. Inquiry has many implications for curriculum, instruction, assessment and professional learning, all of which are currently being addressed under the Strategic Coherence Plan road map. The instructional paradigm shift will also have implications for the learning space and how learners interact in the school ecosystem and community as discussed throughout this Education Specification. Space and environment implications also impact how we view time and student groupings.

Student-centered instruction and personalized learning are congruent with and articulated in the ideals of the Strategic Coherence Plan (the C's):

- Communication & Collaboration
- Critical thinking & Problem Solving
- Creativity & Innovation
- Character & Connection

To realize the District Vision and Mission we must plan for the physical environment (space) to be appropriately designed to align with the learning activities which support our student learning outcomes. The 19th and 20th century architectural paradigm (industrialized) of rows, chairs, classroom as boxes, etc. must give way to flexible spaces that can be transitioned for differentiated learners and learning activities. *Areas must support students as they create, explore, collaborate, write, and get “messy” in the work.* Walls that are transformable - such as partitions and garage doors etc. allow for flexibility, and multiple use spaces to accommodate a variety of student groupings, large and small.

### **Nexus of the Instructional Vision & Implementation**

- Strategic Coherence Plan
- District Implementation Plan
- School Improvement Plans
- Administrator Goals
- Teacher Goals
- Students Goals

*\*\*The above organizational alignment is developed based upon learning data gleaned from our assessment system*

## **SECTION VII - BUILDING SPACE REQUIREMENTS**

Programs will promote and emphasize the development of creative problem solving and critical thinking. In addition to instructional spaces (classrooms) some specialty areas such as maker spaces/art studios/STEM inquiry spaces will require slightly larger areas to accommodate hands-on learning, equipment, technology and project storage areas. A program description for classrooms and specialty spaces list is included. Detailed requirements for each space are described in Section IX of this Education Specification.

## **SECTION VIII - EDUCATIONAL SUPPORTING SPACES**

General Purpose Classroom Design and Layout are planned to be constructed. Each classroom Grade 1-5 will be approximately 800 square feet and built to accommodate 18-24 students per room, including a teaching station, file cabinets and furniture inclusive of student desks, worktables and flexibly designed seating, and instructional white board/touch screens. Secure storage for teacher's personal/confidential items, bookshelves and student project display areas (track boards). The early childhood center will consist of Pre-Kindergarten and Kindergarten classrooms containing approximately 1,200 square feet per classroom with a dedicated toilet, age appropriate, immediately adjacent to the space.

Flexibility and adaptable design for differentiated, student learning experiences is the foundation for the design of our classrooms. Group and independent work areas are also considered in the design of each room. All classrooms will have consistent instructional equipment and uniform design.

The front and back of the classroom will be the designated areas for presentations (both students and teacher). Our instructional model expects that students and teachers move about the classroom and includes the seamless integration of wireless technology. (See Section XIV re: technology). Reliability and ease of use of technology will be promoted with consistent equipment and integration into each instructional space.

For Grades 3 -5, student lockers will be located in the corridors just outside of the classrooms. All lockers will have a uniform design and include built-in lock functions for uniform security requirements and they will be sized to accommodate standard backpacks. K-2 rooms will utilize shelving/cubbies for personal storage.

For lockdown purposes, all rooms will be uniform in design and locking feature and function.

Commons/breakout spaces/pull-out spaces for small group learning or individual study/resources spaces are designed and located near the classrooms in each grade level neighborhood. These rooms will also serve, as necessary, for additional flex space within the classroom neighborhoods for teacher collaboration and to accommodate any changes in programming due to unforeseen legislation, or increase in enrollment. Again, flexible/modular seating along with worktables and chairs and touchscreen technology will be designed into these instructional rooms.

### **PLC (Professional Learning Center)**

Each neighborhood will have a teacher conference/meeting room designed for collaborative discussions, coaching, meetings, etc. A copy machine/printer will be included in this space along with a private phone.

### **Learning Support Spaces**

Pupil Personnel Services requires space to accommodate direct services to students in individual and group settings. In addition, quiet areas will be designated for assessment and evaluation.

Special Education and related services spaces will be designed as follows:

- 6 Resource rooms - one per grade for K through 5, located near the classrooms in each grade level neighborhood
- 5 Speech-language therapy rooms
  - 2 adjacent to Pre-K classrooms
  - 1 in proximity to Grades K and 1
  - 1 in proximity to Grades 2 and 3
  - 1 in proximity to Grades 4 and 5
- 2 Occupational therapy spaces
  - 1 near Pre-K and primary grade classrooms
  - 1 in proximity to Grades 3 through 5
- 1 Physical therapy space
- A classroom space for our Exceptional Learning Centers, which support student with autism and other developmental disabilities. These spaces will include kitchenettes.
- 2 classrooms for social/emotional programming
- 2 offices for School Psychologists and the School Social Worker

### **Creativity and Innovation Spaces**

Specialized instructional space accessible to all students is also designed in to the New School. These areas will be centrally located and are outlined below:

#### **STEM Inquiry Room**

A science, technology, engineering, math classroom for students to innovate, create, solve problems and perform experimental and investigative activities will be available to support student learning. Lab space will have storage cabinets and drawers for materials, equipment and access to technology as described earlier in the classroom section.

## **Multi-Purpose Room**

This large flexible educational space will accommodate up to 150 -200 students, depending upon configuration and layout. It will be appropriately designed for the acoustics of a music room. Equipment storage will be intentionally design into this space. Music playback, built-in speakers and other equipment will be incorporated into the design. Charging stations and storage will also be incorporated for equipment such as iPads, keyboards, etc. A large format touchscreen and sound system will also be incorporated. The room will be located so as to not disrupt academic or administrative office space. A private lesson room also will be incorporated into the design to instruct/rehearse with up to 10 students.

## **Music Room/Choral**

A second acoustically designed music room which includes design for equipment storage will be constructed to accommodate up to 100 students. The same design features will be included as described for the Concert Room.

## **Art Studios (Two)**

These two studios will be designed to accommodate up to 26 students each. Storage space for supplies and projects will be designed. The kiln and drying rooms will be shared and an office space will be provided.

## **Health Classroom**

A health education classroom is designed in our plan. This classroom provides for an additional classroom space should program and/or enrollment changes necessitate repurposing space. Our health program guides students in learning about themselves (physical and social/emotional/ academic) development and teaches students the attributes and benefits of promoting a healthy lifestyle.

## **Student Services Spaces and Suite**

The location of these office/conference areas will be accessible for students and teachers as well as by building administrators. Office/conference areas are outlined below:

- 2 School Psychologist's Offices
- 1 Social Worker's Office
- 1 BCBA Office
- 1 Social/Emotional Space (RULER Room) – for Quiet/Mindfulness

## **Library/Media Center (Learning Commons)**

Our Learning Commons will serve as a traditional, general purpose library/media center and also provide students with access to flexible/collaborative/digital learning areas, to support personalized and project-based learning. Inquiry-based learning, reading/reference materials and electronic resources will be integrated throughout the commons. A librarian/media specialist work office and circulation desk with a view of the commons is designed. Storage and workrooms are designed in proximity to the circulation desk. A teaching space with a touchscreen board will be provided as well to accommodate our classroom instruction for each grade level section. Furthermore, a presentation/story area will be incorporated into the commons. An acoustic amplification system will be designed for both school (student & faculty meeting) purposes and community use for presentation and meetings. Tables for collaboration and study will be incorporated throughout the Commons. A sink and worktable will be included.

The Learning Commons will provide students with a maker space including design for materials, tools and equipment for creative projects similar to the design of the STEM Room. Storage areas for supplies and equipment will be incorporated into this space. Finally, a digital video

recording/editing studio will be included for students to develop and broadcast a variety of media.

### **Community Programs**

Parental involvement and support is key in developing successful school programs. We will design a specific storage room for our PTO supplies, including built in shelving.

### **Health Office (Nurse's Room)**

The health office will be located near the main office in order to provide easy and convenient access for students and administrators and also serve students and for parents to pick up their children.

A reception/seating area for up to 5 individuals will be located near the entrance of the health office. Storage for supplies, an area for up to 5 students with privacy curtains for cots, one private exam room, a handicapped toilet and a locked medicine cabinet and refrigerator will be included. Sinks and other sanitary equipment will be incorporated to meet all health code requirements.

### **Food Service Area**

The cafeteria is anticipated to accommodate a student school capacity of up to 1,200 students served lunch in four lunch waves of up to 300 students for each wave. Students are allotted up to 30 minutes per lunch wave to pick up lunch, eat/socialize, dispose of garbage, and line up in order to accommodate the next wave. The serving line can accommodate three serving lines with an automated payment system. As they are currently, students will be provided a hot/cold entrée, beverages, salads, desserts and snack options in accordance with Federal and State guidelines. The District's food service provider will develop all final equipment requirements and menu offerings with the school administration.

The cafeteria will accommodate other uses throughout the day including evening events such as cub scouts, Parks & Recreation, etc. Projection and screen technology for presentations is included in the café design. A PA system will be included for use in the café as well.

### **Gymnasium Area**

The gymnasium is designed as a standard high school sized basketball court with bleachers. Locker room facilities accommodating up to 36 students in each room is necessary to support our physical education programs as well as community (Parks & Recreation) and possibly high school use. Metal lockers of full height and 12 inches wide will be provided. Bench seating for changing will be provided in each team/locker rooms. In addition to the main court goals, the gym will be equipped with retractable and height adjustable side court basketball goals and backboards.

The gym will be used for large game activities such as basketball, volleyball and other exercise programs. A large storage room for equipment will be provided. Multipurpose space located in the school will also be utilized for smaller space type exercise such as dance and yoga. One PE teacher office located between both locker rooms will be provided.

An automatic, divider partition wall, at mid-court, will accommodate multiple classes scheduled at the same time.

### **Stage/Performance Platform/Presentation Station**

A performance platform will be provided either at the gymnasium or at the cafeteria to accommodate a wide variety of student activities and performances. The platform area will

accommodate outside venues, student productions and projected large format motion pictures and be ideally located adjacent or near to the band/music area. This area will be provided with a curtain and theatrical lighting and voice/sound amplification system with built-in speaker system.

If possible, this area will be designed with a large operable door to open up to the outside for outdoor presentations, performances and gatherings.

Prop and equipment storage room will be included in close proximity to this area. This area will also be used to accommodate future string orchestra, as it may co-occur with band and choral ensembles. The space will need to be designed so that activity on stage does not interfere with PE classes and vice versa.

### **Main Office**

Designed for the administration and secretarial team, this central point of contact and communication, will accommodate security clearance for visitors. The office will accommodate an arrival and waiting area for up to 10 individuals, a customer service counter for staff, parents, vendors and other visitors. A principal, assistant principal and three secretaries, two conference rooms, two handicapped accessible bathrooms, an area for security check in, storage for supplies, a work area with a large copier and staff breakroom (with sink and refrigerator). A file room with fire resistant storage cabinets will be included.

A second smaller (main office) will have a similar but smaller scale design in the Early Learning Center area to ensure appropriate supervision of the separate entrance for this space. Two administrators (assistant principal and special education supervisor) and one secretary will be housed in this space which services students, grades PreK – 2. A conference will be necessary in this area to accommodate PPT's and other professional meetings. There will be no breakroom or bathroom designed in this administrative space. A reception area that can accommodate up to 10 people will be designed along with a reception desk.

### **Media and Technology Support**

An adequately cooled and ventilated server and storage room (MDF) will be provided to fully support the facilities' technology infrastructure that will include local storage servers; the building phone system; building security servers and equipment; and a dedicated fiber connection to Brookfield High School, which currently is and will continue to be the District's data center. There will also be 2-3 smaller networking closets (IDF) on each floor of the building to support the phone system; and a robust wireless infrastructure in all indoor classrooms, common areas, offices and outdoor classrooms; readily available network connections; and dedicated student computer access areas.

### **Faculty & Staff Lounge**

A Faculty & Staff break room for breaks and lunch will be designed. The space should include a kitchen space inclusive of a sink, refrigerator, microwave, oven/range and counter storage for upper/lower cabinets. Two bathrooms will be provided near the lounge. A copier / printer station with computer will be located within this space.

### **Mechanical and Custodial**

Non-instructional space to be used for building systems including mechanical and electrical systems, data closets, MDF/server rooms, shop and custodial maintenance areas, general building storage, employee locker and toilet areas, boiler room, sprinkler and water supply valves controls, custodian wet closets, elevator and elevator machine space. An exterior site maintenance equipment storage (mowers and snow machines, blowers etc.) will be provided with a separate exterior entrance. An outdoor storage area will also be provided for



maintenance equipment and storage as needed. Additionally, the boiler/systems room will have exterior access.

### **Maintenance storage and loading dock**

A building supply/receiving loading dock will be designed in proximity to the cafeteria and garbage pickup area. A space for efficient storage of custodial and maintenance supplies will be located within this area.

### **Playgrounds and Ball Fields**

A primary level playground/playscape structure will be located adjacent to the Early Learning Center. A similar and age appropriate playscape will be adjacent to the side of the school designed for the older children, a total of two outdoor playscapes are planned. Additionally, there will be two baseball/softball fields, both a 60 foot and 90 foot diamond with a multi-purpose play field overlaid to maximize the use. Paved play areas are also planned adjacent to the gymnasium area as well as the Early Learning Center.

Note, the three existing ball fields (60 and 90 foot baseball fields and the regulation soccer field) will be demolished to build the New School. Consequently, we have designed three brand new fields which replace the existing fields in new locations on the property. Not only will these three fields be available for student use during the school day, they will be available for Parks & Recreation use throughout the year during non-school hours.

## **SECTION IX - DETAILED DESCRIPTION**

### **General Classroom**

General Purpose Classroom Design - elements will include:

- Grades 1-5 will be flexible classroom arrangements with an approximate area of 800 square feet to accommodate 18-24 students per room.
- Pre-Kindergarten and Kindergarten classrooms containing approximately 1,200 square feet per classroom to accommodate 18-24 students per room.

#### **Finishes:**

- Floors - Combination of carpet tile for sitting areas, rubber or vinyl composition tile.
- Walls – Painted high impact gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc. Accent walls to have printed vinyl wall covering.
- Ceilings – Partially exposed/paint and./or acoustical hung ceiling, acoustical treatments.
- Casework/Woodwork – high quality plastic laminate on vertical surfaces, with solid composite worktop surfaces, where required, tile backsplashes to countertops.
- Doors & Frames – Solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, Electrical outlets for student and custodial use needed at locations.
- Wireless technology adapters throughout.

#### **Furniture and Equipment:**

- Teacher station and chair.
- Counter space or large tables at which students can work in the back or on the sides.
- White, tack and display boards.
- Student desks and chairs.
- Whiteboards in the front/presentation area.

- A telephone to the office in the front/presentation area.
- Closed bookcases and closed storage cabinets.
- A locking file cabinet.
- Small tables or desks for a radio and student computers/tablets.
- Carrels as quiet work areas.
- LED multi-touch interactive display (or current technology), 1 per classroom.
- Student computer/tablet charging stations.

Note: The general classrooms will house a variety of activities, from seated individual work to presentations and skits that require standing or movement. The space needs to be large and the furniture moveable enough to change as learning needs require. As with any other academic class, instructional, display and work surfaces are needed, as well as ample storage. Also, the room should have adjustable lighting, including windows that can be obscured and that open.

### PLC (Professional Learning Center)

This space would be designed to accommodate 4 to 8 people and would provide an acoustically separated space from the adjacent classrooms, but with some visual control. Activities that occur in the center could be class preparation, teacher collaboration, small group meetings, tutorial work sessions.

#### **Finishes:**

- Floors- Combination of carpet tile for sitting areas, rubber or vinyl composition tile.
- Walls – Painted high gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc.
- Ceilings – Acoustical hung ceiling.
- Casework/Woodwork – High quality plastic laminate on vertical surfaces, with solid composite worktop surfaces, where required, tile backsplashes to countertops.
- Doors & Frames – Solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for student and custodial use needed at locations
- Wireless technology adapters throughout.

**Furniture and Equipment:** work tables/counters and chairs, sink, whiteboard/ LED multi-touch interactive display (or current technology), copier, and storage cabinets for class/curriculum materials.

### Learning Support Spaces

- 6 Resource rooms.
- 5 Speech-language therapy rooms.
- 2 Occupational therapy spaces.
- 1 Physical therapy space.
- A classroom space for our Exceptional Learning Centers, which support student with autism and other developmental disabilities. These spaces will include kitchenettes.
- 2 classrooms for social/emotional programming.
- 2 offices for School Psychologists and the School Social Worker.

#### **Finishes:**

- Floors - Combination of carpet tile for sitting areas, rubber or vinyl composition tile.
- Walls – Painted high gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc.

- Ceilings – Acoustical hung ceiling.
- Casework/Woodwork – high quality plastic laminate on vertical surfaces, with solid composite worktop surfaces, where required, tile backsplashes to countertops.
- Doors & Frames – solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for custodial use needed at locations throughout the corridor.
- Wireless technology adapters throughout.

**Furniture and Equipment:**

- Appropriately sized conference table for rooms required.
- Appropriately sized student chairs and work tables.
- Secure file cabinet.
- A telephone to the office in the front/presentation area.
- Whiteboards in the front/presentation area, for required rooms.
- Computers for students use.
- Teacher desk and chair.
- Bookcase.
- Storage cabinet.
- Soft seating appropriately sized, where required.
- LED multi-touch interactive display (or current technology), for required rooms..
- Student computer/tablet charging stations.

**STEM Inquiry Room**

**Finishes:**

- Floors - Combination of carpet tile for sitting areas, rubber or vinyl composition tile.
- Walls – Painted high impact gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc. Accent walls to have printed vinyl wall covering.
- Ceilings – Partially exposed/paint and./or acoustical hung ceiling, acoustical treatments.
- Casework/Woodwork – high quality plastic laminate on vertical surfaces, with solid composite worktop surfaces, where required, tile backsplashes to countertops.
- Doors & Frames – solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for student and custodial use needed at locations, pull down power cords from ceiling, outlets for specialized equipment.
- Wireless technology adapters throughout.

**Furniture and Equipment:**

- Teacher station and chair.
- Counter space or large tables at which students can work in the back or on the sides.
- White, tack and display boards.
- Specialized Equipment such as 3D printers, VR equipment, etc.
- Flexible student desks and chairs – adjustable height, reconfigurable.
- Whiteboards in the front/presentation area.
- A telephone to the office in the front/presentation area.
- Closed bookcases and closed storage cabinets.
- A locking file cabinet.
- Small tables or desks for a radio and student computers/tablets.
- LED multi-touch interactive display (or current technology.)

- Student computer/tablet charging stations.

## Multi-Purpose Room

### Finishes:

- Floors - Durable rubber or composition flooring to withstand a variety of heavy uses.
- Walls – Painted high gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc.
- Ceilings – Painted exposed structure with acoustical treatment on ceilings and walls throughout.
- Casework/Woodwork – Built in storage for AV equipment - high quality plastic laminate on vertical surfaces with solid composite worktop surfaces.
- Doors & Frames – Solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for student and custodial use needed at locations .
- Wireless technology adapters throughout.

### Furniture and Equipment:

- Flexible student desks and chairs – adjustable height, reconfigurable.
- Whiteboards in the front/presentation area.
- LED multi-touch interactive display or large projector (or current technology).
- Large motorized retractable projection screen with easily available device connections.
- Flexible seating for approximately 300-400 people.
- Ancillary rooms for changing, staging, and storage.
- Additional chairs for stage area.
- Sound system, microphones, microphone wires, lighting wires, moveable lights/spot lights.
- Lighting system.
- Large rolling doors to allow for indoor/outdoor space and use.
- Music stands, microphone stands, choir risers and platforms, piano.
- Stage/platform with curtains.
- Male and female changing rooms with bathroom facilities.
- Storage area.
- Sound and lighting control area/booth.

## Music Room/Choral

### Finishes:

- Floors- Durable rubber or composition flooring to withstand heavy use.
- Walls – Painted high gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc.
- Ceilings – Painted exposed structure with acoustical treatment on ceilings and walls throughout, acoustical ceiling clouds.
- Casework/Woodwork – built in storage for AV equipment - high quality plastic laminate on vertical surfaces with solid composite worktop surfaces. Appropriately sized instrument storage.
- Doors & Frames – Solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for student and custodial use needed at locations.
- Wireless technology adapters throughout.

**Furniture and Equipment:**

- Flexible student desks and chairs – adjustable height, reconfigurable.
- Whiteboards in the front/presentation area.
- LED multi-touch interactive display (or current technology).
- A telephone to the office in the front/presentation area.
- Sound system, microphones, microphone wires, lighting wires, moveable lights/spot lights.
- Music stands, microphone stands, choir risers and platforms, piano.
- Storage area.
- Traditional percussion instruments.
- Music chairs and stands (approximately 90).
- Baby grand piano.
- Locking instrument storage lockers/shelves.

**Art Studios (Two)****Finishes:**

- Floors- Durable rubber or composition flooring to withstand a variety of heavy uses.
- Walls – Painted high gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc.
- Ceilings – Painted exposed structure with acoustical treatment on ceilings and walls throughout.
- Casework/Woodwork – high quality plastic laminate on vertical surfaces with solid composite worktop surfaces. Multiple large sinks and one utility sink per room.
- Specialty display cases for student artwork – backlit.
- Doors & Frames – Solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for student and custodial use needed at locations.
- Wireless technology adapters throughout.
- Both classrooms need to be spacious, well ventilated with high quality artificial and natural lighting.

**Furniture and Equipment:**

- Teacher station and chair.
- Counter space or large tables at which students can work in the back or on the sides.
- White, tack and display boards.
- Specialized storage shelving, mobile. Adequate adjustable open shelving.
- Kiln, and other related equipment (exhaust).
- Flexible student desks and chairs – adjustable height, reconfigurable.
- LED multi-touch interactive display (or current technology).
- Whiteboards in the front/presentation area.
- A telephone to the office in the front/presentation area.
- Closed bookcases and closed storage cabinets.
- A locking file cabinet.
- Small tables or desks for a radio and student computers/tablets.
- Locking glass display cases for exhibiting artwork to the corridor and accessible from the studio, with three adjustable glass shelves and glass on both corridor and studio sides.
- Ventilation systems must safely accommodate the use of art materials, chemical techniques and resulting fumes.

## Health Classroom

### **Finishes:**

- Floors - Combination of carpet tile for sitting areas, rubber or vinyl composition tile.
- Walls – Painted high impact gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc. Accent walls to have printed vinyl wall covering.
- Ceilings – Partially exposed/paint and./or acoustical hung ceiling, acoustical treatments.
- Casework/Woodwork – High quality plastic laminate on vertical surfaces, with solid composite worktop surfaces, where required, tile backsplashes to countertops.
- Doors & Frames – solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for student and custodial use needed at locations, pull down power cords from ceiling, outlets for specialized equipment.
- Wireless technology adapters throughout.

### **Furniture and Equipment:**

- Teacher station and chair.
- Counter space or large tables at which students can work in the back or on the sides.
- White, tack and display boards.
- Flexible student desks and chairs – adjustable height, reconfigurable.
- LED multi-touch interactive display (or current technology).
- Whiteboards in the front/presentation area.
- A telephone to the office in the front/presentation area.
- Closed bookcases and closed storage cabinets.
- A locking file cabinet.
- Small tables or desks for a radio and student computers/tablets.

## Student Services Spaces and Suite

### **Finishes:**

- Floors - Durable carpet tile in main areas, rubber or composition flooring to withstand heavy use in work areas.
- Walls – Painted high impact gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc. Accent walls to have printed vinyl wall covering.
- Ceilings – Partially exposed/paint and./or acoustical hung ceiling, acoustical treatments.
- Casework/Woodwork – Plastic laminate vertical surfaces, bookshelves and cabinet interiors. New book shelving consisting of metal shelving systems with wood end panels and tops.
- Doors & Frames – Solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for student and custodial use needed at locations, pull down power cords from ceiling, outlets for specialized equipment.
- Window Treatments – Consisting of motorized roller shades with single push button operation for use during emergency lockdown conditions.
- Wireless technology adapters throughout.

### **Furniture and Equipment:**

- Age appropriate flexible seating, easily stackable for storage. Adjustable height and reconfigurable.
- Counter space or large tables at which students can work in the back or on the sides.
- Soft seating for reading areas.
- White, tack and display boards.
- LED multi-touch interactive display (or current technology).
- Student technology work center with flexible seating and charging stations.
- Whiteboards in the front/presentation area.
- A telephone to the office in the front/presentation area.

### **Library / Media Center (Learning Commons)**

#### **Finishes:**

- Floors - Durable carpet tile in main areas, rubber or composition flooring to withstand heavy use in work areas.
- Walls – Painted high impact gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc. Accent walls to have printed vinyl wall covering.
- Ceilings – Partially exposed/paint and./or acoustical hung ceiling, acoustical treatments.
- Casework/Woodwork – Plastic laminate vertical surfaces, bookshelves and cabinet interiors. New book shelving consisting of metal shelving systems with wood end panels and tops.
- Doors & Frames – Solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for student and custodial use needed at locations, pull down power cords from ceiling, outlets for specialized equipment.
- Window Treatments – Consisting of motorized roller shades with single push button operation for use during emergency lockdown conditions.
- Wireless technology adapters throughout.

#### **Furniture and Equipment:**

- Age appropriate flexible seating, easily stackable for storage. Adjustable height and reconfigurable.
- Counter space or large tables at which students can work in the back or on the sides.
- Soft seating for reading areas.
- White, tack and display boards.
- LED multi-touch interactive display (or current technology).
- Student technology work center with flexible seating and charging stations.
- Whiteboards in the front/presentation area.
- A telephone to the office in the front/presentation area.

### **Health Office (Nurse's Room)**

#### **Finishes:**

- Floors - Durable rubber or composition flooring to withstand heavy use.
- Walls – Painted high impact gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc. Accent walls to have printed vinyl wall covering.
- Ceilings – Partially exposed/paint and./or acoustical hung ceiling, acoustical treatments
- Casework/Woodwork – lockable storage cabinets throughout with accommodations for secure refrigerated and dry storage for various medical needs. Large wardrobe storage units to house variety of medical related equipment and supplies.

- Doors & Frames – Solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for student and custodial use needed at locations, pull down power cords from ceiling, outlets for specialized equipment.
- Window Treatments – Consisting of motorized roller shades with single push button operation for use during emergency lockdown conditions.
- Cubicle curtains for privacy
- Toilet rooms and hand sinks located in exam and rest areas.
- Wireless technology adapters throughout.

**Furniture and Equipment:**

- Age appropriate flexible seating, cots/benches for rest areas, exam table, lockable storage, refrigerator/freezer and other related secured storage equipment for medical supplies.
- Adjustable height and reconfigurable office station for nurse and related visiting staff
- White, tack and display boards.
- LED multi-touch interactive display or large projector (or current technology).
- Docking station for logging of information and daily activities.
- A telephone to the office in the front/presentation area.

**Cafeteria/Food Service Area**

**Finishes:**

- Floors - Durable rubber or composition flooring to withstand heavy use.
- Walls – Painted high impact gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc. Accent walls to have printed vinyl wall covering.
- Ceilings – Partially exposed/paint and./or acoustical hung ceiling, acoustical treatments
- Casework/Woodwork – Condiment kiosk / station consisting of solid surface work top, with plastic laminate vertical surfaces and cabinet interiors. Recycling and waste disposal counter with solid surface finish.
- Doors & Frames – Solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for student and custodial use needed at locations, pull down power cords from ceiling, outlets for specialized equipment.
- Window Treatments – Consisting of motorized roller shades with single push button operation for use during emergency lockdown conditions.
- Folding/Operable partitions (two) to provide a variety of seating areas.
- Wireless technology adapters throughout.

**Furniture and Equipment:**

- Age appropriate flexible seating, easily stackable for storage. Adjustable height and reconfigurable.
- White, tack and display boards.
- LED multi-touch interactive display or large projector (or current technology).
- Large motorized retractable projection screen with easily available device connections.
- A telephone to the office in the front/presentation area.



## Gymnasium Area

### Finishes:

- Floors - Athletic wood floor maple on resilient pads, provide rolled moisture barrier. Floor finish shall be durable water based acrylic.
- Walls – Painted masonry, acoustical panels, wall padding.
- Ceilings – Partially exposed/paint and./or acoustical hung ceiling, acoustical treatments.
- Doors & Frames – Solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for student and custodial use needed at locations, pull down power cords from ceiling, outlets for specialized equipment.
- Folding/Operable partitions (two) to provide a variety of seating areas.
- Wireless technology adapters throughout.

### Furniture and Equipment:

- Age appropriate athletic equipment. Basketball, climbing ropes/wall, volleyball, tennis, and other related athletic program support equipment. Adjustable height and reconfigurable equipment for the early childhood center to promote gross motor skills.
- White, tack and display boards.
- LED multi-touch interactive display or large projector (or current technology). Equipment must be rugged & shatter resistant or protected from damage during athletic classes and events.
- Large motorized retractable projection screen with easily available device connections.
- Whiteboards in the front/presentation area.
- A telephone to the office in the front/presentation area.

## Administrative / Main Office / Faculty & Staff Lounge

### Finishes:

- Floors - Durable carpet tile in main areas, rubber or composition flooring to withstand heavy use in work areas.
- Walls – Painted high impact gypsum wall board or masonry, acoustical panels, interactive display boards, tack and white boards, etc. Accent walls to have printed vinyl wall covering.
- Ceilings – Acoustical hung ceiling.
- Casework/Woodwork – Plastic laminate vertical surfaces, bookshelves and cabinet interiors.
- Doors & Frames – Solid core hardwood doors with windows, steel hollow metal frames, and heavy duty grade material, with high security function positive latching.
- 120 volt AC, electrical outlets for staff and custodial use needed at locations.
- Window Treatments – Consisting of motorized roller shades with single push button operation for use during emergency lockdown conditions.
- Wireless technology adapters throughout.

### Furniture and Equipment:

- Systems furniture workstations, office furniture, conference tables, storage cabinets, files and related furniture/equipment
- White noise, sound masking equipment.
- Counter space or large tables at which students can work in the back or on the sides.
- Soft seating for waiting areas and visitor seating.
- Faculty/Staff mailboxes and related storage areas.

- White, tack and display boards.
- LED multi-touch interactive display (or current technology).
- Whiteboards in the front/presentation area.
- A telephone to the office in the front/presentation area.
- Work station partitions.
- Office equipment (telephones, copiers, fax, shredder, etc.).
- Vault/ Secure Storage.
- Worktables for copy/work room.
- Public address system.
- Locked display case.
- Digital display board.
- Coat closet.
- Seating for reception.
- Seating for discipline.
- Student desks with partitions and chairs for Student Support Room.

## Mechanical and Custodial

### **Finishes:**

- Floors – Sealed concrete.
- Walls - Painted masonry or gypsum wall board.
- Ceilings – None.
- Casework/Woodwork – Heavy duty - utility grade products.
- Doors & Frames – Use steel doors and hollow metal frames heavy duty security function locksets and positive latching.

### **Furniture and Equipment:**

- Larger custodial closets.
- Slop and regular sink in custodian closets.
- New carpet cleaning equipment.
- New cafeteria furniture (fold up).
- Back splash for serving walls.
- New buffer/stripper.
- Large capacity wet vacuums.
- 30" X 60" flat carts for moving furniture & supplies.
- Large storage area for supplies & equipment.
- Emergency eye wash in custodian closets.
- First aid kits in custodian closets.
- Faucet on kitchen loading dock.
- Centralized area for trash.
- Zamboni machine.
- Common areas keyed the same (faculty lavatories, multipurpose room, and computer room).
- Pallet jack.
- Furniture movers (teacher's desk, file cabinets).
- Large fans (to aid in drying floors).
- Self-dumping Polly hoppers for trash, drain snakes.
- Surveillance cameras at all exit doors.

## SECTION X - BUILDING SYSTEMS

The following describes the proposed mechanical, electrical, plumbing and fire protection systems, which shall serve the proposed new construction of an educational building, Huckleberry Hill Elementary School, located in Brookfield, Connecticut. After project completion the building will be approximately 138,852 gross square feet in size.

Mechanical, Electrical, Plumbing, and Fire Protection systems shall be in accordance with the current Building Code of the State of Connecticut including but not limited to International Energy Code (2015) and shall comply with the State of Connecticut High Performance Building Standards.

This narrative is meant to assist in the development of a schematic estimate for the purchase and installation of the MEP systems.

### Fire Protection Sprinkler System

- A new fire protection system, in accordance to NFPA 13, shall be installed throughout all areas of the building.
- A new 8" fire protection line will be routed to the building from water mains located at the street.
- A new 8" main fire protection water service with a double check backflow preventer assembly shall be installed, within the Mechanical Room.
- Alarm valves shall be installed to properly zone the sprinkler system. There will also be flow control valve assemblies with tamper & flow switches on each floor level.
- Sprinklers shall be concealed, fully recessed in finished areas with ceilings. Sidewall, exposed, extended coverage sprinklers shall be installed where appropriate. Upright sprinklers with protective baskets shall be installed within the gymnasiums, storage and mechanical areas. Quick response sprinkler heads shall be used in light hazard locations. Sprinklers, unless noted otherwise, shall have a ½" orifice and a 165°F temperature rating. Intermediate temperature classification sprinklers shall be installed within the mechanical room, skylights and other applicable areas.
- Piping for the sprinkler system shall be steel pipe, ASTM A 53; Schedule 40 seamless carbon steel. Schedule 10 pipe shall be allowed for pipe sizes larger than 2" diameter when roll grooved mechanical couplings are used. Sprinkler piping shall be installed above ceilings and concealed within chases where applicable.
- Fittings shall be grooved mechanical fittings: ANSI A21.10 ductile iron; ASTM A47 grade malleable iron. Couplings shall be ASTM A 536 ductile iron or malleable iron housing, EPDM gasket with nuts, bolts, locking pin, locking toggle or lugs to secure roll grooved pipe and fittings.
- Kitchen hoods and kitchen exhaust ductwork shall be protected by dry chemical type systems and shall be connected to the fire alarm system.

### Plumbing Systems

#### Plumbing and Piping Systems

- Storm, waste, and vent piping shall be hub-less cast iron with standard torque clamps, conforming to CISPI 301 for above ground piping and hub & spigot cast iron conforming to ASTM A 74 for piping installed below the floor slab. Storm, waste, and vent piping shall be concealed within chases and walls. Storm and waste services shall exit the building

below slab at multiple locations to be coordinated with the site engineer. The secondary storm system shall exit the building separate from the primary system; discharge shall be above grade, at locations visible to the building maintenance staff.

- The building will require a 4" domestic water service, which shall enter the building below slab, and rise up to a service assembly located in the Mechanical Room. The service assembly located within the Mechanical Room shall consist of shut-off valves, pressure reducing valves, backflow preventers, and a meter.
- Domestic cold water, domestic hot water, and domestic hot water recirculation piping shall be Type L copper conforming to ASTM B 88. Domestic water piping shall be insulated with rigid molded, noncombustible glass fiber insulation conforming to ASTM C335. Domestic water piping throughout the building shall be installed above ceilings and concealed within walls. Jacketing shall be provided on piping exposed in occupied areas (when exposed pipe is located below 10').
- At this time, it is assumed natural gas will be available for the project. The natural gas service shall originate from the street and enter the building in the Mechanical Room after connecting to the meter assembly. The meter assembly shall consist of shut-off valves, pressure regulator and meter. Gas piping shall be ASTM A53 schedule 40 black steel. Gas piping will be used to serve the building domestic hot water heaters, boilers, kitchen appliances, and any additional mechanical or amenity space equipment.
- A concrete 2000-gallon grease interceptor shall be coordinated and then installed below grade at the exterior of the kitchen. The waste connection exiting the grease interceptor shall connect to the sanitary system serving the buildings. The interceptor shall prevent grease from entering and clogging the sanitary system.

### **Hot Water Systems**

- The hot water distribution system shall include 140°F piping for the kitchen (boosted to 180°F at the dishwashing area) and 110°F piping to serve the remainder of the building. The water in the storage tanks will be stored at 140°F. An automatic High/Low tempering valve, by Leonard or approved equal, will reduce to the water to 110°F for the building piping. For controllability reasons a second High/Low tempering valve will be installed on the kitchen 140°F water feed.
- Hot water recirculation pumps shall be installed to maintain the appropriate temperatures in the domestic hot water distribution system. The pump shall be controlled by the building management system (BMS) to minimize energy consumption. Hot water recirculation piping shall be brought to all lavatory and sink locations.

### **Hot Water Plant**

- Domestic hot water shall be generated by two natural gas fired water heater/storage tank, PVI Conquest or approved equal, located in the Mechanical Room.

### **Plumbing Fixtures and Specialties**

- All plumbing fixtures required to be accessible shall be in accordance with the Americans with Disabilities Act (ADA), 504 and UFAS standards.
- Water closets and urinals shall be wall hung, vitreous china, low consumption (0.125 gallon per flush urinals and high efficiency 1.28 gallon per flush water closets), by American Standard or approved equal. Flush valves shall be manually operated, by Sloan or approved equal.

- Lavatories shall be wall hung, vitreous china, by American Standard or approved equal. Faucets shall be low consumption manually operated, by Symmons or approved equal.
- Multi-user lavatories shall be wall hung, solid synthetic surface with integral soap dispensers by Bradley or approved equal. Faucets shall be low consumption manually operated by selected manufacturer.
- Wall hangers for water closets, urinals, and lavatories shall be heavy duty adjustable height type by J.R. Smith or approved equal. Hangers shall be installed within chase spaces provided behind fixtures.
- Drinking fountains shall be stainless steel, wall recessed, two-tier, ADA style, vandal resistant manufactured by Elkay or approved equal.
- Mop basins shall be floor mounted, 24"x24", molded stone, with wall mounted faucet & trim, by Fiat or approved equal.
- Classroom sinks shall be stainless steel, by Elkay or approved equal with gooseneck faucets, by Symmons or approved equal.
- Cast iron floor drains shall be installed at all toilet rooms. Heavy-duty cast iron floor drains & floor sinks shall be installed in the Mechanical Room. Floor drains shall be by J.R. Smith or approved equal. Trap primers shall be provided for floor drains. In the kitchen area trap primers shall be Pressure Drop Activated by PPP or approved equal. In bathrooms and mechanical room areas trap primers shall be waterless by ProSet Trap Guard or approved equal.
- Emergency gas solenoid valves shall be provided in the kitchen.
- Hose bibbs shall be installed in all toilet rooms, by Woodford or approved equal.
- Wall hydrants shall be installed on exterior walls every 100 feet. Wall hydrants shall be non-freeze type by Woodford or approved equal.

## **Mechanical Systems**

### **HVAC Controls**

A Building Management System (BMS) shall be installed to control the mechanical and selected electrical systems. BMS shall be by the Temperature Control vendor approved by the owner.

- The system shall include a personal computer with graphics based display and capabilities for alarming off-site.
- The BMS shall provide temperature control for all HVAC systems and control select lighting in the building.
- The system shall be programmed for occupied/unoccupied cycles for the air handling equipment, with an override feature for spaces that would be utilized after-hours.
- The system shall monitor occupancy sensing devices to control the amount of outside air being brought in to each classroom to assist in energy conservation.
- The BMS shall be accessible from any Web browser and mobile device with proper authorization.

### **Heating Plant**

- The heating plant will generally consist of (3) natural gas fired boilers, Aereco Benchmark Model BMK 1500, 1,500,000 BTU/hr input each. The boilers will be mounted on 6" thick reinforced concrete housekeeping pads.

- The primary heating hot water pumping plant will generally consist of one pair of pumps. Each of the pumps will be sized for 100% capacity, for complete redundancy. The pumping will be a variable primary arrangement for the boilers and will send 140°F water to the building for space heating systems and terminal heating units (baseboard fin tube, radiant ceiling panels, air handling units, cabinet units heaters, etc.) throughout the facility. The space heating hot water supply piping temperature will be reset inversely with outside air temperature, to minimize energy consumption. Heating hot water pumps shall be vertical inline type, 10 HP by Armstrong or approved equal, Pumps will be mounted on 4" thick concrete housekeeping pads in the Mechanical Room.
  - Pumps will be mounted on 4" thick concrete housekeeping pads in the Mechanical Room.

### **Chiller Plant**

- The chiller plant for space cooling, will generally consist of (2) site mounted air cooled chillers, Trane Sintesis RTAF or approve equal, 200 tons each. The chiller will be mounted on an exterior concrete pad. Chiller shall have sound enclosure surrounding it on all sides, consult chiller manufacturer on exact size and thickness of enclosure to provide acceptable sound levels in residential neighborhood.
- The primary chilled water pumping plant will generally consist of one pair of pumps. Each pump will be sized for 100% capacity, for complete redundancy. The pumping will be a variable primary arrangement with the chillers in a parallel configuration and will circulate 42°F chilled water to the space cooling system and terminal cooling units (air handling units, DOA's, etc.) throughout the facility. Chilled water pumps shall be vertical inline type, 20 HP by Armstrong or approved equal. Pumps will be mounted on 4" thick concrete housekeeping pads in the Mechanical Room.

### **Heating, Ventilating and Air Conditioning**

#### *Academic Areas*

- The outdoor ventilation air for the core academic, office, and multi-purpose areas will be provided through dedicated outdoor air (DOA) units. These DOA units will provide pre-conditioned air that will be distributed directly to each space. Exhaust air from the spaces will be ducted back to the DOAS unit. Each DOA unit will generally consist of supply & exhaust fans, hot water heating coil, chilled water cooling coil, energy recovery wheel, wrap around heat pipe, filter section, and controls. DOA units shall be Trane, Performance Climate Changer or approved equal.
  - Space cooling will be provided for each space. The system to provide this cooling has not yet been determined but will be provided by either variable refrigerant flow (VRF) fan coils and associated condensing units, or active chilled beams. These cooling terminal units will be responsible for accommodating the space sensible cooling load (latent load satisfied by DOA units).
  - Space heating will be provided through the use of either perimeter fin-tube radiation or radiant ceiling panels along exterior walls. Perimeter fin-tube radiation shall be Rittling or approve equal. Radiant ceiling panels shall be Airtite or approved equal.

#### *Assembly Areas*

- Each assembly space (Gymnasium, Auditorium, Cafeteria, etc.) will be served by a dedicated, rooftop mounted air handling unit. Each AHU will provide ventilation air, heating, and cooling for the dedicated space. The AHU's will generally consist of supply

& return fan, hot water heating coil, chilled water cooling coil, filter section, and controls. The AHU's shall be Trane, Performance Climate Changer or approved equal.

#### *Tel/Data and security equipment rooms*

- Data closets will be served by ductless split units, by Mitsubishi or approved equal.

#### *Corridors/Miscellaneous areas*

- All restrooms, mechanical/electrical rooms and storage areas shall be provided with exhaust that will be connected to the DOA units through the building. The exhaust rate to these rooms will be provided based on ASHRAE 62.1 Requirements.
- The stairwells, entrances and vestibules shall be served by hot water cabinet unit heaters with return air temperature sensors and control valves. All storage areas, mechanical rooms and electrical rooms shall be provided with hot water unit heaters.

#### **Materials and Methods**

Include the following basic materials and methods of construction:

- All ductwork and accessories shall meet SMACNA standards.
- Provide all HVAC equipment with extra set of filters.
- Seismic restraints shall be designed and installed as required per State of Connecticut Building Code and Fire Safety Code which requires the seal of a licensed professional engineer. Abovementioned professional engineer will be required to verify installation is correct and complete per seismic code. This includes piping, ductwork, equipment, and equipment bases.
- Provide glass fiber insulation for all hydronic piping and ductwork. Insulation shall be installed to meet the Energy Conservation Code.
- Provide firestopping around mechanical penetrations in accordance with fire stopping requirements. System shall be capable of maintaining against flame and gases. System shall be UL listed and comply with ASTM E814.
- Provide mechanical identification for mechanical systems. Identification shall comply with ANSI A13.1.
- All pipe connections shall be installed to allow for freedom of movement of the piping during expansion and contraction without springing. Swing joints, expansion loops and expansion joints with proper anchors and guides shall be provided where shown.
- Provide vibration isolation for hydronic piping, ductwork, and equipment.
- Hydronic piping 2 1/2"  $\phi$  and under shall be Type L copper. Piping 3"  $\phi$  and over shall be ASTM A 53; Schedule 10 black steel pipe with welded, flanged or grooved joints.
- All equipment served by hydronic piping shall have isolation valves on the supply and return lines. Isolation valves shall also be provided at branch take-offs.

## **Electrical Systems**

### **Main Service and Distribution**

- The building shall be provided with a 3000A, 480/277V, 3-phase, 4-wire, main electrical service with circuit breaker distribution and integral TVSS and ground fault. The main switchboard shall be located in a Main Electrical Room. Include the following;

- Electrical service shall be provided underground from the Utility pad mount transformer in schedule 40 PVC conduit. When crossing roadways, sidewalks, etc, concrete encased conduit shall be provided.
- All conductors shall be copper.
- The building shall be provided with 300Kw emergency / standby diesel generator, 60Hz, 1800RPM, 3phase 480Y/277Volt, with weatherproof sound attenuated enclosure and tank capable of providing 72 hours of run time. Provide three circuit breakers, one 100Amp 3pole for ATS #1- Life safety/ Emergency lighting requirements, and one spare.

### **Distribution**

The building shall be provided with panelboards and feeders as follows:

- *Main Electrical Room shall contain:*
  - 3000A, 480/277V main switchboard. Metering will be provided separately for lighting loads, receptacle loads, kitchen loads, and HVAC loads. Switchboard shall include TVSS device and ground fault.
  - One distribution panel (Lighting) shall be 480/277V, 3PH, 4W, 42-pole, 800amp main circuit breaker type.
  - One distribution panel (General Receptacle) shall be 208/120V, 3PH, 4W, 42-pole, 1200amp main circuit breaker type.
  - One distribution panel (Mechanical Equipment) shall be 480/277V, 3PH, 4W, 42-pole, 1200amp main circuit breaker type.
  - One general purpose panelboard (Lighting) shall be 480/277V, 3PH, 4W 42-pole, 100 amp main circuit breaker type.
  - One general purpose panelboard (Exterior Lighting) shall be 480/277V, 3PH, 4W 42-pole, 100 amp main circuit breaker type.
  - One general purpose panelboard (General Receptacle) shall be 208/120V, 3PH, 4W 84-pole, 250 amp main circuit breaker type.
  - One Transformer shall be 112.5 KVA dry-type 480/277V to 208/120V, 3-phase, 4-wire step down transformer with harmonic filters. Provide a #6 ground from the transformer to the building steel as required by code.
  - One Transformer shall be 30 KVA dry-type 480/277V to 208/120V, 3-phase, 4-wire step down transformer. Provide a #6 ground from the transformers to the building steel as required by code.
  - One general purpose panelboard (Equipment) shall be 480/277V, 3PH, 4W 42-pole, 400 amp main circuit breaker type.
  - One general purpose panelboard (Equipment) shall be 208/120V, 3PH, 4W 30-pole, 100 amp main circuit breaker type.
- *Emergency Electrical Room shall contain:*
  - ATS #1 100Amp, 480Y/277Volt, 3phase- Life Safety / Emergency Lighting distribution.
  - One Life Safety distribution panel (Emergency Lighting) shall be 480/277V, 3PH, 4W, 42-pole, Bussman Quik-spec fusible type with 100Amp main switch.



- One general purpose panelboard (Emergency Lighting) shall be 480/277V, 3PH, 4W 30-pole, , Bussman Quik-spec fusible type with 50Amp main switch.
- ATS #2 400Amp, 480Y/277Volt, 3phase- Standby Power load distribution.
- One distribution panel (Standby Load) shall be 480/277V, 3PH, 4W, 42-pole, 400amp main circuit breaker type.
- One Transformer shall be 75 KVA dry-type 480/277V to 208/120V, 3-phase, 4-wire step down transformer. Provide a #6 ground from the transformers to the building steel as required by code.
- One general purpose panelboard (Standby Equipment) shall be 480/277V, 3PH, 4W 42-pole, 200 amp main circuit breaker type.
- One general purpose panelboard (Standby Equipment) shall be 208/120V, 3PH, 4W 30-pole, 100 amp main circuit breaker type.
- *Kitchen / Cafeteria shall contain:*
  - One general purpose panelboard shall be 480/2770V, 3PH, 4W 30-pole, 250amp main circuit breaker type.
  - One general purpose panelboard (Kitchen Equipment/Receptacle) shall be 208/120V, 3PH, 4W 84-pole, 400amp main circuit breaker type.
  - One Transformer shall be 112.5 KVA dry-type 480/277V to 208/120V, 3-phase, 4-wire step down transformer with harmonic filters. Provide a #6 ground from the transformer to the building steel as required by code. Transformer to be located in main electrical room.
- *First Floor Remote Electrical Room:*
  - One general purpose panelboard (Lighting) shall be 480/2770V, 3PH, 4W 42-pole, 100 amp main circuit breaker type.
  - One general purpose panelboard (Emergency Lighting) shall be 480/2770V, 3PH, 4W 42-pole, Fusible Branch with 50Amp main switch (Bussman Quik- spec) type.
  - One general purpose panelboard (General Receptacle) shall be 208/120V, 3PH, 4W 84-pole, 400amp main circuit breaker type with integral transient voltage surge suppression.
  - One general purpose panelboard (Standby Equipment/Receptacle) shall be 208/120V, 3PH, 4W 30-pole, 100 amp main circuit breaker type.
  - One general purpose panelboard (Standby Equipment) shall be 480/277V, 3PH, 4W 42-pole, 100 amp main circuit breaker type.
- *Second Floor Remote Electrical Room*
  - One general purpose panelboard (Lighting) shall be 480/2770V, 3PH, 4W 42-pole, 100 amp main circuit breaker type.
  - One general purpose panelboard (General Receptacle) shall be 208/120V, 3PH, 4W 84-pole, 400amp main circuit breaker type with integral transient voltage surge suppression.
  - One general purpose panelboard (Emergency Lighting) shall be 480/2770V, 3PH, 4W 42-pole, Fusible Branch with 50Amp main switch (Bussman Quik- spec) type.
- *Third Floor Remote Electrical Room*

- One general purpose panelboard (Lighting) shall be 480/2770V, 3PH, 4W 42-pole, 100 amp main circuit breaker type.
- One general purpose panelboard (General Receptacle) shall be 208/120V, 3PH, 4W 84-pole, 400amp main circuit breaker type with integral transient voltage surge suppression.
- One general purpose panelboard (Standby Equipment/Receptacle) shall be 208/120V, 3PH, 4W 30-pole, 100 amp main circuit breaker type.
- One general purpose panelboard (Equipment) shall be 208/120V, 3PH, 4W, 30-pole, 100amp main circuit breaker type.
- One general purpose panelboard (Standby Equipment) shall be 480/277V, 3PH, 4W 42-pole, 100 amp main circuit breaker type.
- One general purpose panelboard (Equipment) shall be 480/277V, 3PH, 4W 42-pole, 100 amp main circuit breaker type.
- One Transformer shall be 112.5KVA dry-type 480/277V to 208/120V, 3-phase, 4-wire step down transformer with harmonic filters. Provide a #6 ground from the transformer to the building steel as required by code.
- Branch circuits shall be installed in EMT conduit. Type MC cable shall be limited to concealed spaces above finished ceilings in classrooms or drywall type partitions after first device. EMT conduit shall be used to the first device in a branch circuit and shall be used in all masonry or CMU partitions.

### **Fire Alarm System**

- The building will be provided with an addressable fire alarm system in compliance with code requirements and ADA regulations. Voice evacuation shall be provided throughout the building. The system shall be provided with a fire alarm control panel with a wireless master box to contact the local fire department. Manual pull stations shall be installed in locations designated by the city fire marshal office. Audible and visual signaling devices shall be installed in classrooms, corridors, toilets, cafeteria, gymnasium, etc. Visual-only signaling devices shall be installed in all conference rooms, work rooms, small staff toilets, etc.

### **Lighting Systems**

- Exit signs will be self-contained, universal mounted, LED illuminated, low energy usage fixtures.
- The following fixtures will be provided:
  - 10" wide by 8' long architectural pendant direct/indirect LED fixtures (80%/20%) in each classroom and other select locations. Typical classroom will have 3 rows of fixtures parallel to the teaching surface, and suspended 96" AFF.
  - 2' x 4' recessed high efficiency architectural LED fixtures in office/work areas, and other select locations.
  - 2' x 2' recessed high efficiency architectural LED in corridors.
  - 1' x 4' surface/pendant mounted industrial LED fixtures with wire guards in utility spaces, mechanical, and electrical rooms.
  - 4' surface mounted wraparound LED fixtures in storage spaces, MDF, and IDF rooms.

- Pendant direct LED fixtures in Gymnasium/Assembly Room.
- 10" wide by 8' long architectural pendant direct/indirect LED fixtures (80%/20%) in a pattern in Dining Area.
- 2' x 2' recessed high efficiency architectural LED fixtures and 6" wide recessed LED perimeter light fixture at the mirror in toilet rooms.
- Daylight sensors and dimming control shall be provided in all classrooms and other select rooms containing exterior window walls. The light fixture row closest to the window wall will be dimmed via a daylight sensor. The remaining rows of lights will be able to be manually dimmed by the occupants via a multi-button switch. There will be one master on/off toggle switch for all the lighting in the room. This will allow turning off the lights and overriding the sensors. Lighting control wiring to be low voltage. Lighting control system by Crestron GLPAC or GLPP series or equivalent.
- Occupancy sensors shall be provided in all lit areas except in utility rooms and other rooms exempted by code.
- Occupancy sensor switches with wall override shall be provided in all small offices, single occupancy toilet rooms, storage rooms and janitors closets.
- Corridor and stairwell lighting shall remain on during occupied hours, but will be controlled by occupancy sensors during unoccupied times. This will require communication with the building management system.
- Site lighting will be as follows:
  - Parking lot lighting shall be accomplished using pole mounted, 277V, LED fixtures on 60 foot centers. Fixtures to match existing complex LED fixtures and will be fed from a site lighting relay panel and shall be controlled by the building management system and photocell arrangement.
  - Walkway lighting shall be accomplished using 3' high bollards, 120V, LED on 15foot centers. Fixtures will be fed from the site lighting relay panel and shall be controlled by the building management system.
  - All egress doors leading directly to the exterior of the building shall have 2-LED array, 2-LED driver fixtures mounted above.
- Gymnasium/Cafeteria lighting shall be controlled via occupancy sensors or lighting control system by Crestron GLPAC or GLPP series or equivalent.
- Illuminated low level exit signs and handicap accessible exit signs shall be provided where required by code.

### **Materials and Methods**

Include the following basic materials and methods of construction:

- Wiring shall be THHN/THWN copper, installed in EMT conduit for general circuits.
- Type MC cable shall be used as prescribed in sections above.
- Devices shall be specification grade, NEMA 5-20R etc.
- Disconnect switches shall be fusible heavy-duty type. NEMA 1, 3R or 4X as required for locations installed.
- Circuit breakers shall be fixed element, thermal magnetic type.
- Panelboards shall have copper bussing, with hinged, lockable, door-in-door trim.

- Branch circuit breakers shall be bolt-on type.
- All conduits, circuits and devices shall be labeled.
- Conduits below slabs shall be schedule 40 PVC, with rigid steel conduit sweeps.

Include the following miscellaneous items:

- In all single occupant toilet rooms: emergency call light/bell mounted above the doors and associated call switches shall be provided.

### **Safety & Security**

Safety is of utmost importance to our schools and community. Safety and security of the project will be developed through a series of strategies – both through design and operations of the facility. This project will integrate CTED (Crime Prevention Through Environmental Design) design principles for both the building and site. Both active and passive techniques will also be implemented throughout the project with the overall goal to deter, delay and avoid breeches in the security of the facility. The design of the site will include the implementation of clear sight lines from visitor parking, drop off, and delivery access to the main administration space of the building.

Minimal setback distances will also be incorporated through the use of plazas, sidewalks, and various planting techniques. All points of access will be electronically controlled and monitored with video surveillance. Once inside the building, the circulation paths will be separated into layers of access from the public entrance through to the education space via electronically controlled access doors set on hold opens. While we have illustrated a few of the safety infrastructure elements for the project, the entire facility will be based upon the principles of the School Safety Infrastructure Criteria.

## **SECTION XI - SITE DEVELOPMENT**

As indicated in the Project Rationale, the construction of the school combines the existing Center Elementary and Huckleberry Hill Elementary Schools thus requiring a thorough strategy for parking, parent and bus drop off, pedestrian access and safety, athletic fields and outdoor amenities. This building project requires the redevelopment of the existing school site containing a total area of development approximately 16.5 acres to accommodate the construction of the New School, demolition of existing and installation of new related site amenities.

The intent is to construct the new structure towards to the “rear”, or eastern portion of the site, while the existing Huckleberry Hill School is occupied. Town owned property provides the possibility for both vehicular and pedestrian access at Candlewood Lake and Nabby Road. This will allow for improved bus and parent traffic flow patterns and a primary and secondary entry/egress to the site that does not currently exist today.

### **Vehicular Circulation**

Vehicular circulation will be improved due to the potential placement of the building ultimately creating a longer access drive to the school allowing for additional off-street queuing for parking and bus drop-off/pick-up. The existing ingress/egress to Candlewood Lake will be maintained and improved in width to allow for additional turning lanes and proper radii. Sight lines are adequate although a full traffic study shall be conducted prior to the final site design and proposed traffic improvements.

A secondary ingress/egress will be provided along Nabby Road as an alternative route for emergency access and overflow traffic. This additional point of access allows emergency

vehicle access to both the east and west side of the 500 year flood plain should there be an event.

It is anticipated that students will be transported to the school on buses or vans, which will require an adequate entrance and driveway to the school. Separate bus and parent drop off will be provided as well as separate entry plazas, sidewalks and support space for the Early Childhood Learning Center. Access control for the drop off areas will be controlled with gates during the educational day and for community/parent events.

Entrance and egress will be constructed in a drive through fashion that will allow buses to enter from a common driveway with a pass-through and exit onto a returning perimeter driveway. Bus drop-off and pick-up location should be located where the activity can be observed from the building administration offices or security offices. There is to be a separate parent drop-off loop.

An emergency vehicle access loop around the building will be studied but due to the existing topography may not be easily achievable. For those areas unable to gain perimeter access designated access areas will be provided for first responders.

### **Parking**

There will be approximately 255 parking space in total separated into various areas for access control. These areas will include faculty/staff parking, parent, and visitor parking. Accessible spaces will be distributed throughout the campus proportional to entry areas and site amenities. Lastly, overflow parking will be handled via grass pave, or grade stabilization product, adjacent to the proposed athletic fields.

Parking will be provided for normal school day activities including required handicapped and visitor parking including parking for special weekend and evening activities. In addition, entrance walkways are to be designed and constructed to allow safe passage around the building and from the parking lot into the building. Lighting of the parking lot, sidewalk and driveways is to be provided. Full compliance with applicable code requirements is required to provide proper access of handicapped students and visitors into the building from the sidewalks and parking lots.

### **Outdoor Play Areas**

Outdoor playgrounds with playscapes for the Early Childhood Learning Center, Grades 1- 2 and Grades 3 - 5 for a total of three playscape areas will be constructed. These will be evenly distributed, contain age appropriate equipment and be located adjacent to their classroom neighborhood.

### **General Service and Cafeteria Deliveries**

In addition, a loading dock area for the safe and efficient delivery of school supplies and equipment as well as food products for the cafeteria will be provided. A well-illuminated receiving area for the school is to be included with card and camera security systems including an elevated loading dock for easy delivery to the site.

### **Public Water Supply at the Huckleberry Hill School**

Huckleberry Hill School is located on Candlewood Lake Road. The school is supplied by a Non-Transient Non-Community (NTNC) water system (PWSID #CT0181122) regulated by the Connecticut DPH. Current enrollment is 537 students. Water demand at the school is estimated to be to 4,300 gpd to 5,900 gpd based on the Connecticut DPH Technical Standards for design of septic systems (at 8 to 11 gallons per pupil per day).

Based on historical information from the Connecticut DPH, the source of water to the school is two bedrock wells which reportedly do not receive treatment. The bedrock wells are reportedly located in the northeastern part of the property between the school and Candlewood Lake Road. Well #1 has a reported pumping rate of 7 gpm and Well #2 has a pumping rate of 13 gpm. It is unclear if the pumping rate of Well #2 is restricted to less than 10 gpm in order to meet sanitary radii requirements, but based on the area where the wells are installed the 150-foot sanitary radius of Well #2 would extend across Candlewood Lake Road onto private property. If the pumping rates are equal to the safe yield of the wells, then the existing wells could produce 19,440 gpd. If the pumping rate of Well #2 is restricted to 10 gpm, then the existing wells could produce 16,524 gpd.

The proposed school is sized for approximately 1,138 students, the estimated water demand (as above) would be in the range of 9,100 to 12,500 gpd. The existing wells appear to be sufficient to meet this demand, provided that the current yields are consistent with the DPH information. However, installation of a third well may also provide the additional yield required to meet demands. The size of the current storage tanks at the school is not known, but is likely to be close to the estimated demands above (4,000 to 6,000 gallons of storage). Additional storage would be necessary at the school in order to store the average day demand while having sufficient capacity to meet peak hour demands, peak day demands, and fire protection (sprinkler flows). This project currently includes the installation of two new wells, pumps, storage tanks, water filtrations, and fire pump (refer to fire protection description for more information). However,

As the preferred alternative, the Aquarion Water Company operates a public water system approximately 2,600 feet to the south along Nabby Road. The water main would need to be extended from the south side of Nabby road through the town owned parcel to the building. The existing main is believed to be 12" diameter ductile iron pipe. The Aquarion Brookfield system appears to have sufficient available water to meet school demands. If public water service from Aquarion is desired, meetings with the utility will need to be scheduled in order to determine actual infrastructure needs to serve the school.

### **Sanitary System**

The WPCA, and Langan (WPCA's technical engineer's) reviewed the preliminary plans for the proposed 1,138 student new PK-5 Elementary school and confirmed there is sewer capacity, although this shall be confirmed during the permit application process. Further analysis will need to be conducted to ensure there will be no adverse impacts. Per the current GIS mapping (dated January 2019) from the town, an existing 8" diameter line runs from the building into a 12" main in the street (Candlewood Lake Road). The 8" line can convey up to 325,000 gallons per day or 224 GPM. With an output of 8-10 gallons per day, conservatively, 1,100 students would yield up to 11,000 gallons per day with a max flow of 23 GPM. Additional study shall be conducted relative to invert elevations, condition of the existing 8" line, and history of scheduled maintenance.

### **Flood Plain**

The existing property does contain boundaries for a 500-year flood plain. Similar to the existing building, the new building will be located outside this boundary area and above the flood plain elevation. The design will incorporate additional floodproof measures, if deemed necessary, both for the site and building to further mitigate any concerns relative to potential for flooding. The state process will likely require a flood management certification from the Connecticut Department of Energy & Environmental Protection (CTDEEP) which will review detailed information pertaining to the potential for flooding and ensure necessary measures are taken.

## SECTION XII - CONSTRUCTION GRANT BONUS REQUESTS

None requested at time of submission.

## SECTION XIII - COMMUNITY USES

Typical of many communities, this proposed school will become the home for multiple community uses. As such, the building shall be designed to facilitate activities before and after school hours throughout the year. Separation of areas, building systems, access control points, and support facilities (toilets, mechanical rooms, electrical panels, etc.) shall be integrated into the design as to not affect the primary educational use of the facility. Examples of community uses anticipated for this facility may include but not be limited to:

- Summer enrichment programs – both educational and community related.
- PTO meetings and events, including use of media center, gymnasium, cafeteria/kitchen and multipurpose space.
- Voting – anticipated within the gymnasium.
- Temporary warming shelter during catastrophic community events for those in need, planned for the gymnasium, locker, kitchen and cafeteria area.
- Physical education activities and programs in the gymnasium and outdoor field areas, recreational leagues for example.
- Summer school, limited to specific areas of the school.
- Town meetings – public presentations, community board meetings.
- Various youth club programs, for example Boy and Girl Scout events and meetings
- Access to play areas and playscapes after hours and during the weekends
- Community arts programs – both visual and performing arts – located within the multipurpose room.

## SECTION XIV - FURNITURE, FIXTURES & SPECIALIZED EQUIPMENT

Furnishing, fixtures and equipment will be integrated into the building design and layout during the initial stages of design. The description of the specific furnishings, fixtures in equipment can also be found in Section IX Detailed Description of each space.

Generally, new FF&E items are to promote flexible learning and teaching configurations and an active learning environment. In general products will be selected to promote and support flexible educational environments, durability, and ease of use. The furniture will also support the various age levels, promote comfort, and allows for variety of arrangements to enhance and support collaboration.

### **Generally, instructional spaces are to be furnished with:**

- Chairs, with and without casters depending upon room use and final material selections.
- Student desks/work surfaces – adjustable heights, mobile and flexible to allow for a variety of room arrangement.
- Adjustable height worktable/activity work surfaces.
- Mobile teacher's workstation and chair.

- Tack, white boards and interactive boards with LED monitors (with integrated technology).
- Sound amplification system with podcast/video recording.
- Window treatments for room darkening – inclusive of motorized shades, blackout shades, and window film treatments.
- Metal file and storage cabinets.
- Casework, cabinets and accessible sink with water fountain.
- Water fountains with integrated bottle filler stations.
- Student storage cubbies or lockers appropriate for age group.
- Technology equipment and lockable storage.

**Other items:**

- Office areas (faculty, staff and administrative) – systems furniture, modular with integrated file storage.
- Storage rooms shall be furnished with appropriate shelving and if it is used as a workroom, work table and seating.
- Lockable storage cabinets for custodial equipment, inclusive of flammable cabinet storage where needed.
- Indoor/outdoor recreation equipment.
- Indoor/outdoor presentation equipment and furnishings.
- Final list of FF&E equipment to be developed with BOE representatives and educators prior to completing project documentation.

**SECTION XV - LIST OF EDUCATIONAL SPACES**

Please refer to attached document.