

Project Narrative

The South Kingstown High School (Grades 9-12):

See outline specifications and drawings for more information

ARCHITECTURAL NARRATIVE

For the Stage III Schematic Design, the South Kingstown Department of Public Schools engaged StudioJAED as managing architect with The SLAM Collaborative as design and Architect of Record along with our consultants to assess and design facilities that provide 21st Century learning facilities for their students that will last generations. The new South Kingstown High School will incorporate different types of collaboration and learning spaces to enhance the student daily experience. The Curits Corner athletic complex is also part of the overall project but is being designed/documentated by StudioJAED in a separate package.

The Schematic Design for the new South Kingstown High School (SKHS) is the product of a highly collaborative process. The architects and engineers engaged the district, building committee, superintendent, faculty, and the South Kingstown community throughout this initial design phase.

To validate the preliminary program, a series of programming workshops were conducted with the superintendent, faculty, constituents, and student representatives during the early stages of Schematic Design. These workshops provided the team invaluable feedback regarding program, plan organization, and guided the design team in creating the building's plan layout.

The educational program for South Kingstown High School has 5 basic principles:

1. 21st Century Learning Environments that provide a variety of spaces that offer students different zones to address the variety of learning styles and individual needs
2. Provide a clear organization of the general academic teaching spaces
3. Integrate the CTE programs into the overall school arrangement so there is no student or program isolation
4. Organize the student gathering areas by distinguishing between quiet zones for individual study and contemplation, and more active zones for group work, collaboration and large gatherings.
5. All large public spaces will be located off of the main commons area so the school can operate on a public level as well as a secure academic environment.

The design team was given the Stage II RIDE approved budget and we have worked with the construction budget and total project budget as our goal.

The new South Kingstown High School will be built on the site of the existing high school in a manner that allows the existing school to remain operable during construction. The new school will be built in the current athletic fields along School Street, adjacent to the existing Hazard Building (also an educational facility). Care has

been taken in siting the new facility within the available space to allow adequate distance to the existing facility for a safe construction buffer zone. The new High School will be comprised of a three-story academic tower with a two-story portion containing the public spaces such as the cafeteria, auditorium, gymnasium, and building support all of which would all be located on the first floor. In September of 2027, the students and staff will move into the new school building which will allow for the demolition of the existing school building. After the existing school has been demolished, practice fields will be constructed in its place, north of the new school. The academic tower will contain appropriately sized and outfitted science labs, as well as classrooms and collaborative spaces with visible transparency to put education on display. CTE and Arts spaces will be outfitted with technologies necessary for 21st century education. Additionally, careful care and consideration will be taken to create spaces which enhance both the students' and staff's mental health and wellness.

We know the existing South Kingstown High School is a center for the community with many groups utilizing the auditorium, cafeteria and outdoor spaces. The new school will embrace and enhance that community focus while offering spaces that enrich the educational opportunities for high school students and adult learners. The building is being designed to be easily accessible by the people of South Kingstown after-school-hours while keeping the educational tower segregated and secure. Careful consideration was taken in the planning to make sure that the gymnasium, auditorium, cafeteria and construction technology (CTE spaces) could be accessed and used by the public while also keeping the academic portion of the building safe and secure.

*See Landscape, Civil, and MEP narratives for more information on site and systems.

Interior Design

Interior spaces will make the most of natural light, allowing for a natural circadian rhythm as part of every day for the good health of all inhabitants. Interior glazing in corridor walls affords views out and across educational spaces to put education on display, provide views to the exterior from as many locations as possible and enhance safety and security of inhabitants. Spaces will provide a variety of settings to be sure to accommodate many types of learners and personalities, so every student will have a place to work and think in comfort. Materials will address maintenance and longevity, but also sustainability, as good stewards to the earth. These strategies support the wellness of the individuals within the building, that in turn promote creativity, productivity, and a positive overall student experience. Technology will be on display in appropriate common locations as well as in all educational spaces.

New classroom spaces will be transparent, inviting, and safe. Visual connection to circulation paths will be established and explored. Wayfinding and identifying elements for classrooms will be employed to make distinct 'areas' of learning. The use of different colorways in flooring, ceilings, and doorways may help to identify a type of space within the larger school. This can help to foster a sense of ownership and a 'pride of place' which furthers the student's educational experience. Additional architectural markers are envisioned in key areas to help identify the more public areas like the Auditorium, Gymnasium (with upper walking track), or Cafeteria. All of this attention to

detail in a modern 21st century learning environment will help to heighten the student experience, help them enjoy the school they attend daily, and create a place where each student will believe they belong and feel valued.

A refined, long lasting, well designed and detailed exterior façade will create a character of permanence for SKHS and create a sense of pride in the students. While the exterior materials are being refined, the building is planned to be clad primarily in masonry veneer with cementitious colored panels, accents of metal panel and local stone and curtain wall glass. Energy efficient and low-E glazing is planned for all fenestration. Allowing natural light into as many places as possible will enhance the user experience be they students, faculty or community visitors. Classrooms will have operable windows for natural ventilation when the weather permits. The massing of the building, which steps up from 1.5 to 3 stories, is being carefully studied and crafted to respond to the residential neighborhood. The new high school will fit both in finish and scale within its residential context.

Security

Security at the new South Kingstown High school will continue to be discussed and adjusted amongst administrators and first responders in town. The main entrance will be hardened with ballistic protection in walls/doors/windows. There will be a credentialing window in the lobby to control access to the facility. All exterior doors will be monitored and secondary entrances will also be hardened.

Security systems including cameras will be employed within the school and on the campus. Interior and exterior window will have film or shades to allow inhabitants to shelter in place out of view of potential aggressors.

*See Architectural drawings for additional scope information.

ACOUSTICAL PERFORMANCE NARRATIVE

This report presents overall acoustical recommendations for school projects. These recommendations present information for compliance with the NE-CHPS v3.1 requirements for educational projects. There are two levels of recommendations, those required to meet the NE-CHPS v3.1 EQ 14.0 pre-requisite level, as well as those required to meet the NE-CHPS v3.1 EQ-14.1 requirements for the "enhanced acoustical performance" credit level. The main aspect of the two design levels are as follows (for core learning spaces within the project):

NE-CHPS EQ-14.0 Pre-Requisite Level:

- Background Sound Level: Core learning classrooms are required to have background sound levels of 35 dBA or less.
- Room Reverberation: Specific room reverberation limits are set for mid-frequency (speech) sound in all core learning spaces, based on the room volume.
- Sound/Impact Isolation: Specific airborne sound isolation requirements for partitions, doors, and floor/ceiling constructions are presented in Tables 1 and 3 in the standard.
- Exterior Sound to Interior Spaces: There is a requirement to provide acoustic measurements to assess existing site sound levels, for use to review building exterior envelope isolation requirements.

NE-CHPS EQ-14.1 Enhanced Acoustical Performance Level:

In addition to the requirements of the pre-requisite level, the following are required:

- The standard requires that reverberation Basis of Design targets be established for PAS (Performing Arts Spaces), LAS (Large Assembly Spaces), and APS (Audio Production Spaces) and that calculations be provided showing that the rooms achieve the Basis of Design targets.
- Background Sound Level (Core Learning): Core learning spaces are required to have background sound levels (from intrusion of exterior sound and building services (HVAC)) of 35 dBA or less. PAS and APS are included in this requirement for the credit level.
- Background Sound Level (Ancillary Learning): Ancillary learning spaces are required to have background sound levels (from intrusion of exterior sound and building services (HVAC)) of 40 dBA or less. PAS and APS are included in this requirement.

- Sound/Impact Isolation: Specific airborne sound isolation requirements for partitions, doors, and floor/ceiling constructions are presented in Tables 4 and 5. The isolation ratings are more stringent in some areas as compared to the EQ 14.0 pre-req level.

Core Learning Space Designation:

The NE-CHPS v3.1 standard requires that all classroom and core learning spaces be identified. The following is a list of classrooms and/or core learning spaces based on our project review. Room numbers, when available, should be added to this list. The following describes “core learning classrooms” as defined in the ANSI S12.60-2010 standard (to which the NE-CHPS standard refers):

The ANSI S12.60-2010 school acoustic standard notes “core learning spaces” as “spaces for educational activities where the primary functions are teaching and learning and where good speech communication is critical to a student’s academic achievement.” These spaces include, but are not limited to, “classrooms (enclosed or open plan), instructional pods or activity areas, group instruction rooms, libraries, offices used for educational purposes, therapy rooms and music rooms for instruction or practice.”

We anticipate that the following room designations will be considered core learning spaces:

- 9-12 Grade Classrooms including Science Labs
- Music Classrooms including Band Room and Choral Room
- Media Center
- CTE Spaces – Construction Technology, Health Sciences, Business
- Art Labs
- Special Education Rooms
- Professional Offices (teacher spaces)

Ancillary Learning Space Designation:

The following describes “ancillary learning classrooms” as defined in the ANSI S12.60-2010 standard (to which the NE-CHPS standard refers):

Spaces where good communication is important to a student’s educational progress but for which the primary educational functions are informal learning, social interaction, or similar activity other than formal education. For purposes of this part, ancillary learning spaces include corridors, cafeterias, and gymnasias but do not include natatoria, auditoria, music performance spaces, teleconferencing rooms, or special education rooms such as those for severely acoustically challenged students.

I. Sound Isolation:

This section provides requirements and recommendations for interior partition designs and STC ratings.

Specific Acoustical Door Types:

The following table notes specific door types as included in this report:

Table 1: Door Types

Door Type	Door Panel STC Rating	Perimeter Gasket	Astragal Gasket (where applicable)	Door Drop Seal	Notes
G-35	STC 35	Yes, field-installed	Yes, field-installed	Yes, field-installed	1
G-40	STC 40	Yes, field-installed	Yes, field-installed	Yes, field-installed	1
AR-45	STC 45 with frame	Factory installed	Factory installed	Factory installed	2
AR-50	STC 50 with frame	Factory installed	Factory installed	Factory installed	2

Note 1: The intent is for the door panel/slab STC rating to be listed in the door schedule sheet, and be specified as an STC requirement for the door manufacturer to provide a panel/slab with the minimum STC rating as listed in the door schedule. The door hardware specification must include the acoustical gaskets as listed for each acoustically rated door panel/slab.

Note 2: The intent is to include an acoustically rated door/frame/gasket assembly which has been acoustically tested to meet the minimum STC rating, in a separate specification section. The door type and STC rating should be called out where required in the door schedule sheet.

Partition STC Ratings as Shown on Drawing Sheet A601:

Based on review of partition sheet A600, the following partitions meet the ratings as noted in table 2: The STC breakdowns listed correspond to the NE-CHPS minimum requirements for various adjacencies.

- STC 38+: 1, 1A, M4
- STC 43+: 1, 1A, M4
- STC 45+: 1, 6, M6, M8
- STC 50+: 2, 8, C1, M10, M12, 1R
- STC 53+: 7, 8, C2, 3R
- STC 60+: 2R, 4R

For Partitions with STC ratings of 45 or higher, where recessed boxes will be located back to back or within the same framing bay, we recommend an acoustical sealant backing putty be installed during construction, such as Kinetics Noise Control "IsoBacker": <http://www.kineticsnoise.com/arch/isobacker.html>

Required Partition Types for Typical Adjacencies:

The following table provides sound isolation recommendations for general core learning space adjacencies that occur in a number of areas of the project as "required" for the NE-CHPS pre-req level, or "required" for the NE-CHPS 14.1 acoustical performance credit. In some cases, we provide recommendations that differ from NE-CHPS based on the ANSI acoustic standard and/or good design practice, and these are noted. These ratings are considered as minimum requirements.

Table 2: Required Partition Types / General Locations

Room	Adjacent Room	NE-CHPS 14.0 Pre-Requisite		NE-CHPS 14.1 Credit Level		Notes
		Required STC/IIC Rating of Fixed Partition	Required Door Type	Required STC/IIC Rating of Fixed Partition	Required Door Type	
Core Classroom (with pass door)	Core Classroom	STC 43	G-40	STC 50	G-40	1, 2
	Corridor	STC 38	NA	STC 45*	NA	3, 4, 10
Core Classroom (no pass door)	Core Classroom	STC 43	NA	STC 50	NA	
	Stair	STC 40	NA	STC 40*	NA	4
	Common-Use and Public-Use Toilet Room	STC 53	NA	STC 53*	NA	5
	Admin Office	STC 40	NA	STC 40*	NA	6
	Conference Room	STC 50	NA	STC 50*	NA	7
	Music Room, Auditorium, Mechanical Room, Gymnasium, Cafeteria	STC 60	NA	STC 60	NA	8
Office, Conference Room (with pass door)	Corridor, Circulation	STC 40	G-40	STC 50	G-40	9
Core Classroom (impact isolation)	Regularly Occupied Space Above	IIC 45	NA	IIC 45	NA	11

*There is no specific requirement listed for some adjacencies in the tables (Tables 1 and 4) in NE-CHPS applicable to airborne sound isolation ratings (STC). In these cases, we have used the ANSI S12.60 standard and/or good design practice in the recommended STC levels. Where Tables 4 and 5 of the NE-CHPS standard (Credit 14.1 Level) do not include some of the adjacencies as called out in Tables 1 and 3 (pre-req) we have carried over the types to the Credit 14.1 level column and note below specific recommendations. NE-CHPS should confirm that this is an appropriate approach.

General Notes:

- Note 1: Recommend STC ratings nearer to STC 50 (or higher) from classroom-to-classroom adjacencies (STC 50 is required by ANSI S12.60).
- Note 2: The NE-CHPS credit 14.1 lists the STC 50 requirement for the fixed partition only, though does not list an STC requirement for the door (the STC 40 requirement is a carry-over from the pre-req table). We understand that the intent of the standard is for the door and partition combination to meet the ANSI S12.60 standard, which requires an STC rating of 50 for the partition door combination. To meet the ANSI requirement, the partition would be required for a rating of STC 53 or higher, and the door to be acoustically rated at STC 47 or higher.
- Note 3: There is no specific classroom / corridor door STC rating in the pre-req level, which “assumes the noise generated by corridor traffic can be controlled administratively by school staff”.
- Note 4: Recommend a minimum STC rating of 45 (this is also the requirement of the ANSI S12.60 standard) for the classroom to stair/corridor partition. If the stairs are significantly used during class time, we recommend an STC 50 rating. There is no requirement listed for STC rating for classroom to corridor in the NE-CHPS credit 14.1 table (Table 4).
- Note 5: There is no classroom to group toilet room STC requirement in the NE-CHPS credit level 14.1 table (Table 4). Recommend the STC 53 rating, as included in the pre-req Table 1. For toilet rooms, the NE-CHPS standard requires *“in any wall between a classroom and a public restroom, no plumbing should be rigidly attached to the classroom wall framing. The wall assembly shall not contain large penetrations such as for restroom supply dispensers or disposals and shall not support rigidly attached electric hand dryer devices. Sound rating of hand dryer devices shall be clearly documented.”*
- Note 6: We recommend a minimum STC 45 rating for classroom to office for “good” speech privacy. If high privacy levels are expected, STC 50 is recommended. There is no requirement listed for STC rating for classroom to office in the NE-CHPS credit 14.1 table (Table 4).
- Note 7: There is no requirement listed for STC rating for classroom to conference room in the NE-CHPS credit 14.1 table (Table 4). STC 50 is a good target for high speech privacy.
- Note 8: For some of these adjacencies, there is no information in Table 1 or Table 4 (some of the specific adjacencies to classrooms are not listed). Can use the ANSI S12.60 standard for the STC 60 rating, which is an appropriate target.
- Note 9: Table 1 lists STC 40 for conference to corridor adjacencies (fixed partition). Recommend a minimum STC 45+ rating for this adjacency.
- Note 10: It is typical to use ¼-inch tempered or laminated glass for door view panels, or for door side lights (the ¼-inch glazing will have similar or higher STC rating than the door (STC-30 doors)). For areas of glazing greater than 10 sq. ft. the standard requires a minimum STC rating of 45 for the combination of the fixed partition

and the glazing), and in these circumstances, will require review based on specific areas of each wall element. If the sidelight glazing is 10 sq. ft. of more, review specific partitions and provide minimum glass STC ratings.

Note 11: The IIC 45 rating is to be achieved with no carpet or other soft finish floor (which would typically increase the IIC rating). With standard steel/concrete composite constructions (VCT finish flooring, etc.) the receiving room would require a full ceiling of mineral fiber ACT, gypsum, or other finish material that provides an isolation rating equivalent to CAC 35 or higher. Open or partially open ceilings would require floor construction upgrades or other means to achieve the IIC 45 rating.

Exterior Sound:

1. NE-CHPS requires that site sound levels be evaluated. This may be either by installing sound monitors for approximately a one-week period, or a visit to the site to perform site sound measurements during times expected to be the noisiest (highest levels of traffic, etc.). The site monitoring option would also provide information useful to assess exterior mechanical equipment sound to neighboring properties, if included in the project scope.
2. If exposed metal deck will be included in any of the noise-sensitive spaces, we recommend addition of one layer of 5/8-inch DensDeck or equal atop the deck, the insulation layer, and two layers of ½-inch DensDeck above the insulation (with membrane roof above). This assembly will have an STC of approximately 40 or higher, and will provide good control of noise from heavier rainfall.

II. Room Acoustics:

The following are general treatment recommendations for use in project scope / budgeting. We will review these areas further and provide additional information / recommendations.

Type "A" treatment refers to wall-mounted sound absorptive panels, with NRC of 0.85 or higher. For project scope a fabric-covered impact resistant panel, 2-inches thick, may be used for pricing. The following link is acceptable: <http://conweddesignscape.com/products/wall-panels/> ("Respond IR").

General Core Learning Spaces:

Criteria: The core learning spaces need to be designed to meet specific reverberation limits.

Recommendation: We recommend acoustical tile ceilings with minimum NRC of 0.70 and minimum CAC of 35. If there are significant areas of the ceiling that will be gypsum, radiant panels, or other sound-reflective surface, we recommend an

equivalent area of sound absorptive wall treatment be added to the project scope, to be type "A" sound absorptive treatment.

Library/Media Center:

Criteria: The core learning spaces need to be designed to meet specific reverberation limits.

Recommendation: We recommend acoustical tile ceilings with minimum NRC of 0.70 and minimum CAC of 35. If there are significant areas of the ceiling that will be gypsum, radiant panels, or other sound-reflective surface, we recommend an equivalent area of sound absorptive wall treatment be added to the project scope, to be type "A" sound absorptive treatment.

Music – Band and Choral Rooms

Criteria: The core learning spaces need to be designed to meet specific reverberation limits.

Recommendations: Use an acoustical ceiling tile with minimum NRC of 0.70 and minimum CAC of 35 and 300 sq. ft. of type "A" wall treatment:

Gymnasium:

Criteria: The NE-CHPS standard considers this an ancillary learning space. Based on the room volume, the NE-CHPS standard requires mid-frequency reverberation of 1.0 second or less at middle sound frequencies.

Recommendations:

- Include a sound absorptive acoustic roof deck (or other sound absorptive surface) with NRC rating of 0.80 or higher.
- Include a minimum area of 1,000 sq. ft. of type "A" sound absorption wall treatment be included in the project scope, or other sound absorptive wall treatment with NRC rating of 0.85 or higher.

Cafeteria:

Criteria: The NE-CHPS standard considers this an ancillary learning space. Based on the room volume, the NE-CHPS standard requires mid-frequency reverberation of 1.0 second or less at middle sound frequencies.

Recommendations:

- Include a sound absorptive acoustic roof deck (or other sound absorptive surface) with NRC rating of 0.80 or higher.
- Include a minimum area of 600 sq. ft. of type "A" sound absorption wall treatment be included in the project scope, or other sound absorptive wall treatment with NRC rating of 0.85 or higher.

III. Mechanical Equipment Noise/Vibration Control:

When mechanical drawings are further developed and manufacturers' equipment sound data is available from the project MEP, NE-CHPS requires that acoustical modeling be performed to provide specific noise control recommendations to meet the low background sound requirement of 35 dBA for core learning spaces and 40 dBA for ancillary learning spaces. The following provides general information on good design practice for noise/vibration control.

For general recommendations for scope/cost, we recommend the following:

1. For rooftop units which will include cooling compressors located (in plan) above or within approximately 10-ft. from core learning spaces or ancillary learning spaces, we recommend the following:
 - A concrete roof pour, approximately 5-inch total thickness (or more) standard weight concrete, located beneath the RTU and to extend approximately 4-ft. or more beyond the rooftop unit footprint.
 - A vibration isolation curb, with spring isolators selected for minimum 2-inch static deflection. Isolation curbs are available from Novia Associates, Mason Industries, Kinetics Noise Control and others.
2. For rooftop units with no internal cooling compressors, the fans should have spring isolated bases with minimum 2-inch static deflection springs. The rooftop air-handlers may be mounted on rigid curbs. No concrete pour is required for these units. If any of the units are located above noise-sensitive or regularly occupied spaces, we recommend two layers of 5/8-inch cement board be installed within the curb atop the deck, and 6-inch mineral wool insulation be installed atop the cement board.
3. We typically find that in-line or elbow type sound attenuators are required for main supply and return duct paths serving air-handling units for fan noise control. For project scope, we recommend carrying the following attenuators (to be confirmed when drawings and unit information are available later in the design phase):
 - In-line sound attenuators following the roof duct drop and elbow, to be 5-ft. long. Industrial Acoustics Company type 5-LFM attenuators may be used for pricing.
4. If plenum return air paths are planned for any core learning spaces or noise-sensitive spaces, to prevent sound transmission via the duct paths common to classrooms and other spaces requiring sound isolation, as well as control sound transmission from floor to floor and from rain impact sound, we recommend a lined duct elbow be installed above the return grilles. The duct elbow should be a minimum total 4-ft. in length, with 1-inch thick duct liner. The elbow would include a short vertical run at the return grille connection, and a 90 degree duct elbow to a lined horizontal duct run.
5. If displacement supply air diffusers are planned for core learning spaces or other noise-sensitive spaces, these are typically "hard-ducted" without use of insulated flexible duct. Sound can be transmitted from room to room through

- an unlined duct path; flex duct provides significant sound attenuation as compared to hard-walled duct. If not already planned, we recommend either acoustic lining the duct takeoff, elbow, and vertical drop to the displacement diffuser, or acoustical duct lining in the main duct common to groups of classrooms.
6. To control sound transmission from room to room in the music suite, we recommend all ductwork serving the Music rooms include 1-inch acoustical duct lining. Alternatively, attenuators may be used to control sound from room to room. We can provide attenuator values if the attenuator option is selected.
 7. If VAV boxes or FCU's will be used to provide air control to core learning spaces and other noise-sensitive spaces, we recommend 10-ft. of duct liner be included for project pricing at the discharge of the air terminal devices.
 8. We recommend that opposed blade dampers not be used for diffusers/grilles serving core learning spaces or other noise-sensitive spaces. Standard air control dampers should be used at the branches serving the diffusers/grilles.
 9. Use a duct velocity guideline table for reference, which lists recommended maximum ductwork velocity based on duct locations relative to the diffusers/grilles, and whether ductwork will be acoustically lined. The following design criteria may be used as a guide for specific areas.
 - Core classrooms and Conference rooms: NC-30 (35 dBA)
 - Other noise-sensitive spaces: NC-30
 - Private Offices: NC-35
 - Corridors/Lobbies for informal teaching: NC-35 (40 dBA for NE-CHPS 14.1 Credit)
 - Cafeteria/Multi-Purpose: NC-30 (as part of the performance area)
 - Open Plan Offices: NC-40
 - Gymnasium: NC-35 (40 dBA for NE-CHPS 14.1 Credit)
 - Corridors/Lobbies for circulation: NC-40 to 45
 10. Air supply diffusers and return grilles should have a manufacturers' NC rating at least 10-points less than the NC room criteria listed (item 9 above).

STRUCTURAL BUILDING SYSTEM NARRATIVE:

See structural narrative attached.