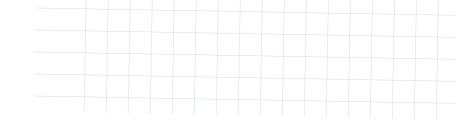
DESIGN GUIDELINES

for Construction or Renovation of Facilities for Early Education and Out-of-School Time Programs





Department of Early Education and Care





Children's Investment Fund (Fund) was established in 1991 to increase the supply and quality of early childhood education (ECE) and out-of-school time (OST) facilities for children from low- and moderateincome families in Massachusetts. The Fund's mission is to ensure that children spend their days in physical environments that support healthy development and learning. The Fund provides loan and grant financing, technical assistance, and training to nonprofit ECE and OST organizations that are planning facilities projects. The Fund is affiliated with the Community Economic Development Assistance Corporation (CEDAC).



The mission of the Massachusetts Department of Early Education and Care (EEC) is to support all children in their development as lifelong learners and contributing members of the community, and to support families in their essential work as parents and caregivers. EEC is responsible for the licensing and regulation of approximately 11,000 family, group and school-age child care providers, as well as nearly 700 residential care programs and adoption/ foster care placement agencies. It also: administers financial assistance for over 50.000 children to access high-guality, early education, and out-of-school time programs that support their developmental success; provides additional parenting resources and services for families; and supports the professional development of educators in the early education and child care field.

Both Children's Investment Fund and the Department of Early Education and Care oversee the Early Education and Out of School Time Capital Fund (EEOST), a unique source of state funding that supports the development of high-quality ECE and OST facilities.

This report was written by Mav Pardee, Woodie Arthur of D.W. Arthur Associates Architecture, Theresa Jordan, and Carl Sussman. Photography by John Kennard. Design images by D.W. Arthur Associates. The report was funded by the Department of Early Education and Care for the Early Education and Out of School Time Capital Fund (EEOST).

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INTRODUCTION

OVERVIEW

In 2013, the Commonwealth of Massachusetts enacted the Early Education and Out of School Time (EEOST) Capital Fund Program (606 CMR 15.00) to provide grants to support facilities improvements to licensed center-based early childhood education (ECE) and out-of-school time (OST) programs operated by non-profit organizations. Funded with bond financing through the Massachusetts Department of Early Education and Care (EEC), the EEOST Capital Fund is administered by the Community Economic Development Assistance Corporation (CEDAC) through its affiliate, Children's Investment Fund (Fund). The goal of these grants is to enable eligible applicants to improve the quality of their education and care programs by improving the physical environment to support better health and developmental outcomes for young children.

Funding is limited to organizations with a minimum enrollment of 25% children on public subsidies. Those subsidy programs are described in the Program Guidelines for Early Education and Out of School Time Capital Fund Grants to Develop Eligible Facilities for Use and Large Group and School Age Child Care Programs. The Fund and EEC developed the Design Guidelines to introduce design professionals working with EEOST Capital Fund applicants to the unique requirements for these facilities, as well as strategies for translating the EEOST Capital Fund goals and expectations into construction plans.

Throughout the Design Guidelines there are references to children according to the age groups defined by EEC for purposes of licensing. The age groups are described below:

- > Infant: a child younger than 15 months old
- > Toddler: a child from 15 to 33 months old
- > Preschool: a child from 2 years, 9 months to 5 years old
- > School age: a child from age 5 through 13 years old

Five-year-old children are considered "school age" when enrolled in a privateor public-school kindergarten. The spaces in ECE and OST environments need to address numerous programmatic, health and safety requirements in a manner that is welcoming for families, nurturing for children, and supportive of program staff. The most effective design process will include both program leadership and experienced teaching staff. They understand the limitations of their current space, their program goals and aspirations for the new facility, and the complex regulations for operating an ECE or OST program. Nevertheless, as design professionals, you can help the program staff to envision creative ways to achieve their goals. We encourage both the program staff and their architects to visit other centers to experience a range of inspiring and creative design solutions.

Design professionals retained for these projects may be unfamiliar with this specialized and highly regulated building type. The Design Guidelines are intended to assist teams by highlighting many of the regulations and design considerations unique to this building type. Because the EEOST Capital Fund was established to help improve the quality of care and the outcomes for young children, they focus primarily on children's spaces. These Design Guidelines are not exhaustive. The project team will need to address many other program aspects and components. For example:

- > Center entry and reception, including provisions for security
- > Administrative office space, staff spaces and a parent resource area
- > Details of the layout of the activity areas within classrooms
- > Storage Needs: administrative, classroom supplies and seasonal equipment, outdoor storage, and in centers serving young children, provisions for storing car seats and strollers used by families as well as the larger multi-child strollers used to transport young children in walks around the neighborhood
- > Kitchen and food preparation

The resources listed in the bibliography at the end of this document provide excellent information about these other design issues.

PART 1 — APPLICABLE REGULATIONS & REFERENCES

ECE and OST centers are highly regulated, and a number of publications must be consulted to ensure that a center's environment is designed and constructed in full compliance with regulations. The Design Guidelines begin with a list of regulations and codes that pertain to ECE and OST facilities.

Since compliance with regulations is integral to the design of these environments, the Design Guidelines include abbreviations or "keys" throughout the text to indicate which references to consult on a specific topic or standard. The keys are listed in Part 1, with associated comments or references. In some cases, a "key" may also refer to a person, such as "O" for the Owner (project sponsor), or to a procedure or process such as "PL" (for preview with licenser). These keys should alert you to items that require particularly close attention.

PART 2 — SPECIFIC DESIGN CONSIDERATIONS

This section addresses the varied aspects and components of the physical environment that support quality in ECE and OST programs. There is a wellknown adage in early education that "the environment is the third teacher." Young children learn through exploring and interacting with their environment. The adage also pays homage to a well functioning space: a safe and well-planned classroom means children can become more self-reliant and teachers have more time to interact with children to support their development. High-quality spaces involve many features that work together to support care and learning. Similarly, for school-age children, OST environments need to be appropriate and engaging for groups that can range from 5-year-olds to 13-year-olds. These environments should reflect the developmental needs and interests of each age group. In all cases, safety and supervisory considerations should be appropriate to the age group that will occupy the space.

PART 3 — QRIS IMPACT ON EEOST CAPITAL FUND PROJECTS

In an effort to promote quality improvement, Massachusetts, like many other states, has created a Quality Rating and Improvement System (QRIS). Participating programs are rated from Level 1 to 4 based on reaching the QRIS-defined quality standards. One of the chief goals for the EEOST Capital Fund is to help providers achieve Level 3 or 4 in QRIS Standard 2: "Safe, Healthy Indoor and Outdoor Environments." Consult the Massachusetts QRIS, Standard 2 for additional information.

Part 3 therefore addresses some of the criteria for physical space addressed in the QRIS standards. Please note that the QRIS is a relatively new set of standards and is therefore evolving. It is important to regularly review the QRIS standards to ensure that your project will meet the Level 3 or Level 4 requirements. The QRIS standards rely heavily on a series of environmental rating scales as measurement methods. The scales were developed for different age groups and are listed in the Bibliography. The relevant sections of the environmental rating scales should be reviewed during the design process.

PART 1

APPLICABLE REGULATIONS & REFERENCES

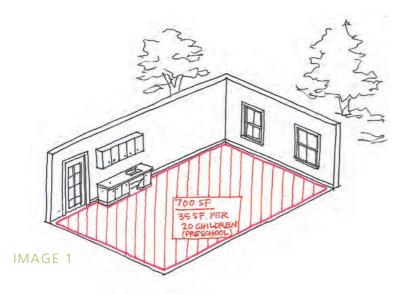
Some applicable regulations involve interpretation. Careful review with relevant parties is critical to ensuring that regulators concur with the plans proposed by your design team. It is highly advisable to preview the design approach with the applicable regulatory officials early in the design process.

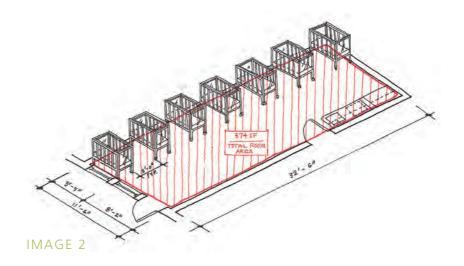
In addition to the regulatory documents, there are many additional support reference guides that assist in design approach and provide advice for consideration specific to child care design. A representative sample of these has also been included in the Bibliography. In all cases, references to design standards or requirements should be cross-referenced with current regulatory documents and policies.

KEYS & LIST OF REFERENCES

	Comment	Reference			
BC	BUILDING CODE (may require consultation with the code official)	780 CMR	Commonwealth of Massachusetts. Massachusetts Building Code: Board of Building Regulations and Standards (BBRS), 8 th edition, August 2010. This document is the state modifications to the International Building Code International Code Council. <u>2009 International Building Code</u> , printed August 2010		
BF	BARRIER FREE – ACCESSIBILITY REGULATIONS (both federal and state accessibility regulations apply)	ADA (fed) MAAB (state)	United States Department of Justice. 28 CFR, Part 36, Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, March 2011. Commonwealth of Massachusetts. "Architectural Access Board Rules and Regulations, 521 CMR, January 27, 2006		
СР	CPSC – PUBLIC PLAYGROUND SAFETY HANDBOOK	CPSC	United States Consumer Product Safety Commission. Public Playground Safety Handbook, Publication #325, Nov. 2010		
E	ENGINEERING	N.A.			
EC	ELECTRICAL CODE (state)	527 CMR 12	Board of Fire Prevention Regulations 527 CMR 12.00: Massachusetts Electrical Code		
EEC	LICENSING REGULATIONS & POLICIES (state) May require consultation with licenser	606 CMR 7.00	Commonwealth of Massachusetts. "Standards for the Licensure or Approval of Family Child Care; Small Group and School Age and Large Group and School Age Child Care Programs, 606 CMR 7." See also policy statements on the EEC website, particularly those related to "Licensing Policies for Groups and School Age Child Care Programs"		
FC	FIRE CODES (state and city)	527 CMR 1.00	National Fire Prevention Association. Model Fire Code NFPA-1, 2012 edition		
L	LIGHT LEVELS	IESNA	Illuminating Engineering Society of North America. The IESNA Lighting Handbook, 10th edition		
0	OWNER (sponsor of the project should have a project manager charged with overseeing the project)		EEOST Capital Fund Program Guidelines require use of a Project Manager		
PC	PLUMBING CODE (state)	248 CMR 10.00	Commonwealth of Massachusetts. Massachusetts Uniform State Plumbing Code, 2014		
PL	PREVIEW SOLUTION WITH LICENSER STRONGLY RECOMMENDED	N.A.			
QRIS	QUALITY RATING AND IMPROVEMENT SYSTEM Level 3 or 4 Subcategory 2. Safe, Healthy Indoor and Outdoor Environments	MA QRIS Standards	Commonwealth of Massachusetts. Department of Early Education and Care. <u>MA QRIS Center-Based/School-Based</u> <u>Standards with Guidance</u> . <u>MA QRIS After School/Out of School Time Standards with Guidance</u>		
S	SUSTAINABILITY	LEED	United States Green Building Council. <u>Leadership in Energy and Environmental Design: Reference Guide for</u> <u>Building Design and Construction</u> , 2013 edition		
ВН	BOARD OF HEALTH REGULATIONS: DPH – Department of Public Health and Department of Elementary and Secondary Education for compliance with requirements of the Child and Adult Care Food Program		Regulations on food storage and preparation are not addressed in this document		

PART 2





SPECIFIC DESIGN CONSIDERATIONS

This section provides information on design elements that support high-quality education programs.

A. Classroom Size

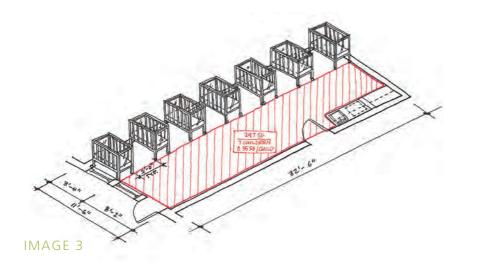
Having sufficient space in ECE and OST classrooms is a prerequisite for program quality. Classroom size is calculated based on square feet per child. Providing adequate space, however, can be one of the most challenging aspects of the design process because floor area has a direct impact on the cost of a project.

Licensing requires a minimum of 35 square feet of activity space per child. Excluded from the calculation is the space devoted to certain furnishings, casework and support areas. (PL) The following are generally included as part of child activity space and can be counted in the square foot allocation:

- > Children's cubbies located within the classroom
- > Countertops used regularly by children for their activities
- > Diaper-changing counters and sinks
- > Handwashing sinks
- > Low shelves and storage units for toys, art supplies and curriculum materials set up for children's independent access
- > Naptime cots, mats and cribs stored in the classroom
- > Tables and chairs used for meals and table activities

The following are excluded:

- > Closets
- > Cubbies in hallways or located in a single-purpose cubby area
- > Storage units for children's files, paper goods, food storage, cleaning equipment, etc.



See also the policy statement "Determining Activity Space" on the EEC website. (EEC)

Although licensing regulations require a minimum of 35 square feet of activity space per child, leaders in the ECE and OST field generally consider this size to be insufficient for creating well-developed "interest" or "activity" areas, regions within each classroom that are set up for different types of activities. QRIS currently requires five interest areas within the classroom, and some programs provide more. The American Academy of Pediatrics and the Head Start Technical Assistance Center recommend 50 square feet per child. The General Services Administration and the Department of Defense, that oversee the design of centers in federal buildings and on military bases, respectively, recommend 45 square feet per child. A 50 square foot per child allocation is preferable if the budget allows. In all cases careful consideration should be given to storage and furnishings to optimize the use of available space and to create effective activity areas.

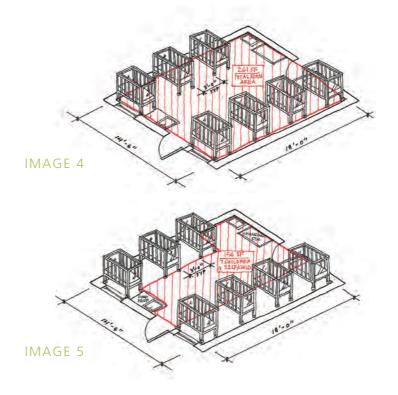


Image #1 illustrates the basic method to calculate the area of a classroom. Note that the "footprint" of the food preparation cabinetry is excluded from the activity area calculation, since it is not an element that is directly used by children as part of their activities.

Images #2 through #5 illustrate options for infant rooms, and particularly focus on the impact of cribs and appropriate crib side-access spaces on usable floor area. While inclusion of crib areas in calculation of activity area is allowed, this approach can result in a disproportionately small amount of area for children's play. (See related discussion regarding infant nap areas in Part 2 D.)

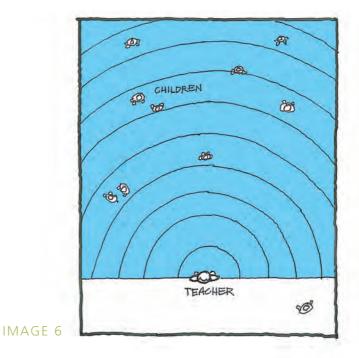
B. Classroom Shape

Classroom shape plays a significant role in how well teachers can create an environment that supports a range of activities while maintaining proper supervision. Since activity areas require different measurements, furnishings, lighting and other characteristics, the designer should discuss the number of activity areas, the design requirements for each, and suitable adjacencies with teaching staff. Furnishings are used most often to subdivide the classroom into distinct activity areas. Yet room shape is a particularly effective strategy for defining distinct activity areas. Shallow alcoves, varying ceiling heights, platforms and sound-absorptive materials can help to both define activity areas and manage potential mismatch between adjacent activities.

An initial instinct is to limit classroom shapes to squares and rectangles in order to provide clear sight lines throughout. These simple room shapes may be easy to supervise, but they lack variety of scale and rely almost exclusively on furnishings to define activity areas. Noise levels within a classroom can also be more challenging to control in square/rectangular room shapes.

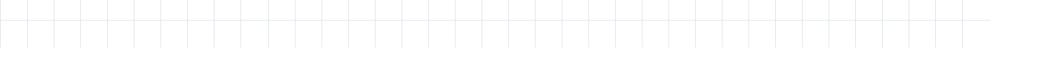
In contrast, irregularly-shaped rooms with shallow alcoves can help define activity areas and provide a degree of separation between less compatible activities without undermining the supervision lines of sight. (PL) Alcoves are ideal for cozy areas such as a book corner, listening station and other quiet activities within the classroom. Dimensions of alcoves should be carefully considered to ensure that they can be easily supervised. At the same time, alcoves should be deep enough to provide the desired degree of separation from distractions in adjacent activity areas.

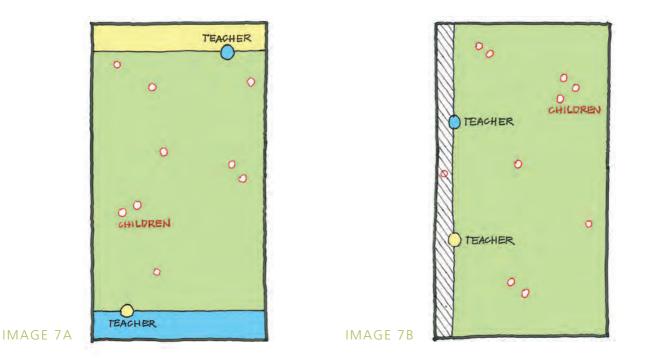
High-quality care and education depends on adult-child interactions and adult supervision. If children were static, then supervision would be a simple interplay between room shape and central positioning of educators. But these programs are highly dynamic; children move around and educators need to adjust accordingly. In order to provide supervision, the positioning, movement and coordination of the teachers is critical. Because of the impact a room shape has on supervision,



close coordination between the program owner (O) and the design team is crucial in the earliest design stages to ensure the suitability of room configurations.

Image #6 provides an introduction to the series of graphics that follow. This image depicts a plan view of a rectangular room with a teacher in the lower center of the room. The teacher's head, shoulders and feet are meant to show which way s/he is facing, in this case looking straight across the room. A horizontal line running parallel with teacher's shoulders indicates a "field of view," meaning the basic cone of vision from this position. For purposes of these illustrations, we've assumed the field of view is 180 degrees (including peripheral vision on either side). The blue area is within the teacher's view. The other characters (heads, shoulders) indicate children. Note that the teacher can see all but one child in this scenario, since one is behind and to the right of the teacher's peripheral vision.





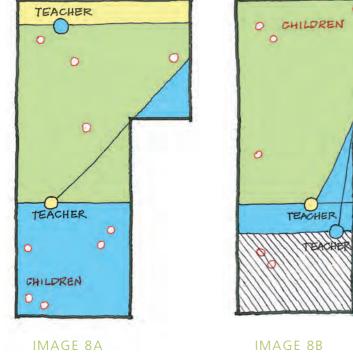
Educators in these programs are not static either. They often move around the classroom, guiding activities, conversing with children, managing children's needs and interests. **Images #7 through #9** illustrate the sight lines for a range of classroom shapes. Each shows two teachers, since the most typical staffing pattern will be two or three teachers per classroom. Each teacher's field of view is depicted by either blue or yellow. The areas shown in green can be seen by both teachers (depicted as either yellow or blue circles in these images). Those areas in either yellow or blue can only be seen by the teacher denoted with the same color. Areas outside the field of view of both teachers are indicated with hatching.

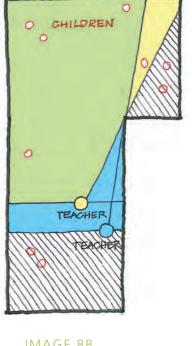
Images #7A and 7B illustrate a basic rectangular room with teachers in two different locations. In A, the teachers are at opposite ends looking towards the other end of the room. Here, all areas of the room are viewed by at least one teacher. In B, both teachers are on one side of the room looking across. In this

case, it is possible that a child could be close to the left wall and not be observed by either teacher, even in this simple rectangle.

In many EEOST renovation projects, centers are located in existing buildings designed for another use, so the building may not have rectangular rooms. In configuring the space, consider the pros and cons of different room shapes. It may be necessary to address supervision requirements through increased staffing, which is expensive, or careful arrangement of the space to allow for adequate supervision.

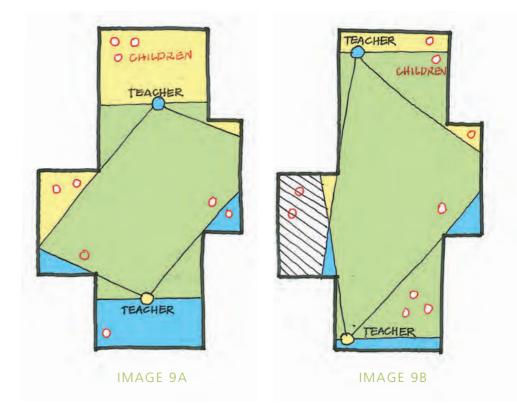
Questionable configurations should be reviewed and approved by the EEC licenser, otherwise it may be necessary to close off certain areas that cannot be adequately supervised. In OST programs, there may be more flexibility in the configuration of the rooms, due to the increased independence of the children. (EEC) (PL)





Images #8A and 8B illustrate a "shallow ell" room shape. This is a desirable shape since it produces five interior corners, rather than four. Corners are very helpful in defining activity areas. In A, the two teachers are positioned to enable visual supervision of the entire room. In B, the teachers are near each other and both looking in the same direction. The "blind spots" are indicated by hatching. Supervision is, therefore, a function of both room shape and the way teachers position themselves and move through the space to supervise and enrich children's activities.

Note that all the images in this document are illustrative. In this case, furnishings placed against the wall in the alcove would reduce the depth of the ell and ensure that children in that area were more easily seen by the teachers.



Images #9A and 9B illustrate a "shallow cruciform" room shape. In A, the two teachers are positioned to enable visual supervision of the entire room. In B, the teachers are at either ends of the room and there is a blind-spot section in one of the side alcoves. Again, placement of furnishings and teacher circulation around the classroom could make this room shape feasible. The advantages of irregular configurations need to be balanced against their impact on classroom supervision.

While the shape of the room is important for adequate supervision, it is also important to note that teachers are often on floor level with the children, so placement of furnishings can also impede sight lines. (EEC) (PL)

C. Classroom Safety

Although the *entire* building must address all child-safety concerns, the classrooms — in particular — must be especially well-designed, since children spend a majority of their time in them. The following is a list of some of the physical environment details that warrant careful attention:

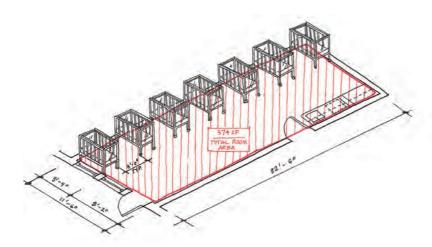
- > Provide child-safe, tamper-resistant outlets in all rooms and areas that children access. Where possible, locate outlets on upper walls and provide electrical cord covers to eliminate children's access to the cords or outlets. (EC)
- > Avoid sharp edges and corners at walls and millwork. Provide radius edges at all corners or install corner guards.
- > Install window guards that restrict the opening size for upper level windows in classrooms and child spaces. (EEC)
- > Avoid first-floor casement windows that swing into space used by children, either indoors or outdoors.
- > Provide high-quality window screens.
- > Install fall-zone-compliant surfacing for indoor lofts in coordination with licensing requirements. (EEC)
- > Avoid exposed bulbs in lighting fixtures.
- > Secure furniture to avoid tipping. (EEC)
- > Install finger guards or alternate specialty hardware intended to minimize potential for injury at door-hinge pinch-points.

D. Nap Area – Infant Rooms

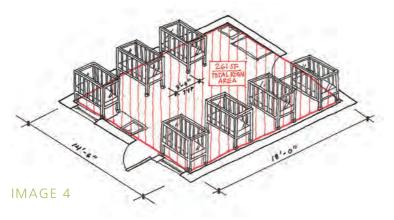
The approach to the configuration and design of the nap area for infant classrooms continues to evolve to address recommendations for supervision of children in cribs.

Current licensing policy requires that sleeping infants "be under direct visual supervision at all times, including while napping," which leads to a change in infant room layouts. Now cribs are more likely to be located within the main classroom activity space instead of in a separate crib area. Moreover, the current policy also leads programs to arrange cribs in a single row within the activity area to ensure the teachers' ability to clearly observe each crib while attending to the children that are awake as shown in **Images #3 and #5**.

While this integrated crib/activity area approach helps with visual supervision of the cribs, it is more challenging to provide a "quiet" area for sleeping infants, and to keep mobile infants from crawling around/under the cribs. This is particularly challenging when infant rooms are built at the EEC minimum measurement of 35 square feet per child, since cribs and clearances consume much of the space. Small rooms that will include both infants and toddlers become especially problematic because toddlers move around a great deal. Since the area occupied by cribs is treated as activity space, a *minimally* compliant room could result in a very small area for play as depicted in the sequence of **Images #2, #3, #4 and #5**.







- A number of design elements/materials can mitigate these problems:
 - > Incorporate acoustic materials and white noise systems to diffuse the noise level within the classroom.
 - > Use a room shape with a shallow alcove that has a lower ceiling level and a separate, dimmable lighting system. The alcove should be configured to accommodate the cribs in a single row with the required spacing between cribs. (See EEC Policy Statement on Safe Sleep for Infants.) The policy and EEC licensing require a minimum 2-foot separation between cribs.

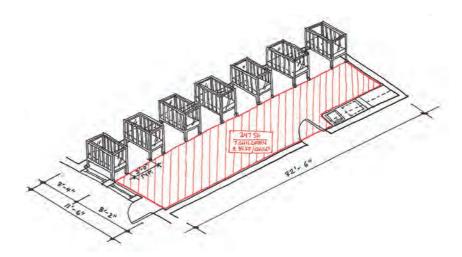
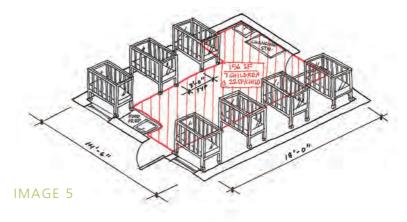
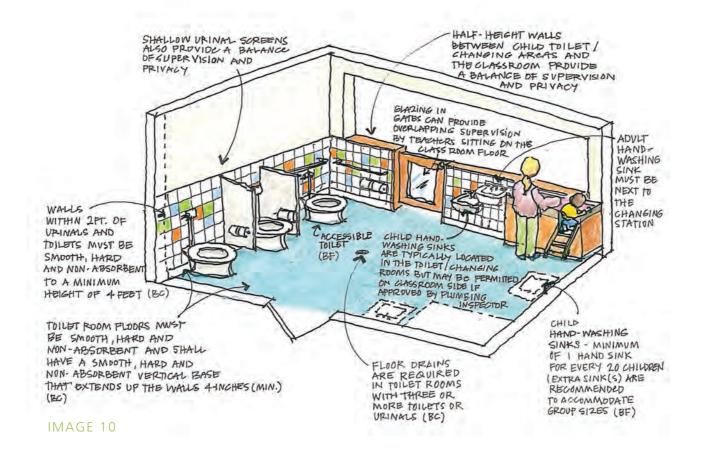


IMAGE 3



> Discuss options for using furnishings to minimize disturbance of sleeping infants by other infants who are awake and mobile. If furnishings are used to reduce infants' access, be sure to maintain clear egress for evacuation cribs.

Given the evolving recommendations for crib areas, be sure that the center owner reviews the proposed crib-area configuration with the local licenser early in the design process. (PL) (EEC) (QRIS)



E. Child Toilet/Changing Room Configuration, Supervision and Privacy

The image above illustrates a changing area shared by two classrooms with half-height walls that open into both rooms.

Shared toilet and/or changing areas between two classrooms can be a cost — and space-effective option for many centers, depending on the size and number of same-age classrooms. Distributed plumbing can be a significant construction cost, so consolidating the required child plumbing fixture quantities in one area, shared between two classrooms, can save both money and space.

Note however, that if the changing table is located in a separate enclosed toilet room, there must also be a changing area in the classroom.

The child toilet/changing areas for infants, toddlers and preschoolers must be carefully designed to address the many operational and code requirements for these spaces (refer to **Image #10**):

- > Accommodate overlapping supervision by teachers between the classroom and toilet/changing areas through the use of half walls and low gates with glazing. (EEC) (PL)
- > Incorporate the necessary plumbing fixtures for the children per the state plumbing code requirements as well as hand washing sinks for the teachers. (PC) (E)*
- > Provide at least one accessible water closet (toilet) and one accessible sink in each child toilet area per the state/federal accessibility codes. (BF)

- > Provide a degree of privacy based on the age of the children. (EEC) (PC)
- > Provide the necessary storage needs for diaper-changing/toileting. (See below for needs for each age group.)
- > Ensure proper ventilation is provided within the toilet areas and at changing locations when located outside of the toilet areas.
- * Although the plumbing code's calculation for fixture count is based on overall occupancy of the center, in conditions where toilet areas are accessed directly from the classroom spaces, it is best to determine the number of fixtures based on the occupancy of the classrooms with direct use. This may result in exceeding the plumbing code's minimum fixture count requirements. Note also that classroom sinks are required to achieve a Level 4 QRIS rating in preschool classrooms. (QRIS)

For infants, the changing areas do not need to be separate from the classroom space but they should be configured so that teachers can easily provide overlapping supervision of the activity area from the changing area in classrooms that have two teachers.

The changing area should incorporate teacher sinks and storage at close proximity to the changing table so that teachers have easy access while maintaining the safety of the child on the changing counter/table. The changing area should include:

- > nonporous changing surface/trough with a 6-inch raised edge to prevent falls
- > nonskid, nonporous, soft, washable 2- or 3-inch thick pad to fit within the changing trough
- > counter paper roll to dispense disposable paper to cover changing pad
- > diaper disposal unit (enclosed)
- > teacher glove dispenser
- > bleach-solution spray bottle (located out of reach of children)
- > diapering supplies for each child

For toddlers, toilet-training plays a significant role during their time at the center and can be a very social time. The toilet rooms for this age group need separate teacher and child handwashing sinks, child toilets, as well as the changing stations and their accompanying storage and diapering products. Provide steps as part of the changing table for toddlers, so that children can be helped to climb up to the changing surface. The number of required plumbing fixtures is based on the number of children, as identified in the state plumbing code. (PC) Most providers prefer direct access to two toilets, since "waiting for one's turn" can be challenging at this age. The teachers often provide toileting assistance with toddlers, so it is important to size the toddler toilet rooms to accommodate the children, teachers, plumbing fixtures, changing stations and necessary storage.

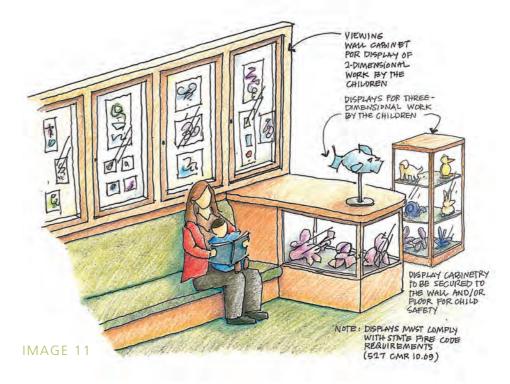
Note that two adult sinks will be required in infant and toddler classrooms with diaper changing areas in the classroom — one exclusively for diapering and another for food preparation. (EEC)

At this age, privacy is typically not an issue for children. Having toilet partitions/ doors make it more difficult for teachers to assist young children. However, it is important to note that current Massachusetts State plumbing code regulations include privacy requirements with no explicit exclusion for child care centers. (PC) The building/plumbing inspectors may not require enclosures for the toddler and preschool ages or may accept the use of a urinal screen (a shallow wall-mounted screen with no doors) between the toilets to provide a degree of privacy, while allowing access for teachers to provide assistance to children. It will be important to review this issue with the building and plumbing officials early in the design phase to confirm compliance with their position on toilet enclosures for the children's toilet rooms, since the enclosures will likely increase the overall size of the toilet rooms. (PC) The toilet rooms for this age group typically are not gender-separated (again, not explicitly permitted by code.) For preschoolers, the toilet room requirements are similar to the toddler toilet rooms. Toilet partitions can be an obstacle to providing adequate supervision. To achieve a balance between supervision and privacy, urinal partitions may be installed between the child toilets, but programs should verify its acceptance with local authorities. (PC) The urinal partitions do not have doors but allow the child a degree of privacy from adjacent toilet users. This enables the teacher to assist the child (if needed) and keep an eye on the child. The urinal screens are often approximately 24-30 inches deep and vary in height depending on degree of privacy. The screens are typically mounted four inches above the floor for cleaning and to allow for viewing feet at occupied toilets. The size is typically coordinated with the half-walls separating the classroom and toilet room, allowing for supervision by the teachers in each space. The toilet rooms for this age group do not need to be gender-separated. But, gender separation and privacy preferences vary significantly, so the design team should discuss this issue with the program owner early in the process.

For OST Programs, the state plumbing code (PC) has specific toilet requirements for kindergarten and elementary school-aged children. For these age groups, the toilet rooms are gender-separated.

F. Display of Children's Work

Every center will require provisions for display of children's work. The intentional and thoughtful display of children's work should be incorporated throughout the center (i.e. hallways, alcoves and reception area, as well as in the classrooms), and should have varied mounting heights so that both adults and children can view the work. (QRIS) The display areas should, where possible, accommodate both two-dimensional and three-dimensional work; be designed to protect the work; and be easy to update frequently (see **Image #11**). It is important to note that the state fire code (FC) has requirements for displays in schools that apply to early education environments which limit the amount of paper material displays in classrooms, corridors and assembly areas. The fire code defines wall coverage percentages for paper display for each type of space and whether the building has an automatic sprinkler system.



The following are a few suggestions for display options (see Image #12):

- > Fixed frames with top-edge slots for artwork and safety glass viewing panels.
- > Large cork wall panels with a wood-framed safety glass cover that is side hinged and lockable.
- > Magnet boards or paint with large (child-safe) magnets (best for older children).
- > Ceramic tile or fiber-reinforced panels with tape.
- > Wall-secured shelves.
- > Three- or four-sided safety glass displays for 3-dimensional artwork. (Note: the use of polycarbonate panels may be used instead of safety glass, but its use must be reviewed with the local fire and building codes/inspector.) (FC) (BC)
- > Digital media such as an electronic display screen. Evolving technologies and attitudes regarding digital media suggest that how this media is incorporated should be considered carefully in each project. (O)

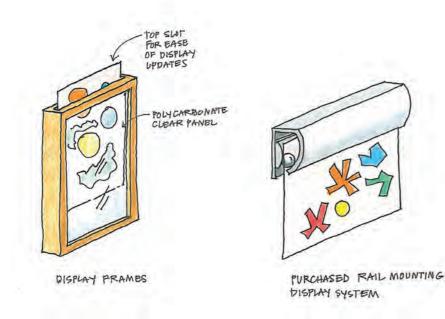
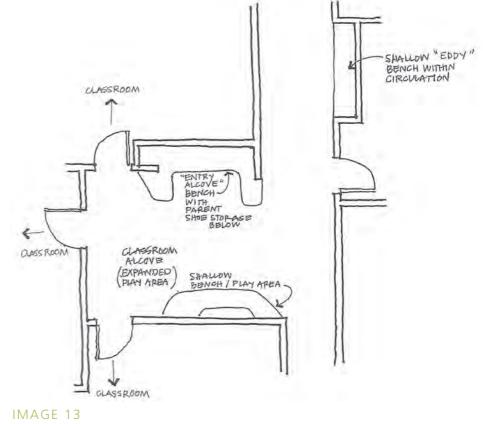


IMAGE 12

For the OST program, the display options may be more varied. The creations and displays can take many forms such as whiteboards and digital media, and can be integrated in a space where the children can create and invent in a wide range of materials.

G. Transition Spaces

Transition spaces in early education centers are ideal environments for a range of activities outside of the classroom. Transition spaces such as "eddies" and alcoves can be incorporated within the building circulation to allow for added informal program spaces without significant cost, and can animate the circulation spine of the building (see **Image #13**). Built-in elements within the building egress corridors may have limitations due to fire safety concerns. It is important to identify the building code (BC) and fire code (FC) requirements for your specific center design to determine if the built-in elements can be included.



- 1. Shallow eddies (Image #14) along the main circulation are ideal spaces for small gatherings. Eddies are areas where the hallway widens for a small area (approximately 3' x 8' feet) containing a small bench or other seating area to allow parents and children to work through a difficult transition or for impromptu discussions. Eddies are also valuable to have during the school day. Teachers can use an eddy with a small group of children to read a story, develop a theatrical play or create a unique fort. Having elements such as a magnetic wall in these areas can support a variety of play opportunities.



IMAGE 14

AND EXTENSION OF THE CLASSROOM

2. Entry alcoves (Image #15) at classroom entries are especially helpful for the transition to the shoe-free environment of infant classrooms. The alcove should include a seating area with shoe-storage cubbies below to allow adults to take off/put-on their shoes. This extra space is also ideal for infants - both crawlers and new walkers — during the daytime, when there isn't as much traffic in this area.

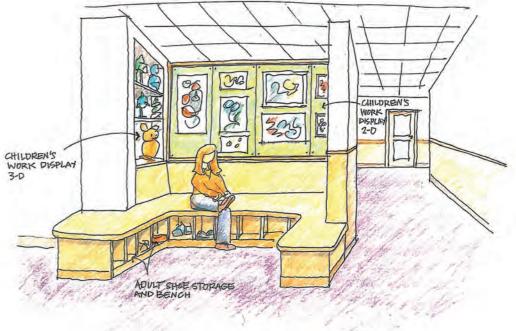
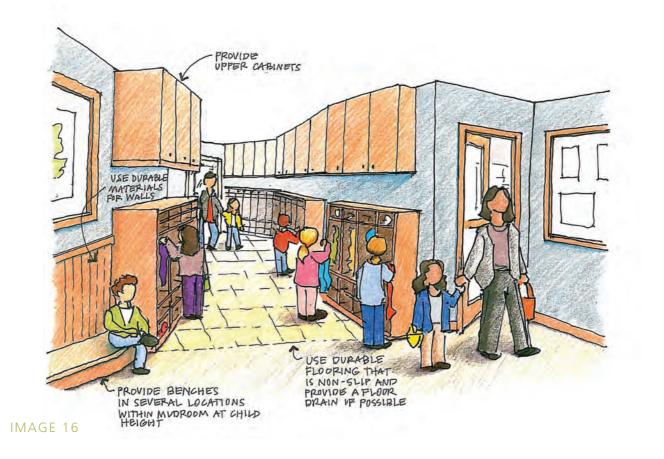


IMAGE 15

3. Mudrooms (Image #16) are valuable to include in the design of the building for the toddler, preschool and OST rooms, to allow for an easier transition between the indoors and outdoors. Typically, mudrooms are located with exterior doors leading to the playgrounds, rather than at the main entrance.

The design of a mudroom requires durable materials and a floor drain (with access to the trap for maintenance) so that snow, water, sand, etc. that is tracked into the building can be easily cleaned. Hooks or other storage for outer garments can be located in this area to allow for more flexibility of the classroom layout. Mudrooms take up a fair amount of square footage in the building, yet can be made more efficient if shared between two classrooms. For the OST classroom, a mudroom should include storage lockers to accommodate children's backpacks and outer garments. Cubbies or other storage solutions are still needed in or near the classroom so that children can store/ access their personal items, lunch boxes or other materials. For all cubbies, choose a design ensuring that children's clothing and other items are selfcontained and do not touch those belonging to other children.



H. Connections to the Exterior

It is ideal to have a fluid transition between the classroom and the age-appropriate playgrounds in early education environments.

Areas such as covered porches that transition between the classroom and the playground are ideal for expanding activity space for art activities, water tables, science experiments, etc. that should be located close to the building. These porch areas can either be very simple, with a frame to support shade fabrics, or they can be more substantial, with a translucent porch roof, water spigots, storage and infrastructure for science exploration and artwork (**Image #17**). For OST programs, porches can be great places to read or socialize.

Ideally, each classroom has a door to the outdoor playground for ease of circulation between both spaces.

In all classrooms there should be a large expanse of windows with sill heights that are low enough for children to easily see outside. It is also good to have windows in all support spaces, if possible, as well as the circulation route. For centers where there are internal rooms without direct access to the exterior, it is helpful to have interior windows that can connect to the spaces that have exterior glazing for "borrowed" daylight and views. (S)



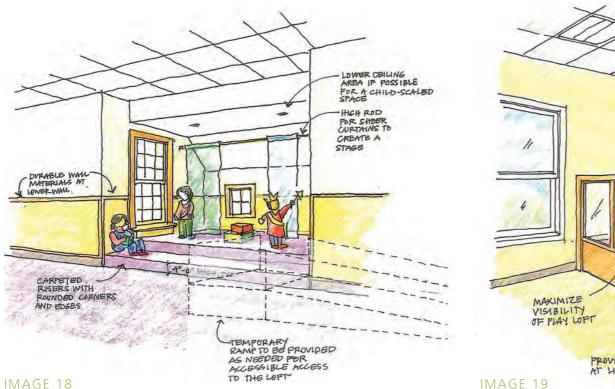
IMAGE 17

Operable windows are always desired and will need screens and shades. Doublehung windows typically work better than casement windows at the first floor level because you do not have to address the safety issues related to window swing. For centers with an upper floor, there are requirements for window guards and limiting the size of window openings. (EEC) The type of window shades is an important consideration for both occupant comfort and child safety. High-quality roller shades are strongly preferred over less-expensive mini-blinds, which are easily damaged.

Skylights can offer a unique perspective for children and provide ample daylight, and they are best located in common areas such as the multi-purpose room and

the main circulation space. When integrating skylights into the classroom space, they should be designed carefully to allow for the control of direct sunlight.

When possible, provide direct access to a toilet room from the playground area to accommodate toileting/diaper changing during playground activities. This can be accomplished by adding a dedicated playground toilet room or locating one of the child toilet rooms at the exterior wall adjacent to the playground with an exterior door. Using the classroom toilet area may be efficient, but additional space will need to be considered to accommodate the exterior door. Providing this direct access helps to maintain the necessary teacher supervision during outdoor play time.



With Nitzer
Bis Nitzer
Bis

I. Lofts and Platforms

Lofts and platforms within the classroom can be a resource for young children and can facilitate creative imaginary play. In order to allow the children to develop their own play environment, it is best if the loft/platforms are not prescriptive (i.e. pirate ship, tree house, etc.) and that there are accessories/elements such as sheer fabrics, magnet boards, and loose parts to encourage creative interpretation. The lofts need to be scaled to the age of the group and should be easy for teachers to supervise.

Images #18 and #19 show lofts with adjacent windows that would require safety glazing and, if windows were operable, would also require limiters to restrict the window opening to 3½ inches.

Design of loft stairs, including riser height and tread depth, should be discussed with a licenser. In some cases, licensers will require a "fall zone" with the appropriate fall zone material on the floor level for purchased or custom-built lofts/platforms. Similarly, in some cases accessibility to a raised surface may be required by local interpretations of access regulations. **Image #18** also illustrates a possible ramped access to a raised platform that could be added later as code-compliant furnishing, as needed.

The design and installation lofts or platforms should be reviewed with the licenser and building officials well in advance to address any regulatory issues. (EEC) (PL) (BC) (BF)

J. Support Spaces

While classrooms are the core of early education centers, there are a number of important support spaces necessary for the operation of the center:

Reception: The reception area is a place of high activity, especially during the drop-off and pick-up time periods. It typically has a reception desk with a staff member who supervises and greets the families. This area also includes a sign-in/sign-out area to account for the status of all children. The sign-in/sign-out system can be as simple as a sheet on a clipboard or can be high-tech like an electronic screen. It is recommended to have a Director's Office with an interior window adjacent to the reception area, to provide an added level of oversight of the entry.

Meeting Space: Meeting space is needed for meetings with a parent or staff member as well as a larger space that can be used for events such as children's performances, board meetings, etc. A large multi-purpose room that is used for gross motor during the school day can work well for gatherings like these, but it is important to provide ample storage to allow for the various uses.

Teacher Spaces: There are two important spaces for teachers: a staff area for curriculum preparation and storage of resource materials as well as staff lounge/ staff kitchen for lunch and breaks. It is preferable to have separate spaces for these two functions. The curriculum preparation space should include the copier, laminator, computers for teacher curriculum research and materials development, storage cabinetry and counters/tables. The staff lounge should have a kitchenette with a refrigerator, microwave, and tables and chairs for eating, as well as comfortable seating for relaxation.

Dedicated Space for Occupational/Physical Therapy: Many centers have a significant number of children who see outside specialists several times a week: physical or occupational therapists, speech and language pathologists, social workers and others. It may be helpful to have a dedicated space that has the infrastructure to accommodate the necessary equipment, along with acoustic measures and some degree of privacy to support the therapy. However, EEC policies require that *two* adults must be present if therapy sessions take place in a dedicated space,

so check carefully on whether such a space is feasible. Few centers will have the staffing resources to allocate two adults for these sessions. (PL)

There are a number of utility spaces that are essential to the operation of the center:

Building Systems Rooms: There are several building systems rooms — mechanical, electric, IT, fire protection (if applicable) — that need to be incorporated in the center. The equipment in these spaces has specific clearances for access and servicing, so the layout/size of this room should be coordinated by the building systems engineers. (E) (BC)

Laundry Room: The laundry room is a well-used space in early education centers. It is best located near the infant classrooms since the teachers in these rooms use the washers/dryers most frequently. Depending on the size of the center, it may be recommended to have two sets of washers and dryers to keep up with the demand. In addition to the appliances, the laundry room should also have a sink, counter, and storage cabinetry for the laundry products. (E) (PC)

Janitor Closet: The janitor closet should have the following elements: mop sink, deep utility sink and shelving for cleaning products. For small centers, the janitor closet and laundry room can be combined to save space. (E) (PC)

Adult Toilet Rooms: The number of toilet rooms for adults is determined by the plumbing code, and typically requires gender-specific rooms. It is recommended to have single-occupant, adult toilet rooms located throughout the center for the sake of convenience. The adult toilet rooms must comply with state and federal accessibility requirements. (E) (PC) (BF)

Storage Rooms: Storage is always in high demand in early education environments to allow for a variety of activities and play items throughout the year. Ideally, each classroom should have a dedicated storage closet with built-in shelving, and the center should also have well-organized common storage room(s) for varied (including seasonal) educational materials.

K. Classroom Sinks

Sinks are now required in classrooms to reach a QRIS Level 4. The classroom sinks have a positive impact on infection control, children's hygiene, and independence. They also enable teachers to spend more time within the classroom to support the children. The following are typical recommendations for the sink heights for the various age groups:

Infants	Toddlers	Preschoolers	School Age
not applicable	18 inches	22 inches	29-34 inches

It is important to note that the plumbing code requires lead-free faucets and water temperatures that range from cold water for drinking to limited hot water temperatures in children's sinks. (PC) (EEC)

L. Selection of Finishes

Child care centers need to incorporate durable and safe materials to withstand the extent of activity within the child-specific spaces. The finishes should be selected for durability, beauty and benign impact on the interior air quality. The key regions of focus for durable materials are the surfaces that the children access – floors, walls (up to 4 feet from the floor), base cabinetry, as well as doors and windows.

Flooring: Flooring material options are closely tied to the specific spaces of the building. For classrooms, it is best to have a durable, easy-to-clean surface such as floor tile, with area rugs available for specific activity areas. The resilient tile can come in a variety of materials:

- > Vinyl Composition Tile (VCT) is the most common and cost-effective floor material albeit a hard surface, especially for children who spend a significant amount of time on the floor.
- > Linoleum Flooring is a cork/linseed oil-based material that has more resilience than VCT and is eco-friendly. It can, however, be subject to fading with the darker color options.

- > Carpet is a great surface for the occupants on the floor, but it is hard to maintain, given the variety of activities in the classrooms. Having area rugs over a more durable floor surface or carpet tiles that can be easily replaced are good options to provide a degree of comfort at the floor level.
- > Cork Flooring is more resilient than VCT and linoleum. It is also ecofriendly but more expensive than the other flooring surfaces suggested. Because of its resilience, it can get dented by heavy furniture if pads are not used to disperse the weight. Like linoleum, cork can be subject to fading with direct sunlight.
- > Wood is very durable, but like cork, is significantly more expensive.

Wall Surfacing – Classroom: For the lower 4 ft. of wall surface where the most activity is focused, it is worthwhile to provide a "wainscot" of durable material. Material options for this location include linoleum wall panels, wood paneling, magnetic wall boards, etc. Some of these materials also have acoustic dampening properties that help to dissipate sound.

Wall and Floor Surfacing at Toilet Rooms: The building code has surfacing requirements for both the walls and floor of the toilet rooms. The walls near the toilets and urinals (within 2 ft.) must be smooth, hard and non-absorbent and must extend at least 4 ft. high. The floor finish must also be smooth, hard and non-absorbent and must have a base at the wall of 4-inches high (min.).

Ceilings: Many ceiling materials can help manage the acoustics in the spaces. The most common ceiling material is acoustical ceiling tiles (ACT) but there are other options that you may want to incorporate as an accent such as wood panels, curved accent acoustic ceiling panels, metal panels, etc.

Door Safety: The hinge side of the door is a safety issue with young children. Hinge guards can be installed for both sides of the door to avoid the potential for fingers to be caught in the hinge area. It is important to note that building codes have regulations regarding the types of finishes that can be used in ECE and OST centers. Before implementing any new finishes, you should review the material selections with relevant codes and/or the building official. (BC) (FC)

M. Accessibility

Centers must comply with all applicable federal, state and local accessibility requirements. The regulations address accessibility accommodations for both children and adults, but the requirements differ between new buildings and renovations. New construction must fully comply with the regulations. For renovation projects, the extent of compliance with the regulations is based on the scope and cost of the renovations.

There are significant variations in the requirements between the state accessibility regulations, issued by the Massachusetts Architectural Access Board (MAAB) and the federal guidelines (Americans with Disabilities Act (ADA)). It is recommended that each regulation be reviewed and that programs comply with the more stringent applicable requirement in most cases.

One example of this variation is in sink heights. The ADA guidelines provide an alternative compliance approach for sinks serving children ages five and younger, eliminating the standard mounting height requirement for front approach. The MAAB does not currently provide this exception for children to standard sink-mounting heights. Nonetheless, the MAAB will typically grant a variance to allow for lower sink heights utilizing the side-approach clearance requirements from the ADA, but an application must be completed and submitted to obtain this variance.

N. Sustainability

It is worthwhile to explore sustainable building practices for your construction project because they provide opportunities to create a learning environment that: efficiently uses resources such as energy and water; incorporates natural building materials that have low or no off-gassing for indoor air quality; and utilizes windows for natural daylight and views in occupied spaces.

The center's location also plays a role in its sustainability. Centers that are located in regions where there is access to mass transit and/or bicycle routes and bike storage areas reduce both the need for large parking lots and the amount of car-related emissions. The outdoor spaces can be designed with a focus on green space, native plantings, and nature-based play opportunities such as grassy hills with embankment slides, children's gardens, tree copses, tree-branch tepees, etc.

These elements can serve as a teaching tool for the children and their families.

O. Acoustic Environment

One of the important developmental tasks for children is language acquisition. It is a process that begins at birth even though a child's first words come a year later. After that they begin to build sentences, vocabulary and pre-reading skills, so having a good acoustical environment is essential.

The design team needs to be conscious of conditions, like hard surfaces, that allow sound waves to reverberate, and mechanical and electrical equipment that creates ambient noise (as well as sound transmission) through exterior walls and windows and adjacent classrooms.

It is common for a center to have a portable music player for background music and singing. Background music can enable teachers to create a different tone in the classroom and signal changes in activities. To eliminate clutter and provide good quality sound, program owners and architects should consider installing built-in speakers and the connections that enable teachers to better use music throughout the day.

PART 3

QRIS IMPACT ON EEOST CAPITAL FUND PROJECTS

An important requirement of the EEOST Capital Fund Program is that the capital project will enable an ECE or OST facility to improve the quality of its physical environment to reach a Level 3 or Level 4 status in QRIS Subcategory 2. Safe, Healthy Indoor and Outdoor Environments. The QRIS standards provide few details in the description of Subcategory 2, instead relying on measurements using the Space & Furnishings Subscale Requirements in three environmental rating scales:

- > The Infant/Toddler Environmental Rating Scale (ITERS-R) for classrooms serving infants and toddlers;
- > The Early Childhood Environmental Rating Scale (ECERS-R) for preschool classrooms; and
- > The School-Aged Care Environmental Rating Scale (SACERS) for out-ofschool time classrooms.

This section provides a framework for the review of specific physical environment elements that are addressed in the environmental rating scales with little detail. The categories below provide a framework for ensuring that a project will meet the requirements. The criteria include a range of quality levels (minimum, better and preferred) to allow both the program staff and evaluators to have a consistent understanding of the quality factors that make high quality and functional spaces.

A. Lighting – Artificial

It is important to have adequate lighting throughout the various spaces in ECE and OST centers, but it is *most* important within the classrooms. (BC) (E) (S) (L)

At a **minimum**, classrooms should have sufficient artificial lighting to provide adequate light levels at the children's tables and at the floor level to support the children's various activities. Independent of daylight, in compliance with the Massachusetts Energy Code, 30 to 50 foot candles of light at the work surfaces is recommended for classrooms. (L) A **better** lighting arrangement for classrooms is lighting that allows for variations in light levels depending on the activities within the room. Providing a range of lighting levels can be achieved in a number of ways:

- > Include separate switching of the lamps within lighting fixtures that have multiple light sources (lamps or LEDs) to allow for two light levels (50% or 100%);
- > Configure the light fixture switching so that teachers can turn on half of the fixtures (evenly distributed) or all of the fixtures to allow for two light levels (50% or 100%);
- > Use lighting controlled by dimmers to allow a wide range of light levels; and
- > Provide task lighting at the changing tables that is independent of other switching.

The **preferred** lighting arrangement includes the flexible lighting levels noted in the better lighting arrangement along with a variety of lighting types to provide a wide spectrum of lighting to support the various classroom activities. Under-cabinet lighting at teacher workstations, sconce lighting on walls to provide indirect ambient lighting (especially valuable in crib areas), and classroom lighting that is both direct (downlighting) and indirect (uplighting) provide a range of lighting levels and types that can best support the variety of activities within the classroom.

B. Daylight

Incorporating natural light in interior environments is beneficial for a number of reasons. Daylight has the full spectrum of light and a richness that is difficult to replicate with artificial lighting. Daylight can be provided via windows, skylights, and light tubes, but it is important to have the ability to control the daylight levels in individual rooms through the use of shades. (S) (E) (L)

At a **minimum**, each classroom should have access to daylight either through exterior windows and/or skylights. A better arrangement is to have multiple exterior windows on at least one exterior wall that provide both daylight and views. The window area should be sufficient to provide natural light and views for at least 50% of the classroom area.

The **preferred** configuration of windows and/or skylights is to have multiple exterior windows on at least one exterior wall that provide both daylight and views. The window area should be sufficient to provide natural light and views for at least 75% of the classroom area, and all exterior windows/skylights should also have shades to control the amount of daylight. Mini-blinds are not recommended, as they do not hold up well in this environment.

C. Ventilation

At 35 to 50 square feet per child in classrooms occupied during much of the day, CO_2 levels can rise during the day leaving children irritable, tired or worse. Moreover, many young children, especially from low-income neighborhoods, are more prone to asthma. Ventilation, therefore, is particularly important in ECE and OST settings.

There are several building components that assist with the ventilation for the center: the building mechanical system, operable windows and doors, and exhaust fans (located within toilet rooms, and over diaper-changing areas, kitchens, etc.). It is generally preferred to have these components coordinated to allow adults to open doors and windows for natural ventilation when possible, but to provide adequate fresh air when outdoor conditions require closed doors and windows. The mechanical system needs to compensate for frequent opening of exterior doors as groups move between the interior and exterior. (S) (E) (BC)

At a **minimum**, the building shall have natural ventilation or mechanical ventilation (BC) in accordance with the Massachusetts State Building Code. For natural ventilation of an occupied space, windows, doors, louvers or other openings that connect to the outdoors can provide the ventilation. The minimum area to the outdoors must be 4 percent (BC) of the floor area being ventilated. Bringing unconditioned exterior air into the building as the only source of ventilation is not advised; the exterior air is too cold in the winter and too humid in summer. A **better** arrangement is to have both natural and mechanical ventilation options within the building for flexibility.

The **preferred** ventilation configuration uses both natural and mechanical ventilation with a control system that assists with integration and coordination of both and maximizes the efficiency of the system.

D. Temperature Control

The heat loads (or amount of heat building up) within a center vary significantly based on the activities in each room and the solar orientation and amount of windows in the space. Because each classroom has its own schedule (one may be listening to a story while an adjacent classroom may be dancing to music), different activities lead to varying temperature needs. (E) (S) (BC)

At a **minimum**, the occupied spaces within the center should have a heating system with controls to provide a minimum temperature of 68 degrees (per state building code.)

A **better** arrangement is to have a heating and cooling system with temperature controls that is separated into zones based on the solar orientation of the rooms within the building. Throughout the day, there can be a significant variation in the amount of sunlight and heat between the north, south, east and west elevations. A control system with separate zones for these various orientations will allow for more comfortable spaces and is more energy-efficient.

The **preferred** system is to have a heating and cooling system with individual room zones and controls so that the teachers/staff can adjust the temperature (within a set range) to respond to both the solar orientation and the activity level within the room. This arrangement is well-suited to early education because the activity levels vary significantly from room to room during the course of the day. As this level of control exceeds most building requirements, particular attention by the team is required for proper implementation. (O)

E. Indoor Gross Motor

While licensing regulations do not require an indoor, gross motor area for centers, it is very valuable since it allows for active play when inclement weather precludes playing outdoors. These spaces, which often have multiple uses (i.e. meetings, child performances), need adequate storage areas to allow for varied uses. If the gross motor area has play equipment such as lofts or other elevated play elements, the floor surfacing must comply with CPSC – Public Playground Safety Handbook requirements. (CP) (EEC)

At a **minimum**, the space must be sized to accommodate a group of children (ideally for the largest classroom group) at least 35 sf/child and designed to support a variety of gross motor activities.

A **better** arrangement is to have a larger space with an allocation of 50 sf/child for the largest classroom group.

The **preferred** configuration is to have the larger space, a large storage room, and a wider range of play equipment that can be rotated throughout the year for play variety. For centers with OST, a gymnasium with an elementary-sized basketball court is recommended, if space allows.

F. Stationary Gross Motor Equipment

Because the gross motor space serves a variety of age groups, it is important that permanent play elements, if included, are designed for the full age range of children who will use the space. (CP) (EEC) (BC) (BF)

At a **minimum**, equipment is not permanently installed so that age-specific toys and equipment can be placed in the room for each age group. This configuration requires a large storage room. A **better** arrangement is to have multiple storage closets within the space to facilitate storage of equipment for each age group in different closets.

The **preferred** arrangement is to have play elements/infrastructure integrated into the Gross Motor Room that offer open-ended play opportunities. Elements such as a small stage with carpeted risers/ramps, frameworks for creating forts with sheer fabrics, and magnetic walls can support a wide range of play for all age groups and children of all abilities. It is also recommended that the space accommodate wheeled toys, ball play (e.g. a variable-height basketball hoop) and other active equipment.

G. Playground Access

For young children, learning and play are intertwined and are not restricted to a particular environment. The playground serves as a rich venue for children to learn about the outdoor environment. It is ideal if there is a fluid connection between the classroom and their age-appropriate outdoor play area(s). Licensing regulations require that 75 sf/child of age-appropriate exterior play area be provided for the largest group size that would occupy that play area at any one time. (EEC) (PL) (BF)

At a **minimum**, there should be a safe route from each classroom to the outdoor play space. Public or shared playgrounds are often acceptable to the Massachusetts Department of Early Education and Care, provided that they can be reached safely. The program will need to confirm EEC's acceptance of the public/ shared playground use and route to the playground.

A **better** arrangement is to have dedicated playground space with exterior doors at each classroom that open directly onto the classroom's age-appropriate outdoor space, which has both nature and natural elements, as well as welldesigned and safely-installed play equipment. The play space should include separations (i.e. fencing, landscaping, and building) between play areas for the

different age groups. Secure outdoor storage for toys and equipment used on the playground should be provided.

The **preferred** arrangement is to have a transitional space between the indoor space and the playground — such as a patio or covered porch — that facilitates both explorations and experiments that are messy or need elements from the natural world and that could also benefit from proximity to the classroom and its resources. Provide access to running water, including outdoor sinks and bibs to support other types of water-play. Plan for point-of-use outdoor storage for tricycles, play equipment and "loose parts".

H. Playground Shade

The Massachusetts EEC Playground Safety Policy Statement and the CPSC Public Safety Handbook have the same open-ended requirements for playground shade: "The outdoor play area must provide for both direct sunlight and shade." Shade can be provided in a number of ways: permanent roof structures, retractable awnings, exterior-grade fabric shades, and trees. The shading type should provide shade for the peak 4-hour mid-day sun in the summer. (EEC)

While shade distribution and quantity will depend on the individual design, at a minimum enough shade should be provided to allow 25 square feet of shaded play area per child for the maximum number of children that could occupy any given play area at one time. Thirty-five square feet would be better. Shade is obviously crucial in the summer months, so careful attention to sun angles, removable shade canopies and deciduous trees (that lose their leaves) will be important to maximize summer shade, while allowing light and sunshine in the playground in other seasons. For the purposes of establishing a uniform evaluation standard, the following shade areas are suggested for outdoor play areas for the various ages:

		Group Size	Area/child	Area/group	Area o better	f shade <i>minimum</i>
Infants		7	75 sf	525 sf	245 sf	175 sf
Toddler		9	75 sf	675 sf	315 sf	225 sf
Preschoo		20	75 sf	1,500 sf	700 sf	500 sf
OST		26	75 sf	1,950 sf	910 sf	650 sf

For water play, sand play, quiet time and snack breaks, some shade should be provided where these activities occur.

SUMMARY

The Design Guidelines should be reviewed early in design development to ensure that the proposed project will meet the requirements of the EEOST Capital Fund Program. Since every program site is unique and may present a range of challenges, the program sponsor should review the proposed project with the Children's Investment Fund, the organization that administers the EEOST program for the Department of Early Education and Care.

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