



# QUALITY ENVIRONMENTS FOR CHILDREN

A Design and Development Guide for Child Care and Early Education Facilities

LOW INCOME INVESTMENT FUND



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## INTRODUCTION

Quality child care is a high-impact public investment that benefits children, working parents and regional economies. Longitudinal studies, such as one conducted by the Federal Reserve Bank of Minnesota, estimate a lifetime return of seven dollars on every dollar invested in quality early education programs.\* In recognition of these benefits, political and community attention to early education is growing across the country.

Despite increased investment and coordination of services, a lack of suitable physical infrastructure often poses a barrier to expansion of child care and early education programs, particularly in communities most in need of these services. At the same time, the facilities challenge is complex and requires expertise that typically lies outside the realm of both early childhood educators and community development professionals. The Low Income Investment Fund (LIIF) addresses these gaps by providing affordable capital, technical assistance, training and policy advocacy to help build a comprehensive system for child care facilities financing and development at local, state and national levels.

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\* Arthur J. Rolnick, A. and Rob Grunewald, Early Childhood Development: Economic Development with a High Public Return (FedGazette, March 2003; [www.minneapolisfed.org/publications\\_papers/pub\\_display.cfm?id=3832](http://www.minneapolisfed.org/publications_papers/pub_display.cfm?id=3832))

LIIF's child care and early education work is integral to its organizational mission of building healthy communities and creating economic opportunity for low income families. LIIF recognizes that carefully designed sustainable environments are prerequisites for delivery of quality child care and early education services. The majority of young children (ages 0 to 5 years) spend at least part of the day in a child care setting outside of the home; many child care centers operate for 10 hours a day or longer. Because this time is such an important part of the child's overall physical, cognitive and social development, it is essential that these physical environments nurture and support activities for healthy growth and learning. This is particularly crucial for low income children, who often live in substandard or overcrowded housing. Well-designed facilities also contribute to the stability of the early childhood workforce, which is key to quality programming and operating efficiency.

Meeting children's developmental needs requires thoughtful facility design that goes beyond baseline regulatory requirements and standard development practices. As a financial intermediary working to increase public and private investment in the sector, LIIF is committed to creating a high-quality and sustainable facilities infrastructure. The design and development suggestions offered in this guide are intended to help early childhood and community development professionals work

## DISCLAIMER

The information contained in this guide is provided as a service. We have endeavored to provide quality information, but we make no claims, promises or guarantees about the accuracy, completeness or adequacy of the information contained in this guide or in any website or other resource referenced in this guide. Be aware that this information may become out of date. LIIF cannot make a commitment, and disclaims any duty, to update any of the information provided in this guide. The information provided in this guide is provided “as is” and without warranties of any kind, either expressed or implied.

As legal or other professional advice must be tailored to the specific circumstances of each development, and as laws, codes, industry standards and industry best practices are constantly changing, nothing provided herein should be used as a substitute for the advice of competent counsel or of design, construction or other applicable professionals.

together to build successful, healthy and enduring environments for young children.

## PURPOSE OF THE DESIGN GUIDE

This guide is intended to serve as a reference tool for planning, designing and building early childhood spaces that are safe, healthy, nurturing, developmentally appropriate and aesthetically pleasing for the children and adults who use them. The physical environments in which young children spend their days learning, playing and socially interacting contribute significantly to their developmental growth. Brain development research shows that the first three years of life are a time of rapid cognitive and physical development. Understanding the developmental behaviors of young children and the programmatic and operational needs of early childhood professionals



are essential to designing, developing and financing sustainable facilities that will support quality child care programs.

Far too often, child care and early education programs are housed in substandard or “make-do” facilities, such as small, dark church basements that are provided free of charge or for a very low rent. The goal of this guide is to raise the bar and set a higher standard for the design of child care environments. To do this successfully, many partners need to work together in a cooperative process to research, evaluate and understand the guiding principles of a quality early childhood program and facility, including the impact of the physical environment on children’s growth and development. Working together, early childhood operators, architects and developers can create enriching, developmentally appropriate spaces for both children and early childhood professionals. Collaboration with all team members early in the planning process is essential to a successful project.

When planning a facility project, early childhood operators typically have some knowledge about what type of space they need to run a quality program but may have difficulty articulating their thoughts and wishes in a way that an architect is able to translate into a physical design. At the same time, the developer will be looking at financing for the project, and will be making decisions that ensure the project stays within its budget and



schedule. It is important that planning for child care and early education spaces begins as early in the process as possible, because good planning and quality design result in cost savings. The function of this guide is to help operators interpret common building design and development terminology and, similarly, assist development, architecture and construction professionals in understanding how their decisions and building practices can support and enhance the philosophy and operation of a child care and early education program.

The information in this guide will help operators understand the process by which their vision for a new or renovated facility is transformed from an idea into a physical space. Every child care facility project can be viewed as puzzle that can be solved by a unique combination of simple and complex pieces. Each partner needs to understand the priorities and constraints that apply to the various pieces of the puzzle; this understanding will facilitate the partners' working relationship and ensure that their respective skills and expertise come together to create a high-quality child care and early education facility. Clear communication and collaboration is the key to a successful project. This guide will assist operators, architects, developers and contractors with common communication barriers by:

- **Informing** users about common terminology and guiding principles of the different professions involved in the project;
- **Engaging** partners in understanding their respective roles on a facility project;
- **Assisting** the project team in setting priorities and making informed decisions throughout the process, from the early planning phase through construction and occupancy; and
- **Providing** written criteria and graphic examples of design elements that are specific to creating quality environments for young children

*What makes this guide different than other child care design guides?*

A handful of child care development guides have been produced by other groups to steer early childhood professionals through the facility development and design process. What's missing from those guides are tools and references for early childhood operators, developers, architects and contractors that explain how decisions regarding program size, age groups served, financing, project schedules, space design, systems and materials, and construction practices have an impact both on a child's development and a program's ability to operate successfully.

This guide addresses each phase of a facilities project (planning, design and construction), with an emphasis on four professional trades working







together to effectively share technical knowledge that will result in a quality project. Quality design can only be achieved by all members of the team working in an integrated process throughout the duration of the project. The primary objectives are to help:

- **Child care and early education operators** understand the development and architectural design process, and his/her roles and responsibilities during all phases of a project, including how the timing of his/her input and decisions has an impact upon the design and project budget;
- **Developers** understand the financing and operating limitations of early childhood facilities, and to see early childhood education as an amenity in terms of both enhanced project marketability and community relations;
- **Architects** understand that the design of the physical space, through specific design criteria, must be driven by principles of safety, pedagogy, sustainability and aesthetics in order to provide children and adult program staff with an environment that nurtures and supports healthy development and education of young children; and
- **Contractors** understand the materials and construction methods required to build safe and sustainable environments for young children

## ASSUMPTIONS

In this document, the term “child care and early education” refers to children ages 0 through 5 years old who participate in preschool and child care programs in a center-based facility. This guide assumes that – whether the project is developer-driven or operator-driven – a developer or development consultant is a primary partner in the project team. Though the content of this guide addresses new construction, it can also be applied to the renovation of an existing building. All projects, no matter how large or small, require smart planning, design and construction.

Funding streams for the operation of an early childhood program can be complex, and may change over time. Depending on the program’s location and the families served, early childhood operators utilize a variety of local, state and federal funding sources, as well as private pay tuition. For the purpose of this manual, we assume that while the mix of funding sources may be different for each child care and early education facility, the operating budget structure will be similar.

*Note: It is the responsibility of the architect to design the building to local building code requirements. For this reason, references to specific sections of building codes are not cited in this document.*



## SUSTAINABLE DESIGN

Sustainable design is an integrated planning and design process that promotes the use of environmentally sustainable materials to minimize negative environmental impacts and increase energy efficiency in the use of materials, energy and development of space. It emphasizes practices and materials that safeguard the health of children, staff and families within the facility and the surrounding community. This requires close cooperation by the design team, the architects, the engineers and the client at all project stages, from site selection, scheme formation, material selection and procurement through project implementation.

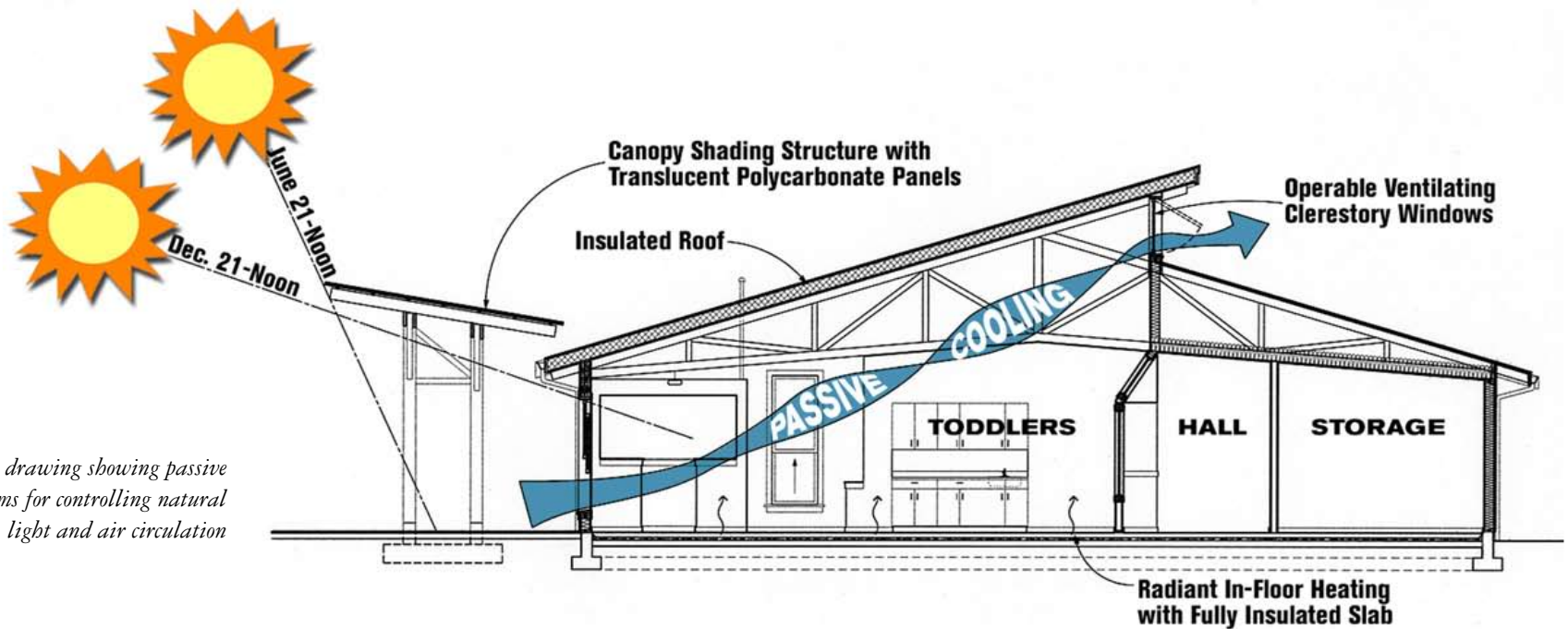
Common principles of sustainable design include:

- **Low-impact materials:** choose nontoxic, sustainably produced or recycled materials that require little energy to process
- **Energy efficiency:** use manufacturing processes and products that require less energy
- **Quality and durability:** longer-lasting and better-functioning products are replaced less frequently, which reduces the impact of producing replacements
- **Renewability:** materials should come from nearby (local or bioregional)

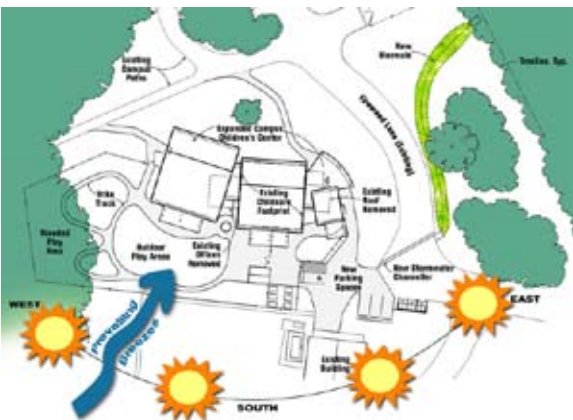
- **Healthy buildings:** sustainable building design aims to create buildings that are neither harmful to their occupants nor to the larger environment. An important emphasis is on indoor environmental quality, especially indoor air quality

Sustainability is an overarching theme in this document, and should be considered as an integral part of the entire design and development process, from preliminary research and planning through construction and occupancy.

The first three years of a child's life are a time of rapid cognitive, emotional and physical development. They actively use all of their senses – sight, hearing, smell, taste and touch – to explore and learn about their environments. This includes activities such as playing with blocks or toy cars on the floor, climbing and jumping, rolling around in dirt, and touching and tasting anything within their sight and reach. Many young children in child care environments develop upper respiratory health problems, and poor air quality and use of building materials and finishes that emit toxic fumes contribute to this problem. The planning and design of an early childhood space must integrate sustainable design strategies and practices as much as possible, which will result in green building benefits for both the early childhood center and the surrounding community.



Section drawing showing passive systems for controlling natural light and air circulation



Building orientation designed to maximize access to natural light and air

A few fundamental items to keep in mind during a facility project are:

- **Site location:** Pay attention to the surrounding context (adjacent building uses that could present hazards to an early childhood facility), previous uses of the site (soil quality/conditions – contamination requiring remediation), and traffic patterns (both pedestrian and vehicular).
- **Climate:** Look at macro and microclimate conditions in and around the site – wind direction, temperatures and topography. Look for opportunities to use passive heating and cooling systems when possible (operable windows, building envelopes that retain heat

in the winter and reduce heat gain in the summer).

- **Natural light:** Access and control as much natural light as possible.
- **Noise exposure:** Use appropriate materials and acoustical buffers to reduce exposure to high levels of internal and external ambient noise.
- **Air quality:** Pay attention to indoor air quality when selecting construction materials, finishes and mechanical systems, including the location of intake and exhaust vents, as well as environmental contaminants such as mold, allergens and chemicals found in cleaning products and building materials.\*

- **Materials:** Use nontoxic natural materials, adhesives and finishes to reduce the emission of hazardous toxic gases into interior and exterior environments.

## STANDARDS AND REGULATIONS

The criteria contained in this guide are based on standards found in California and New York child care licensing regulations. However, wherever possible, industry standards for quality design recommendations that support children’s optimal growth are provided.

*Note: Nationwide, early childhood program operators and their consultants must ensure the currency of all acts, codes and regulations quoted or referred to throughout this guide.*

Child care and early education facilities are regulated under:

- California Department of Social Services – Child Care Licensing Regulations: California Code of Regulations, Title 22, Division 12
- NYC Department of Health and Mental Hygiene (DOHMH): Article 47 (Child Care Services) of the New York City Health Code

Other authorities include municipal fire, health, and building and zoning departments.

## PEDAGOGY

In addition to standards established for the physical space, child care facilities serve a broad universe of child care and early education principles. For example, while open floor plans, neutral colors and textures, and flexible furnishings may not be required, they enhance the quality of the facility. Priority needs to be given to spaces used

\* Ventilation systems generally do not provide good air circulation close to the floor, where young children typically play. Combined with synthetic interior finishes and furnishings, which often exude minute quantities of noxious gases, inadequate ventilation systems create unhealthy spaces, particularly for young children.





by children as well as to storage and prep areas that support staff. Facilities should reflect unique aspects of curriculum focus with art areas or room for inclusion of special needs, technology and the natural environment.

## HOW TO USE THE DESIGN GUIDE

This guide is intended to be used by all individuals involved in planning, programming, designing, financing, constructing and operating an early childhood facility.

- **Early childhood professionals:** (child care directors, education and program consultants, and teachers): Bring expertise in child development and quality early childhood education programs to the project.
- **Developers:** (housing or other mixed-use development): Bring management and financing expertise to the project, as well as a percentage of the required equity.
- **Architects:** Bring planning, space programming and design expertise.
- **Contractors:** Bring expertise in building material specifications, costs and construction schedules.
- **Development consultants:** Bring a developer's expertise, supplying technical assistance without providing equity for the project.

- **Other consultants and entities** (engineers, landscape architects, lawyers, cost estimators, government agencies, etc.): Participate in the creation of a successful quality child care and early education project.

The guide is organized to correlate with a building development and architectural design timeline, and demonstrates how a team of professionals (as listed above) works together throughout the project. The content is divided into three sections that move through sequential phases and steps to a successful project. However, it should be noted that some activities happen simultaneously, or continue through more than one phase. For example, securing financing for the project is addressed in the first phase, but fundraising may continue through all phases of the project. The sections are identified by the following major phases of design and development:

- Planning and Feasibility
- Pre-Design and Design
- Construction and Occupancy

Within each section, operators, developers, architects and contractors will find pertinent information that corresponds to their specific roles with regard to decisions to be made, tasks to complete and critical benchmarks to reach. Tasks and responsibilities specific to each professional are identified throughout the guide.

MONTH 1

● Market Analysis

*Developer and Operator* research the need for child care in the community

● Size of Early Childhood Facility

*Operator* estimates number of children and age groups to be served

● Size of the Housing

*Developer* to determine number and type of units, and the target income levels

MONTH 2

● Working as a Team

*Operator and Developer* identify key partners and team members as early in the process as possible

● Contracts

*Operator, Developer, Architect,* and other partners work together to clearly define each team member's role and responsibilities for the project

MONTH 3

● Budget and Financing

*Developer* to prepare a financial analysis/ feasibility of the whole project

*Operator* to determine available capital for the project, potential funding sources, and preliminary operating budget for early childhood facility

*Developer and Operator* must clearly identify who is responsible for various portions of the financing



# SECTION I

## PLANNING AND FEASIBILITY

## PLANNING AND FEASIBILITY

### GETTING STARTED

When an early childhood operator decides to renovate an existing facility or build a new center, he/she often thinks that the first step is to call an architect. However, no matter how small or large the project is, several steps in planning, analysis and research need to be completed before an architect can begin designing. Renovating or expanding an existing facility requires an evaluation of the full scope of the project with regard to design, schedule, budget and impact on the existing program (e.g., the possibility of temporary relocation during construction). Or, if the developer or operator already owns a site, the conditions of that site will help define opportunities and constraints for a child care and early education facility. The child care and early education operator must work closely with a developer or a development consultant to determine the full scope and feasibility of the project under consideration, which will inform all partners involved and support an efficient process for moving forward.

Success is not achieved by skipping steps. This section will assist the team in defining the scope of the project, and will help the operator and developer determine whether or not the project meets the necessary threshold criteria to move forward successfully. The completion of this phase should result in a written feasibility report for the child care and early education facility primarily prepared by the architect and/or a development consultant, with input from the child care and early education operator.

If research confirms that there is a demand for child care and early education services, it is equally important to analyze what type of early childhood program the community can best support. Or, the research and analysis may show that there is little or no need for child care and early education services in the targeted area. Therefore, it may be determined that the project is not feasible and should not move forward at the present time.







## PLANNING AND FEASIBILITY

### KEY OBJECTIVES

- Analysis of the need and demand for child care and early education services
- Preliminary program assumptions for the child care and early education space (number of children and age groups)
- Identification of all project team members
- Analysis of organizational capacity
- Summary of financial analysis and readiness

## MARKET ANALYSIS

### OVERVIEW OF CHILD CARE MARKET

#### SUPPLY AND DEMAND

Demand for early childhood services has been growing as a result of changes in the economy, the workforce, the population of young children, the composition of families and parents becoming more informed about the importance of early education to their child's development and preparation for school and success in life. The demand for child care and early education expands and contracts in reaction to population changes, economic changes – job growth and parents' need to work – as well as fluctuations in the supply and cost of a range of child care arrangements.

The crisis in child care supply has been fueled by the lack of affordable capital and technical expertise for program development and expansion, a decrease in the pool of traditional early childhood operators, and the increase in demand from working parents for affordable and convenient quality child care and early education services. While child care operators and consumers have an important role to play in solving the “supply crisis,” none of them can do it alone. Developers and architects, too, have a role to play: allocating space and designing sustainable and healthy environments for child care and early education programs in commercial and residential projects, and participating in other effective solutions through working partnerships with government agencies, early childhood program operators and consumers, and the surrounding community.

*What types of early childhood services do people need and want?*

While many families may need child care, some may not be eligible for state subsidies or able to afford fees. Others may prefer to have family day-care homes or relatives care for their children. For this reason, it is unwise to assume that need equals demand. Contact the local child care resource and referral agency and speak directly to families in the area to find out what they need, and what type of care they prefer for their children. Those most easily identifiable as primary target



markets include young two-income families and single-parent families with one or more preschool children (children ages 0 through 5 years), who live or work near the project location.

As early as possible, the operator must determine the total number of children the early childhood facility is going to serve, and the exact ages of the children, as space and staffing requirements for infant, toddler and preschool rooms are different. These requirements have an impact on the design of the facility and the operating budget, which will be critical information for the developer and architect to have during the feasibility analysis. It is neither possible nor realistic to plan a generic early childhood facility to serve “young children.” A needs assessment is essential to determining what type of early childhood facility will be most successful, and will also help the developer ensure that they are partnering with best early childhood operator.

**MARKET ANALYSIS:  
KEY TASKS AND CONSIDERATIONS FOR THE  
OPERATOR AND DEVELOPER**

- Define the geographic boundaries of the community.
- Identify proximity to other early childhood services in the community.

- Analyze existing early childhood programs in the community:
  - Determine if existing programs are under-utilized or insufficient to meet demand, or if they have a waiting list.
  - Determine the potential impact of a new facility on existing programs.
- Who are the early childhood services intended to reach?
- What can families in the area afford to pay for child care and early education?
- What is the availability of vouchers, public contracts and community collaborations/partnerships?
- What will the relationship be between the early childhood facility and other proposed uses in the community?
- How will the cost of developing an early childhood facility be recovered? Who pays for what?
- How will the early childhood facility affect taxes, insurance and maintenance costs?
- How much rent/occupancy cost will the early childhood program be able to afford?
- How will conflicting priorities with other contemplated uses of the site be resolved? (location of entrances, parking, use of outdoor space)?

If the project is being driven by the developer and an operator has not yet been identified, it is essential for the developer to hire a knowledgeable early childhood consultant. The consultant can help the developer to identify options and make well-informed decisions about programming, sites, costs, design considerations, management and operations, and other child care and early education program issues. Having the operator and/or an early childhood consultant work with the development team in the initial planning and conception stages will help ensure that the questions identified here are fully considered. Optimally, the future operator of the center will be involved as a partner from the initial planning of the project, either directly or in tandem with a consultant.

#### CHILD CARE AND EARLY EDUCATION DATA RESOURCES

Local child care resource and referral agencies maintain information on the supply of licensed child care centers and day care homes available to parents in the community, as well as data on the volume and types of child care needs expressed by parents residing in their service area. Please visit the LIIF website, [www.liifund.com](http://www.liifund.com), for a list of current resources.

## TASKS AND RESPONSIBILITIES

### Operator

- Take the lead on conducting a market analysis and, if teaming up with a larger development project, use the developer's analysis as backup.
- Determine preliminary program information: number of children, age groups, available capital contribution for the project.

### Developer or Development Consultant

- Inform the early childhood operator about how many units of housing are planned for the development, and the anticipated target incomes.
- Convey knowledge of plans for housing development in the area. An increase in the construction of new family housing can dramatically affect the need and demand for child care and early education services.
- Determine the rent required for the child care and early education space.
- Determine site conditions and entitlement requirements.



## CREATING A VISION

Early childhood programs can be quite varied. The number of children being served, the age of the children, whether care is privately paid or subsidized, hours of operation, meals prepared on- or off-site, and special features such as a parent resource room, a gross motor room, or a speech and physical therapy room are just a few of the issues. There are many items and options to consider, and it is important for the operator and developer to carefully assess what they want to accomplish and establish their primary concept and goals for the project before starting the pre-design and design phase. The operator's and developer's objectives should be identified in terms of both the overall project and the early childhood facility itself, and should clearly indicate how the early childhood facility services relate to the economic and physical goals of the whole project. A preferred management approach for the early childhood facility should be determined early on.

## IMPLEMENTING THE VISION

### WORKING TOGETHER AS A TEAM

As has been noted, the process of developing an early childhood facility is complex and requires the involvement of many knowledgeable professionals. Consultation or partnering with professionals well-versed in all aspects of business

start-up and in the design and development of early childhood programs is strongly encouraged. Team structure and collaboration can vary along a continuum from the owner-builder who will do it all to a major tenant or a joint-venture partnership between an operator and developer. Arrangements and responsibilities for renovating or developing an early childhood facility should be decided as early as possible.

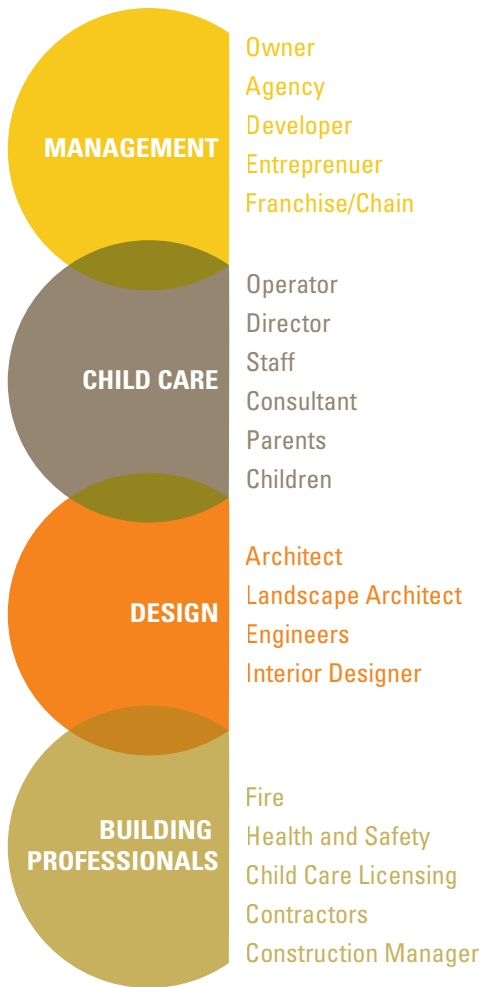
Co-locating a child care and early education program within a housing project requires the developer to build it, sponsor it, broker it or undertake the early childhood portion of the project in some type of partnership with others. Any number of arrangements can be structured around the project developer's financial, tax, organizational and operational needs. The project team must include the developer, the early childhood operator (or team of child care consultants), an architect and a contractor. Other consultants may include potential financial investors (lenders or grant-makers) and attorneys. These services should be obtained while the decision to include an early childhood facility is initially being explored. Key considerations for developing an early childhood facility include the developer's and operator's commitment and vision as well as their ability to obtain the necessary financing, tenant commitments, and political and community support.



*Before*



*After*



Anita Rui Olds

*An effective design team includes representatives from the child care and design professions, developers, management, contractors, and regulatory agencies.*

## HOW THE TEAM WORKS TOGETHER

All members of the team must determine their respective organizational capacities and designate a primary contact person/manager to be available for the duration of the project. The project manager will serve as the point person and coordinator for all the information regarding regulations, costs, recommendations from partners and consultants, and emerging opportunities and constraints on the project's vision. Action items for the project team during early planning are to:

- Understand the needs of all team members, including the facility's inhabitants.
- Review the design and development process in detail.
- Review the major early childhood program criteria in detail.
- Set goals and timeline for completing tasks.
- Present a rough timeline for the entire project.

All participants must be aware that the schedule may change, must be informed of factors that could affect the schedule, and must be willing to play their role in helping maintain the schedule.

## ROLES AND RESPONSIBILITIES

### EARLY CHILDHOOD OPERATOR

The child care operator and other early childhood consultants provide expertise and knowledge in early childhood development, program operation and management. The operator is responsible for informing the project team about how early childhood programs and facilities operate as a business, from day-to-day functions to detailed financial information, and the philosophy/pedagogy behind providing services to children and families. It is the operator's job to conduct an early childhood needs assessment in the project area, to determine how many children should be served, and what the age groups of the children should be. It is also important for the operator to inform the developer and architect regarding all known licensing and regulatory requirements specific to early childhood facilities, as well as additional quality standards and accreditation they aim to achieve. The operator works closely with the architect to identify all the desired and needed program spaces, as well as the area required for each space. The operator brings valuable knowledge to the project, and his/her role and commitment during the design phase are critical to a successful project.



While the developer will most likely bring some equity to the project, primarily for building out the shell and core of the space, the child care and early education program will also need to provide capital for the interior build-out of a new or renovated facility. The operator needs to have the capacity to lead a capital campaign or be able to hire a consultant to do so, as fundraising requires gaining community and political support. As much as possible, the developer and operator should work together on building support for the project. The operator is responsible for:

- Assessing the need/demand for child care services in the area.
- Preparing an operating budget for the child care and early education program.
- Defining the population of children and families that will be served by the facility.
- Identifying funds to build and operate the program.
- Providing guidance and input to the architect on design criteria.
- Reaching out to the local community and political figures to support the project.

### **DEVELOPER**

For a developer-driven project that includes a child care facility co-located within multifamily housing, the developer conducts a needs assessment and evaluates the local market potential for housing in

the project area. The developer brings management and financing expertise to the project, both of which are critical to making sure a project moves forward as efficiently as possible in terms of time and money. The developer provides a percentage of the required equity contribution to the project, and takes the lead in conducting a market analysis and needs assessment for the housing. The developer also makes decisions about how many units of housing will be built, and what levels of affordability will be provided. The developer discusses, advises and negotiates options for financing the build-out of the child care and early education facility and a lease or condo agreement for the space with the operator. The operator and developer jointly prepare a Memorandum of Understanding (MOU) that clearly defines their individual roles and responsibilities for the project before design begins. It is important for the operator to recognize that the developer is managing a large project with many variables, of which the child care and early education facility is just one part.

The developer plays the primary role in managing the entire development process. These services may include, but are not limited to, the following:

- Analyzing project's financial, physical and legal feasibility.



- Developing multi-phase proformas, budgets and schedules, and continually tracking project budget to actual performance against proforma.
- Participating in land and building acquisitions, including site selection, due diligence, purchase price and site control negotiations, risk mitigation, and securing acquisition and predevelopment financing.
- Identifying and structuring debt and equity (loans and capital grants) resources and viable subsidies. This includes providing technical assistance regarding various local, state and national affordable-housing programs, including low income housing tax credits, and bond financing and assisting in the preparation of appropriate applications for funding resources as well as building relationships with traditional lenders and private-equity providers.
- Guiding architect selection and contractor bidding, and negotiating design and construction contracts.
- Facilitating public processes and process plans through government agencies to secure all necessary local, state and federal approvals.
- Overseeing design and construction, including reviewing architectural and construction documents; leading design and construction progress meetings; reviewing and approving invoices, requisitions and change orders; and

overseeing punch-list completion – ensuring completion on time and on budget.

- Managing project branding, sales, leasing and marketing plan formation and implementation.
- Overseeing the leasing process, including broker selection and coordination; identification of potential tenants, negotiation of leasing terms and writing letters of intent to potential tenants, and reviewing leases to ensure that critical business terms have been accurately reflected.
- Coordinating with asset and property management staff to ensure a smooth transition from development to operations.

### **ARCHITECT**

The architect evaluates potential sites, provides design options, provides permit and construction documents, and assists with selecting a general contractor and administering construction contracts.

An architect with experience in child care and early education spaces can be an immense help through the entire design and construction process. These individuals have the expertise to advise the operator in site selection, assist with programming, coordinate the zoning and building code review process as well as the licensing review process, design the physical facility, and act as the child care operator's representative during the

administration of the contract for construction. The architect is able to provide information about whether a site or existing building can accommodate the program goals of the operator and developer. During all of the following phases, the architect prepares drawings and renderings to help everyone visually understand the end result of their planning.

- **Pre-Design Phase:** The owner's program, the financial and time requirements, and the scope of a project are established. The work in this phase results in a Program Statement that clearly identifies all spaces and area requirements.
- **Site Analysis Phase:** Site-related limitations and requirements for a project are established.
- **Schematic Design Phase:** The general scope, conceptual design, and scale and relationship of components of a project are established.
- **Design Development Phase:** The size and character of a project are further refined and described, including architectural, structural, mechanical and electrical systems, materials, and such other elements as may be appropriate.
- **Contract Documents Phase:** The requirements for the work are set forth in detail.
- **Bidding or Negotiation Phase:** Bids or negotiated proposals are solicited and obtained and contracts are awarded.

- **Contract Administration Phase:** The work is performed by one of more contractors.
- **Post-Contract Phase:** Assistance with an owner's use and occupancy of a project is provided.

In a developer-driven project, where a child care and early education facility is being co-located within a multi-family housing development, the architect will most likely be hired by the developer based on his/her experience in housing design. The architect works closely with the developer and operator to ensure that all housing and early childhood goals are met in the design. Or, the operator may decide to hire his/her own architect or design consultant to work with the developer's architect to ensure that proper attention is given to the special design and regulatory requirements associated with a child care and early education facility.

One of the architect's most important tasks in the pre-design phase is the preparation of a thorough and detailed Program Statement. The architect works closely with the early childhood professionals and consultants and the developer to outline the specific design and space criteria for both the early childhood facility and the housing units. The Program Statement is referred to throughout all phases of the project. Once the programming has been signed-off on by the operator and developer, the architect proceeds with the design of the early





childhood facility, including schematic design options, design development, and permit and construction documents. He/she may also assist the developer with the bidding process, selecting a general contractor, administering construction contracts for the facility, and providing construction administration services to ensure that the facility is being built to required design and sustainability standards.

One of the best ways to select an architect is to get references from those involved in existing early childhood programs, especially ones that you admire. Interview several of those recommended and see examples of their work. Choosing someone who has experience in the design of early childhood centers and is familiar with the operational needs of an early childhood program is strongly recommended. Be sure to choose someone with whom you can communicate comfortably and whom you feel will respect your ideas and your budget.

### **CONTRACTOR**

It is recommended that you involve a contractor in the project as early as possible. The contractor can provide preconstruction services and other valuable input early on, which can save time and money for the entire project. The contractor's services may include:

- **Recommendations Regarding Plans and Specifications.** Work with the architect and his/her consultants during the development of design documents to analyze alternate construction systems and materials. Make recommendations with respect to costs, possible economies, construction feasibility, availability of materials and labor, time requirements for installation, and marketability of alternate floor plans (for the housing).
- **Construction Quantity Survey and Cost Estimate.** Prepare and submit to the owner (developer) and architect a detailed budget estimate when the project is at a conceptual stage. This estimate will be updated periodically, and reviewed with the owner and architect as design progresses. Should increased costs require design changes to the early childhood facility, the operator must be consulted and must sign-off on all decisions being made.
- **Construction Scheduling.** Prepare and maintain a comprehensive overall project schedule, covering both design and construction stages. This schedule will be updated regularly as the project progresses, defining the critical path and key actions needed to expedite the work.
- **Subcontract Documents.** Review plans and specifications with the architect and make recommendations to the owner and architect regarding division of work for the purpose of bidding and awarding subcontracts. Eliminate





areas of possible conflict and overlapping jurisdictions among subcontractors. Take into consideration such factors as the type and scope of work to be performed, time of performance, availability of labor and materials, community relations, and other pertinent criteria.

- **Long Delivery Procurement.** Work with the operator and architect in identifying, purchasing and expediting long-lead-time items.
- **Sustainable Design.** Determine and implement the sustainable, efficient, healthy design and construction goals of the housing owner, operator and design team.
- **MBE/WBE (*Minority Business Enterprises/ Woman Business Enterprises*) Screening and Solicitation.** If required, solicit approved MBE/WBE subcontractors and suppliers for bidding purposes. Review and meet with local governing agencies to review applicants and requirements.
- **Job Site Facilities.** Review the documents to assure that they contain: (a) provisions for all temporary facilities necessary for subcontractors to perform their work, and (b) provisions for all job site facilities required by the owner, the architect and the contractor.
- **Meetings.** Take, transcribe and distribute to all parties the minutes of project planning meetings.

## ADMINISTRATION OF PREVAILING WAGE

Projects that receive public funding in excess of specified amounts are required to comply with Prevailing Wage laws. Prevailing Wage laws are triggered when there is an agreement or contract between a public entity and a contractor to perform “public work,” which is defined as construction, reconstruction, demolition, alteration, custom fabrication or repair or maintenance work, including painting and decorating, done under contract and paid for in whole or in part out of public funds.

Prevailing Wage laws regulate the conditions of employment, obligations of employers, hours of labor, and wage and fringe benefit rates for each classification of worker determined to prevail in a given locality for a given type of construction. Contractors on publicly funded construction projects covered by Prevailing Wage laws are required to submit certified payroll statements indicating proper worker classifications and wages for both straight time and overtime work. Certified payrolls must be submitted to oversight agencies within a specified number of days after the end of the payroll period, and penalties are incurred for late submission.

Federally funded projects are subject to prevailing wages under the Davis-Bacon Act. Wage determinations on these projects are issued by the U.S. Department of Labor under the Davis-Bacon and

Related Acts. Projects financed with state, county or municipal funds are subject to regulations and monitoring requirements established by local labor enforcement agencies.

Any child care project financed in whole or part with public funds must ensure that contractors comply with Prevailing Wage requirements as determined by the financing agency. Providers and developers should note that prevailing wages typically increase construction costs by 5 to 25 percent, which needs to be factored into the decision to pursue specific sources and amounts of public financing. Providers entering into contracts with Prevailing Wage requirements should consult with an attorney to be sure that they understand their rights and obligations. (For more information, see [www.gpo.gov/davisbacon](http://www.gpo.gov/davisbacon).)

#### OTHER PROJECT CONSULTANTS AND PARTNERS TO CONSIDER

- **Child Care Center Licensors** evaluate potential sites and plans to ensure that the early childhood facility goals are realistic, consistent with the program vision and in compliance with child care regulatory requirements.
- **Bankers and Accountants** review business plans and financing options, and provide financial recommendations and support.
- **Attorneys** review legal partnering written agreements (MOU between the developer and operator).

- **Real Estate Professionals** review lease or purchase sale agreements.
- **Early Childhood Consultants** provide expertise in early childhood development and help ensure that the goals are realistic and consistent with the program vision.
- **Capital Campaign Consultants** assist the child care and early education operator with fundraising efforts.
- **Local Business and School District Representatives** help assess the enrollment needs.
- **Community Members and Parents** help assess enrollment needs and can advocate for the project when political support is needed.
- **Local Government Planning Departments** define zoning and building code requirements, which determine if child care and early education are allowed uses in the project area.
- **Fire Marshals** review building plans/designs for compliance with safety code regulations, ensuring that all occupants are able to exit the building safely if needed, and that the fire department has adequate access to the site and building in the event of a fire.
- **Engineers** (mechanical, electrical, structural, environmental, civil, etc.) work closely with the architect to coordinate all elements of the building and site design.
- **Landscape Architects** research, plan, manage and design both the natural and built exterior environments, with a concern for the steward-



ship and conservation of natural, constructed and human resources.

- **Cost Estimators** (quantity surveyor) provide preliminary development cost estimates for the project during the planning phase, and more detailed/adjusted cost estimates during design and construction.
- **Project Managers** coordinate the efforts of all team members and inform the team about project schedule and budget throughout the planning, design and construction process.
- **Land Surveyors** measure the site and its topography and establish a land map that shows boundaries and property ownership.

## BUDGET AND FINANCING

Determining the financial feasibility of a child care and early education facility, either as a stand-alone structure or in a mixed-use development, requires establishing clear operating projections for the facility as well as a detailed development budget. Early childhood programs typically don't generate enough income from tuition fees alone to fully cover development costs. A financial analysis of all relevant income sources and beneficiaries is required to establish project feasibility based on the developer's financial requirements as well as programmatic resources.

## PROJECTING COSTS

Projecting development and operating costs – as well as parent fee structure – must be part of the basic decisions about the numbers and ages of children served; the construction and maintenance of the facility; and the equipment, supplies and staff needed to serve these children.

Income and expense projections dictate the fees that families will pay for child care and early education, or what is needed from government subsidies. These fees are typically not sufficient to cover both operating and development costs of a new facility. In many instances, fees cover a little less than operating expenses – including occupancy costs – if they are “affordable” to most parents.

Dependence on fees to amortize development costs will, in most cases, result in either a negative cash flow or a fee structure that exceeds both the financial capacity of most families in the target population and the prevailing market rate for child care and early education services. Developers who are building a child care and early education facility must determine either where to obtain a capital subsidy or how to carry some facility costs as part of their operating expenses.

## FUNDING SOURCES

Financing new construction or the renovation of an early childhood facility is frequently a matter of piecing together some of the following options:





- Bank, community development and/or government loans.
- Equity grants from public and private organizations and/or individuals (nonprofit status may be required).
- Volunteer labor and in-kind donations.
- Amortization of the cost of improvements through lease payments.

#### DEVELOPMENT BUDGET

A development budget must be prepared and adhered to throughout the project. The following costs typically make up the total project cost and are included to demonstrate the need to clearly identify all costs and ensure that they are accounted for as early as possible during the planning phase.

- Estimated cost of construction (including landscaping and equipment for the child care outdoor play yard)
- Contingency allowance (5%); may be higher per funder requirements
- Consultants (up to a maximum of 15%)
- Permits
- Servicing (site, hydro, telephone, data wiring, etc.)
- Legal fees
- Construction insurance
- Site and/or building acquisitions costs
- Site appraisal
- Site survey

- Condition, subsurface/geotechnical and environmental reports
- Signage
- Disbursements and general overhead (if approved)
- Applicable taxes and rebates

The development budget is prepared by the developer with assistance from the architect or a cost estimator/quantity surveyor. In the preliminary phase of development, the cost is usually expressed as a “square foot” estimate (e.g., the building will cost \$300 per square foot; therefore, a 60,000-square-foot building would cost roughly \$18,000,000 to build). As the project develops and greater detail becomes available, a more extensive elemental costing, which breaks down the various building components, is performed. During this phase of the project, before the child care and early education program criteria have been clearly defined, developers, operators and architects use the following formula to estimate the total/gross square footage that will be needed for the child care and early education facility: Total number of children X 125 sq. ft. = Total gross square footage of the child care facility (e.g., 100 children X 125 sq. ft. = 12,500 sq. ft. child care facility).

Key considerations before moving forward to the next phase:

- Confirm financial feasibility; project child care and early education program operating cost five to ten years out (or as long as the loan term) to determine ability to carry debt, inventory equity and collateral assets.
- Prepare a preliminary development budget; show hard and soft costs and confirm the project's financial viability.
- Identify and secure potential funding sources.
- Determine who is responsible for the various portions of the financing in relation to the early childhood facility build-out and rent.
- Determine what type of fee structure will be required. Can fees be met through subsidies and private-pay tuition?
- Calculate additional capital needs. What sources are available to fill anticipated gaps?
- Establish a projected rent requirement. Is it affordable?
- Determine how the lease will be structured. Who will cover additional occupancy costs, (e.g., utilities, insurance, taxes)?

Once all the activities and tasks described above have been vetted and thoroughly established, the Pre-Design phase can begin. Keep in mind that modification of both the project vision and financing plans may be necessary as new information is discovered during the planning and design work.



parent board



**MONTHS 4-6**

**Sustainable/Green Design**

All team members to discuss how sustainable design practices will be incorporated into the project

**Programming**

*Operator* and *Architect* to determine all program spaces and design criteria for the early childhood facility

*Developer* to verify type and number of housing units, and other amenities for the housing

**Site Survey/Zoning Analysis**

*Architect* and *Engineers* conduct research and analysis of existing site conditions and submit findings and recommendations to the *Developer* and *Operator*

**Securing a Site**

*Developer* and/or *Operator* identify and acquire a site

**Financing**

*Operator* and *Developer* continue to look for funding sources, and secure financing for the project

**MONTH 7**

**Flow Diagrams**

*Architect* prepares space schematics/flow diagrams according to criteria established during the programming phase

*Operator* reviews flow diagrams to ensure child care program criteria is being adhered to

**Regulatory Reviews**

*Developer* and *Architect* coordinate necessary reviews with City Planning, Community Boards, and other reviews that may be specific to the local jurisdiction

**MONTHS 8-9**

**Political Support**

*Operator* and *Developer* working on project support from local government and other key stakeholders

**Schematic Design**

*Architect* prepares conceptual design drawings per the criteria established in the Program Statement, and coordinates work with all design consultants, and engineers

*Operator* ensures the Architect is aware of all regulatory requirements for the child care facility, and helps coordinate child care licensing review

*Architect, Operator, and Developer* establish a sustainable design approach for the project

*Contractor* prepares a preliminary cost estimate based on schematic design

**Financing**

*Developer* and *Operator* continue to secure funding for the project

**MONTHS 9-12**

**Design Development**

*Architect* and their consultants continue to refine the design and drawings in greater detail

**Review**

*Operator* reviews the design development to ensure it is in compliance with the criteria established in the program statement. This is the last opportunity to approve or reject design changes without having a huge impact on costs and schedule

*Developer* continues with regulatory and community reviews as required

**Cost Estimating**

*Contractor* prepares a revised cost estimate/ construction budget

**MONTH 13**

*Developer* and *Operator* review the design to ensure it remains within the project budget

**Financing**

*Developer* and *Operator* continue to secure funding for the project

**Value Engineering**

*Architect, Contractor, and Developer* review the design to ensure maximum quality and performance are being achieved within the project budget

*Operator* must be consulted on all value engineering decisions to ensure the design of the early childhood facility is not being compromised

**MONTHS 14-17**

**Construction Documents**

*Architect* and their consultants prepare in great detail the final drawings and written specifications for the early childhood facility

**Design Review**

*Operator* and *Developer* must approve of the design – any changes at this point will create delays in the schedule and additional costs

**Value Engineering**

*Architect, Contractor, and Developer* continue to review the design to ensure maximum quality and performance are being achieved within the project budget

**Regulatory Review/Approvals**

*Architect* and *Developer* coordinate all regulatory reviews and permit submittals

**Financing**

*Developer* and *Operator* continue to secure funding for the project



# SECTION II

## DESIGN



## OVERVIEW

### DESIGNING QUALITY SPACES FOR YOUNG CHILDREN

Childhood, a period of active and rapid development, is the optimal time for learning. With the right encouragement and resources, each child is ready and motivated to explore, interact and grow. During these early years, children need a wide variety of experiences to arouse their curiosity, challenge their cognitive and physical abilities, and provide opportunities for self-expression. Healthy development depends on the variety and richness of the environment, people and events surrounding the child.

Child care regulations in each state have been created to ensure the child's immediate and essential needs for health, safety and general welfare. While these standards are consistently improving, they typically do not address the full range of quality issues related to the physical environment. Regulations are limited to those criteria that can be objectively measured and evaluated – for example, teacher qualifications and minimum indoor/outdoor space requirements. It is critically important that architects and developers look beyond regulatory standards when designing quality environments for young children.

Early collaboration, long-range planning, and attention to the purpose and goals of the early childhood program are fundamental and imperative in designing a quality early childhood facility. The regulatory, financial and environmental parameters placed on child care make facility development a complex process. The task of the design team is, therefore, to work with state licensing and local building departments, child care consultants and operators, and the community to be served in order to plan and construct a facility that not only provides a safe, healthy environment for children, but also enhances each child's physical, intellectual and social development.

## SUSTAINABLE DESIGN PRACTICES

Today's architecture and building industry focuses on conservation, recycling and long-term performance in a comprehensive strategy known as sustainable design. This practice involves the careful selection of building materials, construction methods and design details to create structures that consume fewer natural resources to build, maintain and remain viable in the future. Architects are in a unique position to affect the environment, since they often control or influence factors, such as selecting materials to

conserve resources, promote durability and reduce embodied energy; siting to benefit from renewable sun, wind and water energy; using natural light to improve productivity and reduce energy costs; using passive strategies for mechanical heating and cooling; and improving indoor environmental quality (IEQ) through the use of low-emitting materials, acoustic performance and daylighting. All of these items are extremely important when designing child care and early education spaces. The health and well-being of children and staff using the child care facility will be greatly affected by the architect's sustainable design practices, and must be reflected on throughout the design process.

## PRE-DESIGN

The purpose of the Pre-Design phase is to give all team members the information needed to thoughtfully and cost-effectively participate in planning the design of a sustainable child care and early education facility, and to ensure that all team members participate in making important decisions about program requirements and design criteria before work begins on the actual space design. This phase of work typically includes the following tasks, which are described in further detail in this section:

- Programming
- Space schematics and flow diagrams (bubble diagrams)
- Existing facilities surveys

Key objectives for the Pre-Design phase are:

- To establish the operator's program, the financial and time requirements, and the scope of the project.
- To verify that the project aligns with conditions, terms and timelines for all funding sources, especially public funds.
- To complete an architectural Program Statement that defines specific design criteria and goals for the child care and early education facility, and see that the statement is agreed to and signed-off on by the operator, architect, and developer (if it is a developer-driven project).

## PROGRAMMING

**Program Statement:** A written document that defines the project goals and design criteria, including all space and square footage requirements. It serves as the basis for the facility's design requirements and guidelines, and for evaluating various proposals or alternatives throughout the design and construction process.

The Program Statement establishes and documents the following detailed requirements for a project:

- Design objectives, limitations and criteria
- Development of initial approximate gross facility areas and space requirements
- Space relations
- Number of staff and responsibilities
- Flexibility and expandability
- Special equipment and systems
- Site requirements
- Preliminary budget for the work, based on programming and scheduling studies
- Operating procedures
- Security criteria
- Communications relationships
- Project schedule

At this point, following the planning and feasibility work completed in the previous phase, the operator has determined the total number of children and the appropriate mix of age groups to be served by the child care and early education facility. This information is used by the operator and architect to develop specific criteria for the spaces that are needed to serve the children and the early childhood education staff.

During the programming phase, the architect takes the lead in coordinating meetings with the operator and child care and early education staff to assist them with identifying their space needs.

This is done by interviewing the operator and staff about how they use their existing facility space – what works well and what needs improvement. Many operators are accustomed to providing care in substandard spaces that were not originally designed for child care and early education. Once an operator has become used to “making-do“ in inadequate space, it can be challenging to identify all of the space issues that need to be addressed in the design.

Therefore, it is critical for both the operator and architect to research, ask questions, and observe other quality child care and early education environments, looking for successful design elements that can be replicated. To gain a better understanding of day-to-day functions and the space challenges that need to be resolved in the design of a new early education center, it is also important for the architect to observe how children and teachers are using space in existing facilities. This information – along with other identified program activities, green-building technologies, and code and licensing requirements – is used by the architect to prepare a written document that describes all of the child care and early education program spaces and design criteria. As previously noted, this document is commonly referred to as an architectural Program Statement. The team may revise the Program Statement several times before arriving at an overall size (in square feet)



that meets the budget and program goals.

A Program Statement for a child care and early education facility will include, but is not limited to, the following information:

- A statement of the goals, qualitative features, philosophy/pedagogy and objectives of the proposed facility.
- A summary of facility operation: hours and days of operation (some programs operate year-round, while some close during the summer), including ways staff, children and families will use the center.
- Detailed descriptions of all interior and exterior spaces and uses:
  - Children's classrooms
  - Support rooms and areas
  - Storage needs
  - Administrative offices
  - Circulation: exterior and interior (hallways, stairs, elevators, etc.)
  - Play yards
  - Drop-off and pick-up zones
  - Parking
  - Utilities and infrastructure
- Desired and/or required square footage for all identified spaces.
- A list or matrix of desired program adjacencies and space relationships within the child care facility and, if applicable, in relation to other uses within a mixed-use project.

- An analysis of regulatory standards and requirements.

*Note: A sample Program Statement with detailed design criteria follows, and should be used as a template and guide when preparing program criteria for a new or renovated child care and early education facility.*

## TASKS AND RESPONSIBILITIES

The architect, operator, and child care and early education staff and consultants will work closely with one another to establish a detailed Program Statement for the early childhood facility. The developer and operator will review this document together to ensure that the program space requirements and goals are within the project's budget. The developer, architect and operator must approve and sign-off on the following items before proceeding to the space schematics and flow diagrams:

- Review and confirm content of the Child Care and Early Education Program Statement.
- Confirm the size of the child care center.
- Confirm the number of children and age groups to be served.





## PROGRAMMING – KEY CONSIDERATIONS

- Establish a clear description of spaces that are thoughtfully considered and inclusive of all the child care and early education program needs.
- Prepare a thorough and detailed Program Statement that the operator, architect and developer (if a developer is part of the team) all sign-off on before proceeding to the design phase.
- Remember that changing space requirements during the design phase of the facility can slow down the process and add expense.
- Anticipate program changes that may occur due to population shifts, and allow for some space flexibility in the design criteria.

*Note: Before finalizing space requirements, the operator should determine if he/she will be running a Head Start or Early Head Start program, and/or if becoming accredited by the National Association for the Education of Young Children (NAEYC) is part of the plan. Head Start, Early Head Start and NAEYC have their own standards for child care and early education operation, programming, and space requirements that are in addition to local licensing regulations. Therefore, decisions about whether or not the early childhood facility will be a Head Start or Early Head Start center and/or NAEYC accredited should be made prior to finalizing the Program Statement, as this will have an impact on space designation and square footage requirements and is likely to increase the square footage of the whole facility. These decisions are critical to ensuring that the project site and budget can accommodate all of the required program spaces. While space and budget constraints may limit a program's ability to fulfill non-mandatory quality standards, it is recommended that every program aim to meet the greatest quality standard possible, regardless of whether or not the program chooses to be accredited by NAEYC. Information on Head Start, Early Head Start and NAEYC resources can be found on the LIIF website ([www.liifund.com](http://www.liifund.com)).*

# SAMPLE PROGRAM STATEMENT



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## INTRODUCTION

An early childhood environment is many things. It's a safe place where children can explore and learn, and where staff can provide appropriate supervision. It's where important daily activities – playing, eating, sleeping, washing hands, and going to the bathroom – take place. But beyond these basic attributes, an environment for young children must support the teachers and the program's philosophy and curriculum. Therefore, it is important that specific design criteria are established for a facility project as early as possible, and that the child care and early education staff are involved in the planning and design process to ensure that the physical space supports the program's daily and long-term needs. A quality child care and early education environment supports a variety of activities. For example, classroom space is arranged in such a way that children can move freely from one activity to another on their own, make noise while playing without disturbing children in other activities, or make a mess in the art area without destroying the books in the reading area. The types of spaces necessary to support these activities, and others, are described in greater detail in the Program Statement.

## PURPOSE OF THE PROGRAM STATEMENT

The Program Statement is a document that describes the program goals and design criteria for a developmentally appropriate child care and early education facility. The content of this document should be referred to on a regular basis by the architect and operator to ensure that all space and program requirements are being addressed in the facility design. If for any reason the criteria in this document cannot be met, alternate solutions must be agreed upon by the operator, architect and developer before proceeding with the design to ensure the design quality, program operation and budget are not compromised by the decisions being made.

## CREATING THE PROGRAM STATEMENT

The Program Statement is primarily prepared by the architect, who will engage the child care and early education staff in discussions and decisions that will affect the use, appearance and functionality of their new facility space. All participants in the programming process must be ready to voice their honest thoughts during a series of meetings and discussions. The sum of everyone's ideas and knowledge, freely expressed, is key to arriving at the most complete and well-thought-out design criteria possible. The final Program Statement will incorporate all discussions, present conclusions to decisions, and establish goals and criteria from which the design will be generated.

## CHILD CARE AND EARLY EDUCATION PROGRAM MISSION

For over 20 years, the ABC Children's Center has operated a highly respected and successful child care and early education program serving 70 children and families in their community. Their existing facility is deteriorating and is in need of extensive renovation, or they need to build a new space to operate their program. In addition, they have a long waiting list, and would like to expand their program to accommodate a total of 99 children. They are also considering incorporating special-needs services into their site; therefore additional information about special-needs program activities and design criteria can be found at the end of the Program Statement.

The ABC Children's Center philosophy and curriculum emphasize the importance of play, hands-on-learning and whole child development. The program provides an exceptional and nurturing learning environment for young children, and supports the interaction between the child and his/her social and physical environment. A critical component of this approach is a focus on providing children with an opportunity to safely explore and learn about the diversity of their community and surrounding environment. The staff guides each child's unique social, emotional and intellectual growth. Family members are invited and encouraged to visit and participate throughout the day. ABC Children's Center strives to create a welcoming, homelike environment to ensure that both children and adults feel comfortable.

*The new facility will serve 99 children each year, organized in the following groups:*

GROUP NAME	AGE GROUP	GROUP SIZE*	ADULT/CHILD RATIO
Infants	Under 12 months	8	1:4 or 1:3
Young Toddlers	12 to 24 months	10	1:5
Older Toddlers	24 to 36 months	12	1:6
Young Preschoolers	36 to 48 months	15	1:10
Preschoolers	48 to 60 months	18	1:12
Preschoolers	48 to 60 months	18	1:12
Preschoolers	48 to 60 months	18	1:12

*\* number of children in the classroom*

**FACILITY OPERATION**

Monday through Friday, from 7:30 a.m. to 6:00 p.m., September through August. Closed one week in December, one week in August and on all major holidays. The Center will also be closed for staff development five days per year.

**GENERAL GOALS FOR THE EARLY CHILDHOOD PROGRAM AND FACILITY**

Children learn about living by experiencing life; therefore, the design of the facility should provide spaces that are safe for them to explore independently, with a variety of scale, texture and activity choices.

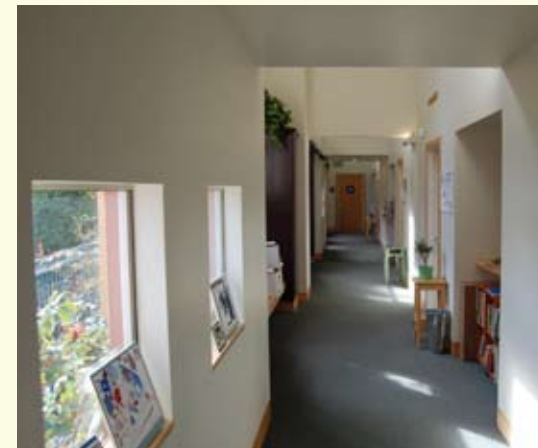
- Home-like entry area – a warm and inviting place to start the day.
- Clean and safe for staff, parents and children.
- Professional, welcoming, child- and parent-friendly.
- Furnishings in good repair, arranged with a sense of beauty and order.
- Areas for parents, children and teachers to gather comfortably for small informal meetings.
- Displays areas for photos and children’s artwork.
- Open and airy – maximizing opportunities for access to natural light.
- Healthy, sustainable materials used as much as possible.

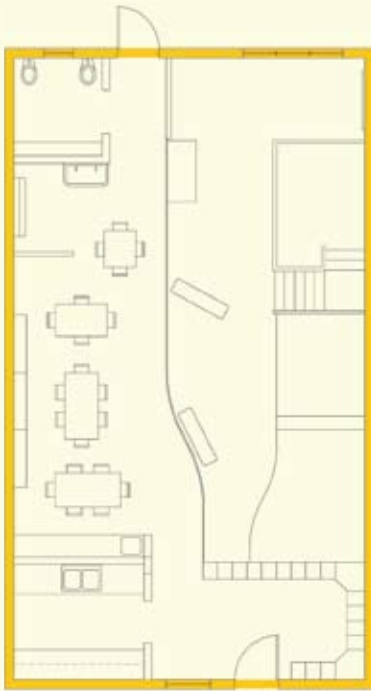


- Opportunities for young bodies and minds to discover, explore, invent and engage with their environment, inside and outside, throughout the day.
- Spaces and equipment organized so children can play freely while allowing staff to provide appropriate supervision at all times.
- Appropriate spaces for eating, sleeping and toilet activities.
- Enough space to move around comfortably – efficient and clear circulation through the center.
- Plenty of accessible storage space designed for specific items (wheel toys, cots or mats, bulk art supplies, etc.).
- A harmonious acoustic environment that reduces the sources and impact of interior and exterior noise pollution.
- Space for music, gross motor (dance and movement), and large art activities.
- Ability to control lighting and indoor temperature settings.
- Sufficient work and prep space for teachers in the classrooms.

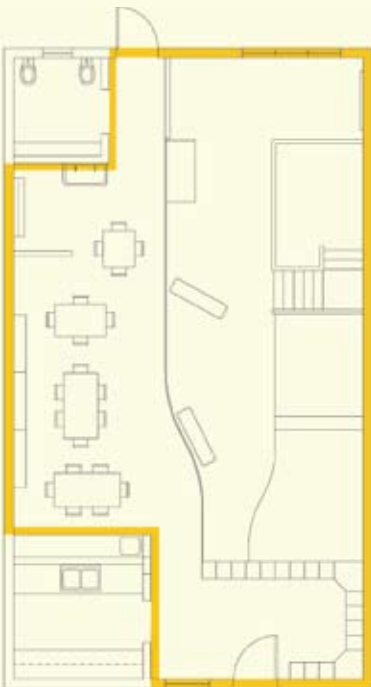
#### ACCESSIBILITY

- The entire building is friendly, welcoming and accessible for non-ambulatory children and adults.
- An elevator serves all levels of the building (if applicable).
- Circulation is barrier-free and easily accessible to wheelchairs and strollers.
- Facilities that include special-needs and early intervention programs have more specific requirements with regard to non-ambulatory children and children with behavior issues. These requirements will be met by the special-needs program operator.





*Gross Room Area*



*Usable Space counted by  
Licensing Regulations*

## DESIGN CRITERIA FOR INTERIOR SPACES

### SQUARE FOOTAGE/AREA REQUIREMENTS

Children in group-care environments require adequate space to move, grow and learn.

- State licensing: While California requires 35 square feet per child of usable interior classroom space, New York allows as little as 30 square feet per child, and this is simply not enough for children and teachers (usable space does not include space occupied by fixed furniture, closets and fixtures). It is important to note that these area specifications are for classrooms only. Child care and early education licensing does not specify area and square footage requirements for all other support and administration spaces within the facility. However, this document provides a sample list of administrative, support and tertiary spaces, along with a recommended square foot area for each.

### BEST PRACTICES

When calculating the square footage for a new classroom quality design aims for:

**Infants** – 85 square feet per child

**Young Toddlers** – 70 square feet per child

**Older Toddlers** – 60 square feet per child

**Preschoolers** - 50 square feet per child

This multiplier indicates the gross square footage per child needed for the classroom, including space occupied by fixed furniture, nap rooms, teacher support areas, storage closets, and children's toilets.

- Most states require a minimum of 75 square feet of usable outdoor space per child; some local jurisdictions provide waivers for this requirement based on proximity to other outdoor play spaces, and/or taking children outside in shifts. The outdoor space requirement will need to be confirmed for each project. Do not assume a waiver will be awarded. Outdoor play is an important element of early childhood development, and every effort should be made to accommodate the required amount of outdoor play space.

When calculating the square footage for outdoor play space quality design aims for **100 square feet per child**. Licensing regulations do not always account for outdoor storage, garden areas and mechanical equipment that may need to be installed in the play yard area.

- Rooms designed and constructed to accommodate the maximum number of children in a group and fully utilize staff-to-child ratios will provide a more cost-effective staffing model and operating budget for the program.

**Classroom Summary Table**

ROOM #	GROUP NAME	AGE GROUP	GROUP SIZE*	RECOMMENDED CLASSROOM SIZE
Rm 1	Infants	Under 12 months	8	680 sq. ft.
Rm 2	Young Toddlers	12 to 24 months	10	700 sq. ft.
Rm 3	Older Toddlers	24 to 36 months	12	720 sq. ft.
Rm 4	Young Preschoolers	36 to 48 months	15	750 sq. ft.
Rm 5	Preschoolers	48 to 60 months	18	900 sq. ft.
Rm 6	Preschoolers	48 to 60 months	18	900 sq. ft.
Rm 7	Preschoolers	48 to 60 months	18	900 sq. ft.
<b>Classrooms Subtotal</b>			<b>99 Children</b>	<b>5,550 sq. ft.</b>

*\* number of children in the classroom*

*Note: The recommended size for infant rooms includes a space dedicated for sleeping and napping that is within, or directly adjacent to, the classroom. The area for the infant nap room should be 200 square feet, and must accommodate eight cribs and a rocking chair or glider. The young toddler nap room should be 100 square feet, and only needs to accommodate five cribs because some of these children will be able to sleep on cots or mats (see sample floor plan for an infant and young toddler rooms).*

**ABC Children's Center Summary of Proposed Interior Spaces for New Facility**

ROOM #	TYPE OF ROOM	ROOM AREA*
<b>CLASSROOMS</b>		
Rm 1	Infants - 8 children	680 sq. ft.
Rm 2	Young Toddlers - 10 children	700 sq. ft.
Rm 3	Older Toddlers - 12 children	720 sq. ft.
Rm 4	Young Preschoolers - 15 children	750 sq. ft.
Rm 5	Preschoolers - 18 children	900 sq. ft.
Rm 6	Preschoolers - 18 children	900 sq. ft.
Rm 7	Preschoolers - 18 children	900 sq. ft.
<b>Classroom Area Subtotal</b>		<b>5,550 sq. ft.</b>
<i>* The recommended square footage listed for classrooms includes area for children's bathrooms, diaper changing, nap rooms, food prep, and storage</i>		
<b>OFFICES &amp; ADMINISTRATION</b>		
Office 1	Reception Area	250 sq. ft.
Office 2	Program Director	150 sq. ft.
Office 3	Assistant Director	80 sq. ft.
Office 4	Book Keeper	80 sq. ft.
Office 5	Nurse's Office	150 sq. ft.
Office 6	Social Worker	100 sq. ft.
<b>Office/Administration Area Subtotal</b>		<b>810 sq. ft.</b>
<b>SUPPORT ROOMS</b>		
Support 1	Multipurpose Room - Gross Motor Activities, Music, Dance, Large Meetings, Storage	1,500 sq. ft.
Support 2	Conference Room / Parent Resource Room	400 sq. ft.
Support 3	Staff Lounge / Resource Room	300 sq. ft.
Support 4	Small Meeting Room	200 sq. ft.



(TABLE CONTINUED FROM PREVIOUS PAGE)

ROOM #	TYPE OF ROOM	ROOM AREA*
<i>SUPPORT ROOMS</i>		
Support 5	Kitchen	400 sq. ft.
Support 6	Bulk Storage	200 sq. ft.
Support 7	Adult Bathrooms (verify # required with local building code)	300 sq. ft.
Support 8	Janitor's Closet	75 sq. ft.
Support 9	Copy and File Room	100 sq. ft.
Support 10	Laundry Room	80 sq. ft.
<b>Support Area Subtotal</b>		<b>3,555 sq. ft.</b>
<b>TOTAL NET Program Area</b>		<b>9,915 sq. ft.</b>
<i>TERTIARY SPACE:</i>		
Entries, Corridors, Stairways, Elevator 20%		1,983 sq. ft.
Mechanical & Electrical Equip., Wall Thickness 8%		992 sq. ft.
<b>TOTAL GROSS BUILDING AREA</b>		<b>12,890 sq. ft.</b>
<b>OUTDOOR PLAY YARD</b>		<b>9,900 sq. ft.</b>
<b>Total Gross Sq. Ft. per Child</b>		<b>130 sq. ft.</b>

### CHILDREN'S CLASSROOMS

Classrooms are the primary areas where children's program activities take place during the day. These rooms must be designed to ensure safety, allow clear supervision by caregivers at all times, and provide a range of activity areas that are age appropriate and support learning. Classrooms should be designed, finished and furnished in a way that encourages children and caregivers to be engaged in a safe and comfortable environment. Each classroom should be designed and furnished to accommodate the following activities: entry area, active play, quiet play, creative play. In addition, well-designed and adequate storage contributes to



the organization and accessibility of items needed for each program activity and group of children. Keeping the space uncluttered improves the flow of movement from one activity space to another and minimizes children interrupting the play of others.

*Note: Provide quantity of washrooms and fixtures in accordance with local Child Care Licensing and Building Code requirements. Provide barrier-free access in accordance with ADA Accessibility Guidelines for Buildings and Facilities.*

### Infant and Young Toddler Groups (3 to 24 months)

Caregivers and infants spend the majority of their play time on the floor – therefore, this room will have a larger percentage of floor area covered by carpet. An infant room should be a warm and inviting open space designed to allow safe exploration of the environment with a variety of surfaces and textures. It should be safe and clean, and allow each infant to be on his/her own schedule.

#### Infant and Young Toddler Rooms Activity Area Checklist

##### Entry (*linoleum or wood flooring*)

- One cubby for each child's personal belongings (backpack, extra clothes, coat, blanket, etc.)
- Parent information board and sign-in sheet

##### Active Area – Gross Motor Activities (*carpet flooring*)

- Infant loft with carpeted ramp and shallow, carpeted steps
- Foam shapes
- Music and movement
- Balls
- Mirrors
- Tunnel
- Pull-to-stand bars
- Pushing and pulling wheel toys





*Infant Room*

*Young Toddler Room*



### Quiet Area (*carpet flooring*)

- Listening to stories or soft music
- Cozy space for cuddling with caregiver, resting
- Soft toys and surfaces – pillows and fabric

### Creative Play Area (*linoleum or wood flooring*)

- Feeding and eating – highchairs or low tables and chairs for older infants (see chair and table size chart).

*Note: Highchairs take up a lot of space, so it is important for the operator to inform the architect about the number that will need to be accommodated.*

- Water play and finger painting

### Nap Area (*carpet flooring*)

- Nap Room: Sleeping area separated from play activity space
- Low walls or walls with windows, and a Dutch door to allow for easy supervision while some children are sleeping and others are playing (children in the infant room may have a different sleeping schedule)
- Accommodate 8 cribs (one for each infant). Crib sizes vary, but the typical dimension of a child care center crib is 26 inches x 40 inches
- Space between cribs must be a minimum of 18 inches
- Crib layout must be determined early to ensure that adequate space is provided
- Lighting should have a dimmer switch that is separate from classroom lighting
- Space for a glider or rocking chair
- Storage for children's blankets and crib sheets

**Teacher Prep Area** (*linoleum or wood flooring*)

- Food and activity prep-area – adult-height counter, base cabinets and upper cabinets for food and utensil storage, sink, microwave, and small refrigerator
- Space to warm bottles
- Microwave space with electrical outlet
- Area to chart and file information about children’s eating, napping and diapering patterns

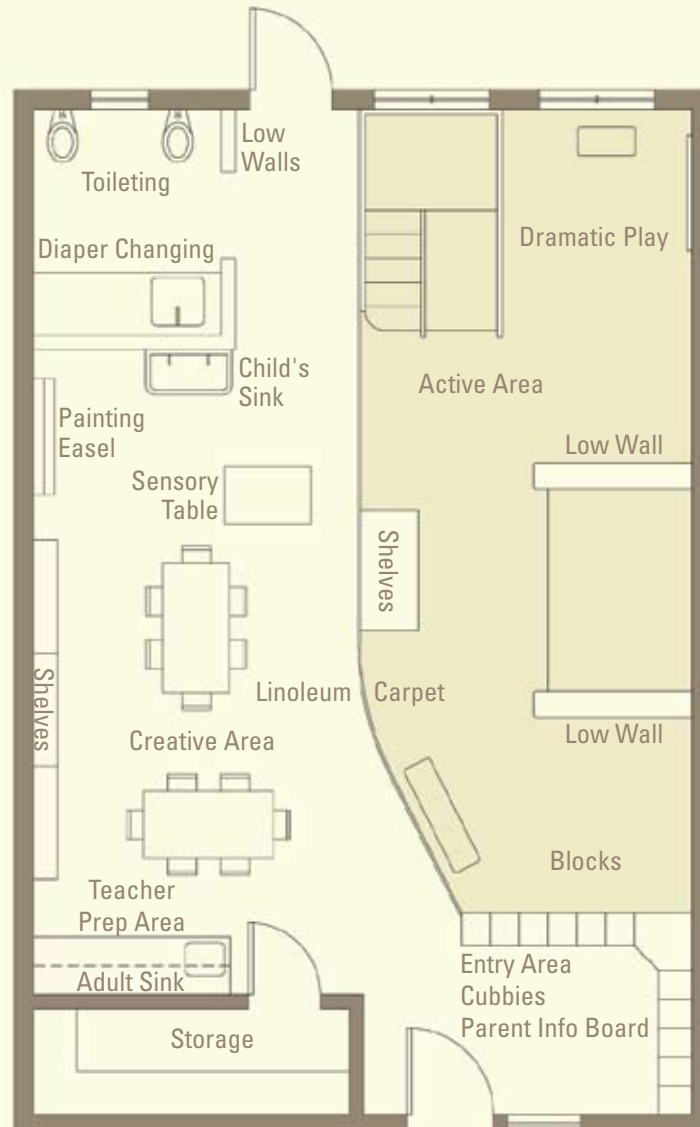
**Diapering and Hand Washing** (*linoleum or wood flooring*)

- Diaper-changing table (quantity to be verified with operator)
- One adult hand-washing sink (this sink must be in addition to, and separate from, the teacher’s food-prep sink)
- One children’s hand-washing sink; requires mixing valves to limit the maximum water temperature as required by licensing. Sink height should be 16 inches above the finished floor

**Storage**

- Lockable storage for staff’s personal items
- Storage for curriculum materials (books, puzzles, etc.), paper, art supplies and snacks
- Adequate storage above diaper-changing tables (one cubby for each child’s diapers, wipes, diaper creams)





**Older Toddler Room**

### Older Toddler Group (24 to 36 months)

Toddlers are busy children, so they need open space to move and experiment with a variety of toys and equipment. The layout of the room should be designed to encourage and support independence while strengthening social skills. It should be organized in a way that allows children to move through the room without disrupting other children playing. Materials and developmentally appropriate toys should be easily accessible to children on open shelves. Furniture must be appropriately sized for the age group.





## Toddler Room Activity Area Checklist

### Entry (*linoleum or wood flooring*)

- One cubby for each child's personal belongings (backpack, extra clothes, coat, blanket, lunch bag, art work, etc.)
- Parent information board and sign-in sheet

### Active Area (*carpet flooring*)

- Dramatic play: dress-up clothes and costumes, housekeeping furniture and toys, mirrors, baby dolls
- Gross motor: loft, ramp/slide, shallow steps, foam shapes, balls, tunnel, push and pull toys, rocking and riding toys
- Music and movement: simple rhythm instruments, space for dancing

### Quiet Area (*carpet flooring*)

- Reading: bookshelf; low, soft seating; pillows
- Listening to stories or soft music
- Resting, hanging out
- Manipulatives: blocks, puzzles, toys and games
- Napping: cots and mats are usually placed around the room (appropriate storage for sleeping cots/mats must be provided in the classroom – cots 40"x23"x6")

### Creative Play Area (*linoleum or wood flooring*)

- Table and chairs: meals and snacks, cooking projects, art activities, play dough
- Sensory table: water and sand play
- Painting: floor easels





**Teacher Prep Area** (*linoleum or wood flooring*)

- Food- and activity-prep area – adult-height counter, base cabinets and upper cabinets for food and utensil storage, sink, microwave, and small refrigerator
- Space to warm bottles.
- Microwave space with electrical outlet.
- An area to chart and file information on children’s eating, napping and toileting patterns.



### Diapering, Toileting and Hand-Washing (*tile*)

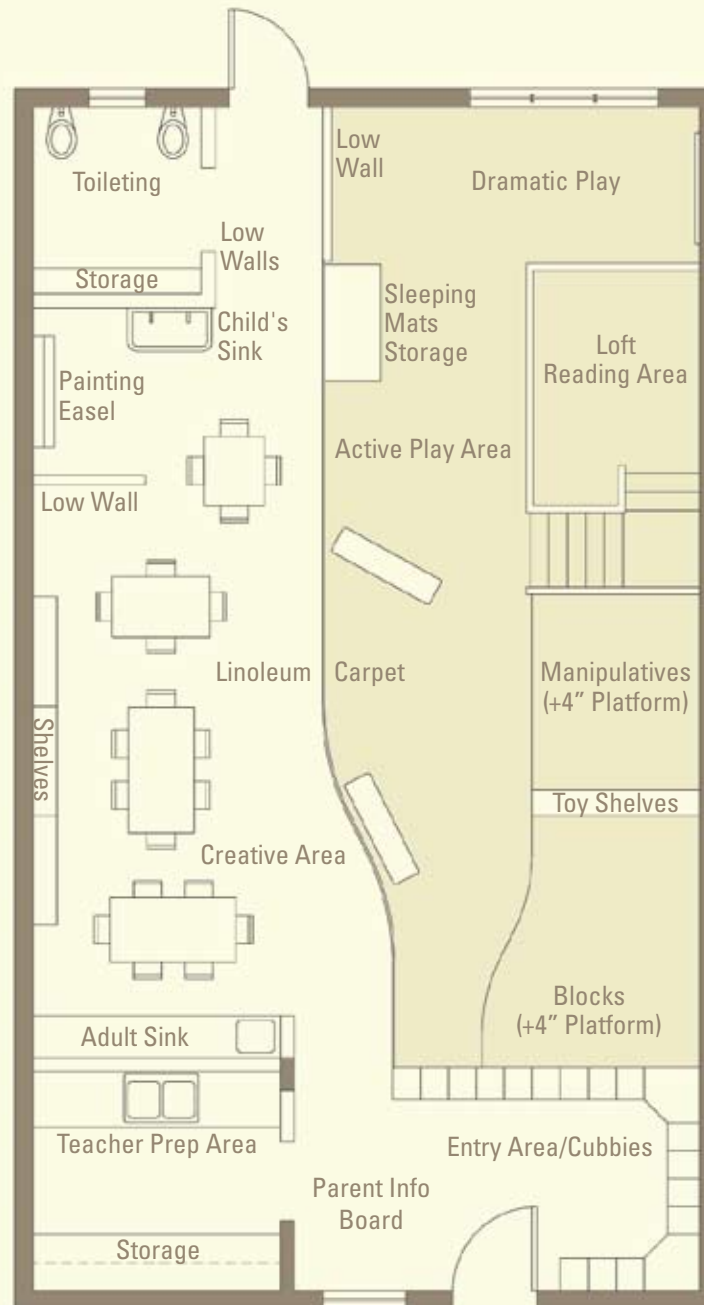
- Diaper changing table (quantity to be verified with operator)
- One adult hand-washing sink (this sink must be in addition to, and separate from, the teacher's food-prep sink), storage for each child's diapers, wipes, creams, etc.
- One toilet and one hand-washing sink are required per every fifteen children
- Toilets must be accessible and visible from the classroom
- Toilets must be child-size
- Toilet heights should be 11 inches above the finished floor
- Partitions are not necessary between children's toilets
- Sink heights for toddlers should be 18 inches above the finished floor
- Children's sinks require mixing valves to limit the maximum water temperature required by licensing
- Cup- and paper-towel dispenser adjacent to children's sinks

### Storage

- Lockable storage for staff's personal items
- Storage for curriculum materials (books, puzzles, etc.), paper, art supplies, seasonal items, prep tools such as laminators, and snacks
- Adequate storage above diaper-changing tables (one cubby for each child's diapers, wipes, diaper creams)
- Storage for sleeping cots or mats, one per child. Space must be allocated for cot storage (a typical cot is 24 inches x 54 inches x 6 inches high). If stored in the classroom, cots are counted as an obstruction and cannot be included as part of the usable space calculation for capacity. Cot storage must be easy to access on a daily basis

**Preschool Group (48-60 months)**

A preschool room should be designed for children to engage in small and large group activities while supporting the development of their independent and self-help skills. Distinct and well-defined activity areas (e.g., reading/literacy, science and discovery, blocks), as defined by placement of furniture and equipment, allow for self-directed guidance and facilitate the flow of activity within the room.



*Preschool Room*



## Preschool Room Activity Area Checklist

### Entry (*linoleum or wood flooring*)

- ❑ One cubby for each child's personal belongings (backpack, extra clothes, coat, blanket, lunch bag, art work, etc.)
- ❑ Parent information board and sign-in sheet
- ❑ Transition space: saying good-bye to parents, hello to friends

### Active Area (*carpet flooring*)

- ❑ Dramatic play: dress-up clothes and costumes, housekeeping furniture and toys, mirrors
- ❑ Gross motor: loft with stairs and platform
- ❑ Music and movement: simple rhythm instruments, space for dancing
- ❑ Puppetry and theater
- ❑ Large unit blocks

### Quiet Area (*carpet flooring*)

- ❑ Reading: bookshelf, low, soft seating
- ❑ Listening to stories or soft music – soft, cozy area
- ❑ Manipulatives: blocks, puzzles, toys and games
- ❑ Small table and chairs: writing, drawing
- ❑ Napping: cots and mats are usually placed around the room (appropriate storage for sleeping cots/mats must be provided in the classroom – cots 52"x23"x6")

### Creative Play Area (*linoleum or wood flooring*)

- ❑ Table and chairs: meals and snacks, cooking projects, art activities, play dough
- ❑ Sensory table: water and sand play
- ❑ Painting: floor easels
- ❑ Science and nature activities

**Teacher Prep Area** (*linoleum or wood flooring*)

- Food- and activity-prep area – adult-height counter, base cabinets and upper cabinets for food and utensil storage, sink, microwave, and small refrigerator

**Toileting and Hand-Washing** (*linoleum, tile, or wood flooring*)

- One toilet and one hand-washing sink are required for every fifteen children
- Toilets must be accessible and visible from the classroom
- Toilets must be child-size
- Toilet heights should be 11 inches above the finished floor
- Partitions are not necessary between children's toilets
- Sink heights for preschoolers should be 22 inches above the finished floor
- Children's sinks require mixing valves to limit the maximum water temperature required by licensing
- Cup- and paper-towel dispenser adjacent to children's sinks

**Storage**

- Lockable storage for staff's personal items
- Storage for curriculum materials (books, puzzles, etc.), paper, art supplies, seasonal items, prep tools such as laminators, and snacks
- Storage for sleeping cots or mats, one per child. Space must be allocated for cot storage (a typical cot is 24 inches x 54 inches x 6 inches high). If stored in the classroom, cots are counted as an obstruction and cannot be included as part of the usable space calculation for capacity. Cot storage must be easy to access on a daily basis.





## ORIENTATION AND SHAPE OF ROOMS

Room scale, proportion and the physical layout of furniture and equipment have significant effects on the behavior and development of young children. From the overall size of a room to the height of ceilings and scale of furniture, children need environments that support their different stages of development. Quality child care spaces allow children to explore safely, play actively and quietly, and engage in a variety of activities throughout the day while supporting their emotional well-being, stimulating their senses, and challenging their motor skills. A poorly configured room can create huge challenges for the children and staff using the space, and a well-organized and efficient layout will benefit everyone.

- A rectangular-shaped classroom with a 1:2 proportion of width to length and a minimum ceiling height of 10 feet is the ideal configuration.
- Avoid rooms with sharp or acute angles that limit program activity flexibility.
- Avoid L-shaped rooms, because it is difficult for adults to supervise children around corners.
- Avoid long, narrow rooms, which are difficult spaces in which to lay out activity areas.
- Use furniture, low walls and platforms (3 to 4 inches high covered in carpet) to sculpt the classroom into defined activity areas that encourage individual and small-group play. These activity areas can provide private and semi-private environments that are critical to the development of the young child's personal identity.
- Try to avoid structural columns or shear walls in the middle of classrooms, as they take away valuable square footage and create safety and supervision challenges.

## COLOR

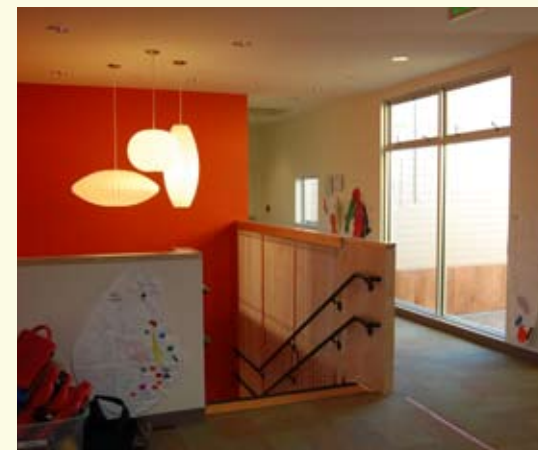
Color can also have a significant impact on children's behavior and attention skills. It is common to see bright primary color schemes in spaces designed for young children. While bright colors can initially exude a sense of joy and fun, they can often be over-stimulating for the children and adults who are

spending eight to ten hours a day in these environments. When thinking about color palettes for early childhood spaces, it is appropriate to use warm, natural colors and materials for walls, floors and furnishings. Colorful toys, art work and children's clothing provide an abundance of color that stands out on warm, neutral backgrounds, helping children focus and visually discriminate objects from backgrounds.

## LIGHTING

Appropriate lighting, natural and artificial, is often overlooked in child care and early education spaces. In general, the lighting design should make the classrooms and common spaces of the facility feel and look like a home. Lighting that is either too bright or too dim strains the eyes, harming visual development and leading to fatigue and crankiness, which has a huge impact on children and staff who are spending eight to ten hours a day in a child care space. Visual perception directly affects a child's ability to learn and interact with his/her environment, and therefore lighting should be designed with careful consideration to the specific activities taking place in the classrooms.

- Provide as much natural light as possible – plenty of windows in the classrooms with southern exposure, if possible.
- Windows in classrooms and common areas should be installed with low sill heights to allow children to see outside.
- Use full-spectrum artificial lighting to supplement natural light.
- Avoid bright florescent ceiling lights, which make a space feel more like a hospital or institution and do not provide adequate lighting to low surfaces where children typically play.
- Use incandescent lighting rather than fluorescent; the quality of light contributes to a child's visual development.
- Use dimmer switches to control light levels in different areas of the classroom.
- Task-oriented lighting should be provided at the floor level, where children are often playing, and at work surfaces, such as a tables and painting easels.
- Use pendant or track lighting to create pools of light in designated activity area.





## MATERIALS AND FINISHES

The choice of building materials is critical because many products release volatile organic compounds (VOCs), which comprise thousands of synthetic and natural chemicals emitted by a wide array of materials. Many interior environments with demanding functions require high performance. It is critical to select sustainable interior and exterior materials and finishes that will not pose a health risk to the children and staff using the facility, are durable, and are easy to maintain and clean.

A variety of finishes – soft, hard, absorbent and waterproof, including textures that complement various activities, and help denote different use areas – should be used in classrooms.



### Floor Materials

- Use sustainable building materials, finishes and adhesives to protect children from harmful off-gassing and toxins.
- Use materials with good performance, durability, appearance and cost, such as linoleum or wood flooring.
- Use linoleum sheet flooring or tiles with welded seams in program areas that require non-absorbent resilient surfaces (eating, diapering and creative play areas). Linoleum is a healthy and sustainable material. The bactericidal properties of linoleum prevent micro-organisms from multiplying. Even when floor finish is applied to the product, the continued oxidation of the linseed oil will continue to generate this bactericidal effect.
- Avoid Vinyl Composite Tile (VCT) if possible. VCT, which is the cheapest and most widely available floor covering, is the base-grade commercial resilient flooring used in the industry today. This is driven by, first, cost concerns rather than cost of ownership or sustainability. VCT requires a high chemical usage for cleaning and maintenance and has lower health and cost performance than linoleum.
- Use ceramic tiles in toilet areas and bathrooms.
- Wood Flooring: Bamboo or other Certified Wood Flooring with the Forest Stewardship Council (FSC) stamp of approval. FSC is a nonprofit group that





promotes environmentally responsible forestry practices.

- Carpet, a good absorber of sound and impact, yields a surface associated with comfort. However, its absorbent nature also makes it a good medium for holding moisture and harboring dirt, mold and dust mites. Therefore, carpet used in child care and early education facilities, where children spend a significant amount of time playing on the floor, must be carefully selected.
  - Use dense loop, low pile, antimicrobial carpet that is glued down with nontoxic adhesives.
  - Use carpet tiles in smaller activity areas, so they can be easily replaced when worn or soiled.
  - Install sheet carpet in larger areas such as infant rooms and nap rooms.
  - Carpet durability must hold up to frequent cleaning.
  - Carpet should be a warm, natural color that provides a neutral background for children's toys, and that doesn't show dirt easily.
  - Consideration should be given to floor temperature, especially in infant and toddler rooms, because these children spend the majority of their time playing on or close to the floor (use radiant floor heating when appropriate).

### Paint

Indoor air is three times more polluted than outdoor air and, according to the EPA, is considered one of the top five hazards to human health. Paints and finishes are among the leading causes. Paints and finishes release low-level toxic emissions into the air for years after application. The source of these toxins is a variety of VOCs. Most paint manufacturers now produce one or more non-VOC varieties. These new paints are durable, cost-effective and less harmful to human and environmental health.

Use Zero-VOC or Low-VOC paint with an eggshell finish. Benefits of using Low-VOC paint include:

- Health: Reduced toxins benefit everyone, including those with allergies and chemical sensitivities.





- Environment: Reduces landfill, groundwater and ozone-depleting contaminants.
- Effective: Low-VOC products perform well in terms of coverage (covering flaws on previous coats).
- Water-based: Easy cleanup with soap and warm water.
- Little or no hazardous fumes: Low odor during application; no odor once cured.
- No off-gassing: Painted areas can be occupied sooner, with no odor complaints.
- Not deemed hazardous waste: Cleanup and disposal are greatly simplified.

### Ceiling Materials

Use acoustical ceiling panels and suspension systems with zero or low formaldehyde emissions and antimicrobial treatments to counter mold.



The presence of mold, mildew and other microbes, which can cause problems ranging from allergic reactions to illness, is a symptom of a larger construction or maintenance problem that has allowed unwanted moisture to accumulate. A sound mold strategy begins with good building design, careful detailing and proper maintenance.

### FURNITURE AND EQUIPMENT *(see sample classroom layouts)*

#### Community Playthings® - Recommended Furniture Sizes and Use

It comes down to a simple formula – comfort equals concentration and contentment. If children have furniture shaped to support their bodies' best posture, they can stay focused on the work, play activity, or meal in front of them.



The chart below is a guide based on international averages for children's size by age. It is important to recognize that there is great variation within one year, and everyone is growing fast. You may wish to provide chairs in several heights, so you can fit each child appropriately and adapt as time goes on.

**Chair Seat Height** is the most important calculation you can make. If a child's feet are flat on the floor and his knees are bent at a 90 degree angle, you have the correct chair for ergonomic, comfortable seating. The chart below gives you chair height recommendations by age.

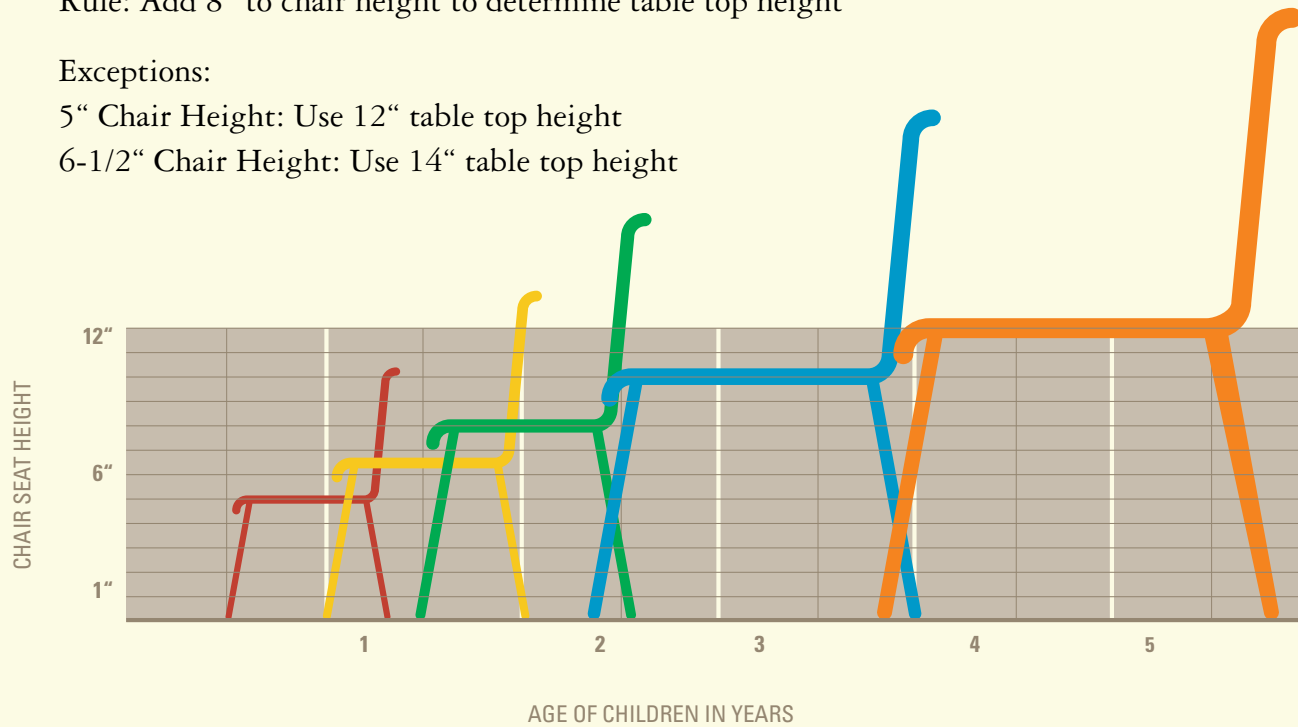
**Table Height:** table tops should be 8 inches above the chair seat, so the table and chair can work together for a child’s good posture. (There’s a little leeway for toddlers – see notes below.)

Rule: Add 8” to chair height to determine table top height

Exceptions:

5” Chair Height: Use 12” table top height

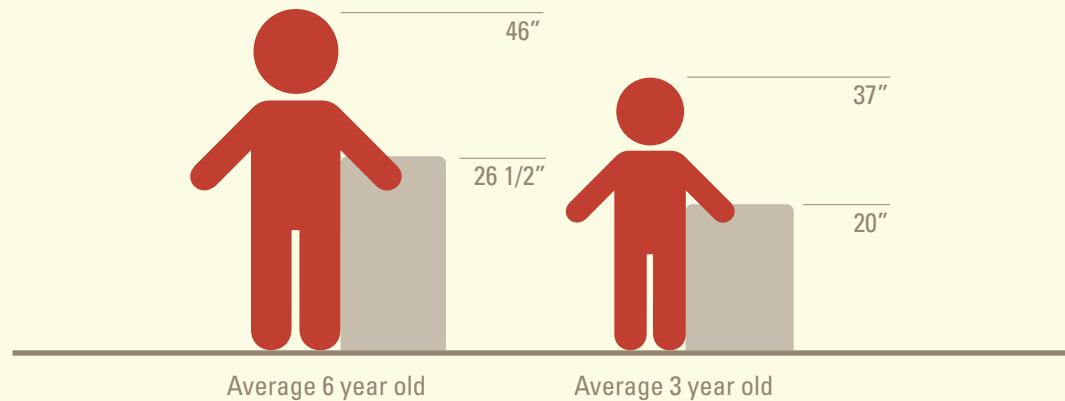
6-1/2” Chair Height: Use 14” table top height



SEAT HEIGHT	8"	10"	12"	14"	16"	ADULT
TABLE HEIGHT	16"	18"	20"	22"	24"	26-30"
2 Year Olds	60%	40%				
3 Year Olds		100%				
4 Year Olds		40%	60%			
5 Year Olds			100%			
6 Year Olds			50%	50%		

*Average heights used by age of children*

*Child counter heights – for an average 3 year old and an average 6 year old*



- Appropriate child-sized furniture: tables, chairs, play lofts, toy shelves, bookshelves, sensory table, dramatic play.
- If possible, select furniture that is made of natural wood.
- Avoid acute/sharp 90-degree angles on outside corners projecting into space.
- Provide 1/2-inch radius or beveled edge on all outside corners of constructed features.
- Infant and young toddler rooms require one crib for each infant.
- Older toddler and preschool rooms require one sleeping cot or mat for each child.

**OFFICES AND ADMINISTRATIVE SPACE**

Administration's wide variety of activities requires organization and movement of materials, staff and visitors for efficiency, comfort and security. Administrative space design considerations include:

- Information/reception area for parents and visitors, and "friendly face" at the front door for greeting children
- Director's office
- Program coordinator's office
- Resource center for parents and staff, providing opportunities for interaction, information sharing, planning and community liaison activities

- Resource library for curriculum, training and instructional materials, with space for work, display and storage
- Administrative space or office for clerical support
- “Sick room“ or area to isolate, monitor and prepare a sick child for parent pick-up
- Support services identifying meal policy, parent- or center-provided items, building systems, maintenance and kitchen/laundry guidelines

#### Entrance /Lobby Area

- Good visibility – area for a full-time staff member to easily supervise the entrance and lobby – safety and security
- A waiting/transition area for parents and children to sit comfortably – avoid overcrowding (determine how many people the waiting area should be able to accommodate)
- A vestibule area with storage for umbrellas, to reduce the amount of water and mud tracked into the center on rainy and snowy days
- Access to a bathroom for parents and visitors without having to walk through the center
- Designated area or storage for strollers (the operator should advise on how many strollers will need to be accommodated)

#### Offices

- Provide adequate office space for all staff, including individual desk areas with computers
- Director and supervisor’s offices should accommodate space for three to four people to meet privately
- Nurse’s office and sick room
- Provide appropriate storage space in each office (files and personal belongings)
- Access to natural light and air





## SUPPORT AREAS

### Staff Lounge/Resource Room

- Staff lounge that allows for privacy, personal business, refreshment and change of scene, with phone and intercom connection to classroom(s)
- Space for table and chairs for up to eight people at one time
- Resource area with books and training materials
- Computer terminal
- Cabinets or shelves to store resource materials
- Counter with sink, microwave and small refrigerator
- A comfortable couch
- Adjacent to an adult bathroom



### Conference/Multipurpose Rooms

- One large conference room to accommodate up to thirty adults
- Storage for tables and chairs
- Storage for resource and training materials
- Two computer terminals
- Small kitchenette with sink, microwave and small refrigerator
- One small meeting room to accommodate six people
- Private space for parent/teacher phone conferences, district meetings, therapist meetings, etc.
- Storage for gross motor equipment (balls, wheel toys, parachute)
- Large enough to accommodate 120 people for meetings and conferences
- Storage for tables and chairs – twenty chairs and fifteen rectangular tables
- May also be used for music and movement activities



### Nurse's Office/Sick Bay

- Counter and cabinets for first aid emergency records and supplies
- Work surface for computer and paperwork
- Small bed for a sick child
- Sink and refrigerator

### Administrative Area/Copy and File Room

- All copy machines and file cabinets located in one room
- Counter/work surface for staff to organize papers, prepare materials and look through files
- Adjacent to the reception area and director's offices
- Copy machine
- Fax machine
- Cabinet storage for paper and other office supplies
- Adequate number of file cabinets to accommodate children's records (verify number with the operator)
- Space for a paper shredder
- Space for large garbage cans and recycling bins



### Adult Toilets

The building code requires adult toilets for the use of the child care staff, and specifies the required number of fixtures per number of adults in the facility – roughly one toilet and one sink per every ten adults.

- Toilet rooms must be barrier-free
- Provide both gender-specific toilet rooms and unisex bathrooms
- Locate for convenient access by all staff from their classrooms and offices
- At least one of the adult toilets should be located close to the entry for use by parents and other visitors to the center



### Laundry Room

Licensed centers are required to maintain access to laundry facilities capable of adequately sanitizing contaminated laundry, either on the premises or off-site. (Most operators prefer washers and dryers on-site, especially if they have an infant and toddler program.)

- A high-volume, energy-efficient washer and dryer located in a place that is easy to access for maintenance and repairs (verify number of appliances with the operator); units may be side-by-side or stacked.
- Counter surface for folding and shelving for supplies
- Washable and moisture-impervious flooring





- Floor drain
- Well-ventilated
- Inaccessible to children (lockable door)

#### Kitchen/Food Distribution *(if program provides hot meals)*

This program assumes meals are prepared on-site. (The design criteria will be different for programs that do not prepare food on-site, and/or if food is delivered by a catering service.)

- Design the kitchen to commercial kitchen specifications, including the exhaust system
- Locate close to an exterior door for easy delivery of supplies and removal of trash
- Tables and chairs for a minimum of two cooks/kitchen staff
- Storage space for a minimum of five food carts
- Pantry storage for dry goods and paper products
- One commercial range and oven (verify size needed with kitchen staff)
- A high-volume commercial grade dishwasher with a heat sanitizer element (located in a place that is easy to access for maintenance and repairs)
- Cold storage – refrigerator and freezer (space for a minimum of two full-size refrigerators)
- A counter where small groups of children can safely observe and participate in cooking activities
- Kitchen Storage
  - Close to a receiving entrance
  - Sufficient space for storage of perishable foods
  - Secure, lockable storage for medical supplies, kitchen cleaning materials and equipment, and other hazardous substances
  - Temporary holding space for garbage and recycling bins
  - Designated area for recyclable materials
  - Space for covered waste receptacles





### General Storage

- Office supplies (paper goods)
- Bulk supplies for the center
- Strollers
- Shared curriculum materials
- Audio-visual and electronic equipment
- Bathroom supplies
- Seasonal supplies (decorations)
- Bulk kitchen supplies (food and paper goods)
- Cleaning supplies



## DESIGN CRITERIA FOR EXTERIOR SPACES

### PLAYYARD

Play yards can be considered outdoor classrooms, organized like indoor space and providing opportunities for a variety of play and learning areas and activities.

Outdoor design considerations include:

- Direct access to indoor classrooms, bathrooms and drinking fountain
- Adequate sun, shade and protection from wind
- Play areas and equipment with distinct characteristics such as natural and man-made, sheltered and open, dry and wet, planned and open-ended, hard and soft, flat and raised
- Variety of play surfaces, including grassy areas, sand, soil and water for digging and mud play; firm resilient surfaces for wheel toys and balls
- Area for gardening activities
- Good drainage, which keeps all surfaces useable
- Three-dimensional use of space with level changes, platforms, tunnels and ramps that incorporate a variety of spatial relationships (through, over and under, up and down)
- Space and equipment organized so children can play and staff can provide the appropriate level of supervision, especially at entry and exits and near climbing structures





- Ample and accessible storage for outdoor equipment that can be locked and secured during off-hours (wheel toys, balls, sand toys, etc.)
- Access to water – hose-bib connection to accommodate water play and gardening activities
- Trough sink for hand-washing and outdoor art activities
- All play equipment must be in compliance with licensing and Department of Health regulations
- Climbing structure
- Benches for adult and child seating
- All screws covered and corners rounded
- Vertical surfaces for writing and art activities (outdoor easels and chalk boards)



## SITE CONSIDERATIONS

### Parking/Vehicles

- Provide parking spaces for visitors and parents as per local zoning regulations
- A loading zone should be designated in front of the building near the entrance for parental drop-off and pick-up in the mornings and afternoons
- Provide a service driveway for delivery of food, supplies, trash and recycling

### Landscaping

- Use vegetation to screen undesired views and services areas
- Use vegetation to provide shade, block wind and reduce summer solar gain
- Select nontoxic plants; avoid plants with seeds that could present a choking hazard



## INFRASTRUCTURE CONSIDERATIONS

### Security

- Exterior doors remain locked at all times; visitors must be buzzed in
- Exterior lights with protective grills installed at all entrances
- Director's office and receptionists able to monitor the premises with video technology
- An intercom system at all entryways





- Window grills or other appropriate safety measures installed at operable windows

#### Fire Alarm Systems and Fire Suppression

- Sprinkler systems are required in a number of different circumstances – for example, when children occupy space above the first story. Verify requirements with both the State Fire Marshal and the local building department. If sprinklers are required, ensure that adequate coverage is provided to all areas, including storage rooms and closets.
- Fire alarm systems, both visual and auditory, are required in all early childhood facilities.
- Install heat detectors, smoke alarms and carbon monoxide detectors in locations required by the local building code and State Fire Marshal.
- Supply and install fire extinguishers.
- Prepare and post a fire safety and emergency plan (monthly fire – and earthquake in California – drills are required in all early childhood facilities)
- A safety plan must be submitted to the local fire department for approval

#### Telephones

Determine the locations of telephone, security and data/internet outlets early in the design process and ensure that the work is both coordinated and included in the contract.

- Telephones in all rooms of the facility that are occupied by children, for use in an emergency
- Intercoms in all rooms occupied by children
- Phones located in places that are easy for staff to use while supervising children

#### Computer Technology

- Equip the facility with wireless and broadband to allow technology to be fully utilized in all classrooms, offices, and support areas
- Provide computers in all offices, staff workrooms and/or resource centers
- Install dedicated circuits or special wiring for computers in the preschool classrooms

### Mechanical Systems: Heating, Cooling, Ventilation

Though child care and early education facilities require efficient temperature control, adequate lighting and ventilation, and excellent indoor air quality to avoid exacerbating the already-high levels of asthma among young children, they are also typically strapped for funds. Daylighting, high-performance glass, renewable energy systems and adequate ventilation can be cost-neutral, yet have a significant impact on both indoor air quality (IAQ) and indoor environmental quality (IEQ).

All child care and early education programs require space heating equipment. Depending upon weather conditions in the area, cooling equipment may also be desirable. The location should provide easy access for maintenance and repair, but the equipment should be entirely inaccessible to the children.

While fresh air through open windows is desirable, there may be situations in which mechanical ventilation provides fresh air for the entire facility. Air-handling equipment provides the opportunity to improve the quality of indoor air through filtration, but can also easily spread germs between classrooms. Ventilation requirements are governed by the Uniform Mechanical Code, and should be verified by the architect.

- Each room should be equipped with individual controls for heating and cooling (central air conditioning may be required, depending on the local climate).
- Provide as much passive heating and cooling as possible in the form of natural ventilation (operable windows), insulation and low-emissivity glass.
- Provide good air circulation close to the floor, where children often play.
- Locate air intakes and returns away from streets with heavy traffic and garbage storage areas.
- Use ceiling fans in children's classrooms and multipurpose rooms, especially if rooms do not have operable windows.
- Minimize the need for recirculated air to reduce the spread of germs and illness.
- Look for quiet mechanical systems to reduce noise pollution classrooms.





- Mechanical exhaust is required for laundry rooms, mop storage areas, and diaper changing and toilet areas.
- Heat delivery devices should be sufficiently protected or sited so that children are not exposed to surfaces that are hot to touch, or hot air blowing into their faces. Portable space heaters are not allowed.
- Space needs to be allocated for mechanical equipment on the rooftop, in a furnace room or in a basement.

### Plumbing/Water Heaters

Child care and early education facilities require water to be available at various temperatures, depending on the use. Consider installing two hot water heaters, one set to the recommended temperature for fixtures accessible to children, and another providing the higher sanitizing temperature required for laundry and dish-washing. Other options include using mixing valves at appropriate locations, or purchasing appliances with internal heaters. Child care and early education facilities require many plumbing fixtures throughout the facility. A typical toddler or preschool classroom will have a minimum of one adult sink, two children's sinks and two children's toilets.

- Child-height sinks and toilets should be adjacent and easily accessible from all classrooms and outdoor play yards.
- Infant and young toddler rooms require a diaper-changing area with an adult-height sink (this sink is in addition to, and separate from, the food-prep sink).
- All classrooms should have an adult-height sink and counter for art projects, food prep and clean-up after activities.
- An appropriate number of adult lavatories and sinks.
- Outdoor hose bibs for gardening and water play activities.
- Outdoor trough sink for children's hand washing and outdoor art activities.
- Drinking fountain (interior and exterior locations) – follow licensing requirements for the types of drinking fountains that are allowed.

### Electrical

- Locate electrical outlets in sufficient number to prevent unnecessary use of extension cords for equipment and fixtures.
- Install safety coverings on all electrical outlets not in use.
- Outlets and switches must be out of reach of children as much as possible.
- Coordinate security systems: camera/monitor, auto door latches/openers, intercom.
- Elevator (if applicable) must be able to handle frequent use.

### Artificial Lighting

- Shield all light bulbs and tubes in child-accessible areas and food preparation areas for safety in the event of breakage.
- Equip all classrooms with dimmer switches.
- Provide ability to control lighting in different areas of the classroom (task lighting versus general overhead lighting),
- Electric lighting, whether general ambient or task-specific, should be warm, natural and homelike. Avoid suspended ceilings with 2 x 2 and 2 x 4 fluorescent grids wherever possible; they are institutional and create unwanted glare.
- Use full-spectrum incandescent or fluorescent and high-color-rendering triphosphor bulbs wherever possible, especially in children's rooms and places where people gather.
- Provide adequate exterior lighting at the center's entry and from the center to parking area.

### Acoustics

Noise levels in classrooms and play spaces are always a concern in child care centers. The architect, along with acoustical engineers, needs to consider design options that help reduce sound transmission within and between rooms.

- Pay attention to interior acoustical engineering between classrooms, and classrooms and other spaces; consider noise transmission through wall, floor and ceiling assemblies.





- Wall types with increased sound transmission class ratings (STC) should be considered when sound control is important. A minimum 55 STC between a sleep room (if provided in infant rooms) and the balance of the space is recommended, and a 50 STC rating for all other spaces that are intended to be separated from other rooms.
- Building envelope should be designed to block and absorb sound; consider exterior sources of noise pollution such as streets with heavy traffic.
- Windows and doors should be gasketed and sealed.
- Full height walls with insulation are recommended where it is important to isolate noise.
- Mechanical ductwork should be designed to limit transfer of sound between areas.
- Sound-moderating acoustic tile ceilings and absorbent wall finishes can reduce noise impact.
- In existing buildings, install suspended ceiling grids and/or sound attenuation panels.
- Create quiet and intimate areas within rooms by varying ceiling heights.

#### Janitorial Space

- Closet with utility and mop sink on each floor of the building
- Utility closet with floor drain and proper ventilation
- Storage closet for cleaning supplies and paper goods

#### Trash and Recycling

- Trash area to accommodate daily trash pick-up from the back of the building
- Site adjacent to service entrance and driveway
- Additional space provided in the trash area for recyclables



## SPECIAL EDUCATION/EARLY INTERVENTION DESIGN CONSIDERATIONS

ABC's Children's Center also has a special education/early intervention program for infants/toddlers and preschoolers with developmental delays and disabilities. The staff is committed to fully integrating children receiving special education and early intervention services into the daily life of the classroom. The teachers work closely with the therapy staff, the family-support coordinator and the director to ensure that the day is structured to address the unique needs of each child. The educational goals and therapy services designated by the children's Individual Education Program and Individual Family Service Plan are incorporated into their daily activities. Physical, occupational, speech and language therapists, a psychologist, and a social worker closely interact with classroom teachers, helping them implement formal therapy goals and developing additional goals that emerge from a child's daily classroom activities. This approach involves constant communication among the staff, therapists and parents. Communication is facilitated through:

- Weekly clinical meetings (therapist/teaching staff)
- Team meetings (therapists/parents/teaching staff)
- Communication books
- Phone conferences
- Special education parent meetings
- Group parent meetings

Each child's program is tailored to his or her specific needs and may include: play-based assessment, evaluations (as necessary), parent involvement and conferences, written reports and updates, occupational therapy, physical therapy, speech/language therapy, play therapy, parent counseling and consultation.

The following space considerations are in addition to the space requirements listed in the first part of this document.

**Special Education - Classroom Summary Table**

ROOM #	TYPE OF ROOM	AGE GROUP	GROUP SIZE *	NUMBER OF STAFF*	RECOMMENDED CLASSROOM SIZE
Rm 8	Preschool Special Education	36 to 60 months	12	3 (1 : 4)	840 sq. ft.
Rm 9	Preschool Special Education	36 to 60 months	12	3 (1 : 4)	840 sq. ft.
Rm 10	Applied Behavioral Analysis (ABA) Preschool Special Education	36 to 60 months	8	4 (1 : 2)	800 sq. ft.
<b>TOTAL</b>					<b>2,480 sq.ft.</b>
			<i>* number of children in the classroom</i>	<i>* (adult: child ratio)</i>	

*Note: The recommended square footage listed for classrooms includes area for children's bathrooms. It is important to note that Special Ed classrooms accommodate fewer children and more adults, and often need more space than a regular classroom.*

**Summary of Spaces for Special Education Program**

ROOM #	TYPE OF ROOM	ROOM AREA*
<b>CLASSROOMS</b>		
Rm 8	Preschool Special Education – 12 children	840 sq. ft.
Rm 9	Preschool Special Education – 12 children	840 sq. ft.
Rm 10	Applied Behavioral Analysis (ABA) Preschool Special Education – 8 children	800 sq. ft.
<b>OFFICES</b>		
Office 7	Early Intervention Coordinator / Social Worker	90 sq. ft.
Office 8	Music Therapist	80 sq. ft.
Office 9	OT / PT / Speech Supervisor	80 sq. ft.
Office 10	Speech Therapists	140 sq. ft.
Office 11	Occupational Therapists	140 sq. ft.
Office 12	Physical Therapists	140 sq. ft.
Office 13	Behavior Analysis	80 sq. ft.
Office 14	Education Evaluator	80 sq. ft.
<b>THERAPY ROOMS</b>		
OT - 1	Occupational Therapy Gym and Storage	550 sq. ft.
OT - 2	Occupational Therapy Private Treatment Rooms (2)	180 sq. ft.
PT - 1	Physical Therapy Gym and Storage	550 sq. ft.
ST - 1	Speech Therapy Private Treatment Rooms (2)	160 sq. ft.
MT - 1	Music Therapy Treatment Rooms (2)	200 sq. ft.
Play Therapy - 1	Counseling / Play Therapy (adj. to Social Workers)	300 sq. ft.
EC - 1	Evaluation Room (4 adults and 1 child)	450 sq. ft.
<b>TOTAL ADDITIONAL AREA FOR SPECIAL EDUCATION PROGRAMMING</b>		<b>5,700 sq.ft.</b>



## GENERAL CRITERIA

- Reduce the number of stairways and other obstacles in circulation.
- Use one-way mirrors in therapy rooms.
- Provide more storage space for therapy materials, special equipment, and additional files and records.
- Increase wheelchair accessibility.
- Create two to three separate gyms that accommodate the children's needs: physical therapy, occupational therapy, sensory integration.
- Therapy rooms should be painted in soft, light colors to limit stimuli.
- Provide as many private offices for therapists as possible.



## OFFICES AND MEETING ROOMS

### Supervisor Offices

- Each supervisor should have his/her own office.
- Provide enough space for small meetings of four to six people.
- Site close to therapists' offices

### Occupational Therapy (OT) Offices

- Individual desks, computer terminals, file cabinets and storage space for two therapists
- Two private treatment rooms adjacent to OT offices and gym
- Private treatment rooms have visual connection to the OT gym through interior windows
- Private treatment rooms block noise from the OT gym



### Physical Therapy (PT) Offices

- Individual desks, computer terminals, file cabinets and storage space for two therapists
- One private treatment room adjacent to PT offices and gym
- Private treatment rooms have visual connection to the PT gym through interior windows

### Speech Therapy Offices

- Individual desks, computer terminals, file cabinets and storage space for two therapists.
- Two private treatment rooms adjacent to ST offices and gym.
- Private treatment rooms should accommodate one adult and two children: two child-size chairs, one child-size table, one adult-size chair and work surface, storage for therapy materials and files.
- Private treatment rooms should be soundproof.

### Social Workers and Psychologist

- Private offices must be provided for two social workers and psychologists: desks, computer terminals and file cabinets for children's records
- Storage space for therapy materials and personal belongings
- Offices must provide enough space for two people to meet comfortably.
- One private meeting space for parents: three to four people
- Play therapy room adjacent to classrooms

### Applied Behavior Analysis (ABA) within a classroom

These classrooms incorporate small designated-assessment areas that are separated from other classroom activities either by low walls or full walls with interior windows. The assessment areas are acoustically separate from the rest of the classroom to reduce noise distractions.

- One child-size table and chair in each assessment area
- One adult-size chair in each assessment area
- File cabinet for children's records and assessment materials
- Shelves or cabinets for assessment materials and supplies

### THERAPY GYMS

#### Occupational Therapy Gym

- A maximum of two children and two adults should be able to occupy the space at any given time.
- Adjacent to OT offices and treatment rooms
- Storage for files, materials, equipment, diapers, extra clothes and strollers



- Adult-height counter and cabinets with sink
- Storage for children's files and charts
- Acoustically treated surfaces to reduce noise
- Energy-efficient lights on dimmer switches
- Plexiglas mirrors on a portion of the wall surfaces
- Good ventilation

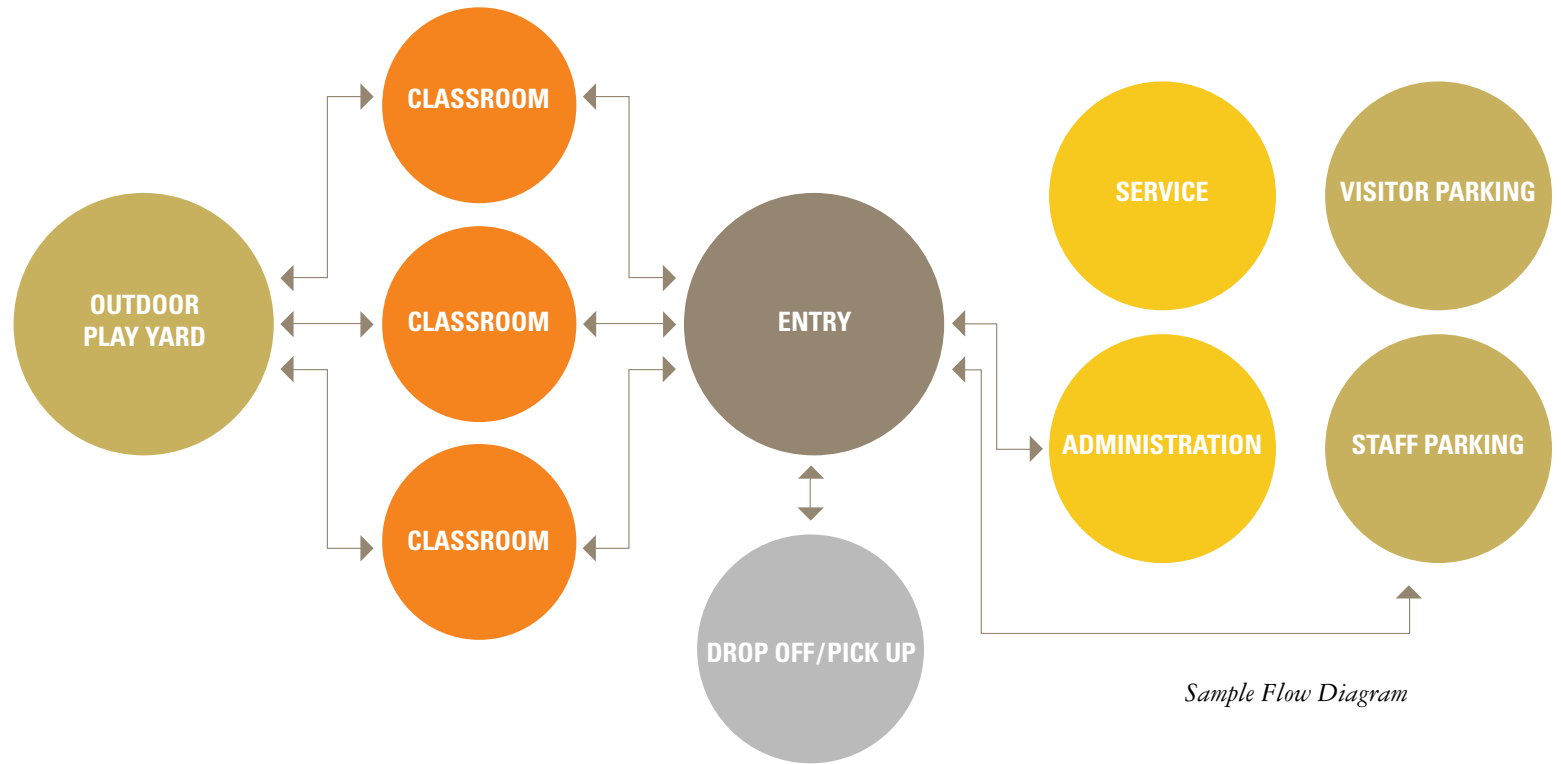
### Physical Therapy Gym

- A maximum of two children and two adults should be able to occupy one gym space at any given time
- Areas to accommodate gross-motor and fine-motor activities
- Adjacent to PT offices
- High ceilings
- Support beams for double-axis swing with appropriate safety clearances
- Dedicated space for a rock-climbing wall with appropriate safety clearances
- Storage for files, materials, small equipment, diapers, extra clothes and strollers
- Storage for larger equipment including, but not limited to, various-size therapy balls, playground balls, slide, swings, platform, trapeze, bolster, ladder swing, moon swing, net swing, balance beams, rocking boards, benches, stools, tunnels, wedges, scooter boards, cube chairs, trampolines, large barrels, tricycles, treadmill, prone standers, supine standers, adapted chairs, adapted strollers, wheelchairs, mats, parallel bars
- Padded wall surface
- Plexiglas mirrors on a portion of the wall surface
- Adult-height counter and cabinets with sink
- Storage for children's files and charts
- Acoustically treated surfaces to reduce noise
- Energy-efficient lights on dimmer switches
- Good ventilation





# SAMPLE PROGRAM STATEMENT



## DESIGN

### SPACE SCHEMATICS/ FLOW DIAGRAMS

Once the Program Statement is completed, the architect will begin to work on preliminary drawings, known as Space Schematics and Flow Diagrams. These are graphic studies and written notes that demonstrate options for the ways different building components and program uses relate to each other, the site and surrounding context. They are sometimes referred to as “bubble diagrams,”

and are a tool used to look at basic building and site relationships before starting more detailed design work. These diagrams are commonly used to analyze and evaluate the following items:

- Conversion of program requirements into net area requirements (square footage)
- Internal functions and relationships between spaces
- Human, vehicular and material circulation/flow patterns
- General space allocations
- Analysis of building operating functions
- Space adjacencies



- Special facilities and equipment
- Flexibility and expandability of spaces

## EXISTING FACILITIES SURVEYS

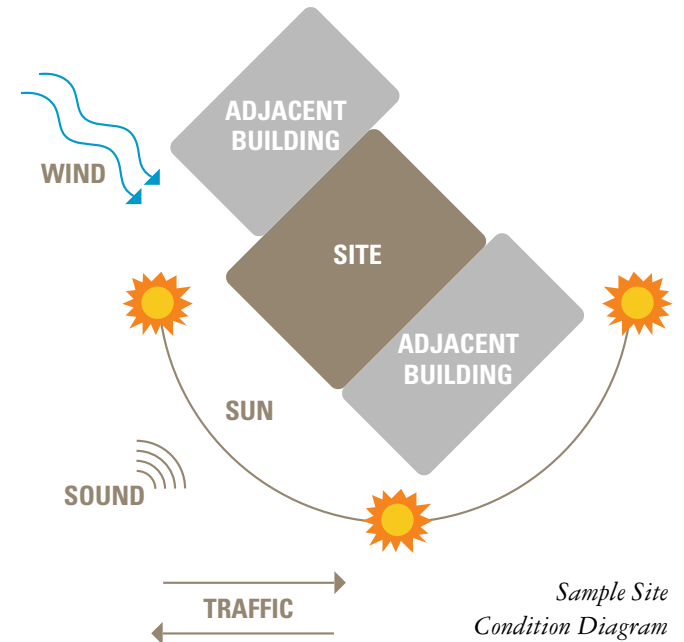
Existing Facilities Surveys include researching, assembling, reviewing and supplementing information for projects involving alterations and additions to existing facilities or determining new space usage in conjunction with a new building program. They include:

- Photography
- Field measurements
- Review of existing design data
- Analysis of existing structural capabilities
- Analysis of existing mechanical capabilities
- Analysis of existing electrical capabilities
- Review of existing drawings for critical inaccuracies, and the development of required measured drawings

## SITE ANALYSIS

Key objectives for the Site Analysis Phase are:

- To establish site-related limitations and requirements for the project.
- To secure a site that can accommodate the programmatic spaces and regulatory needs of the child care and early education facility, as defined in the Program Statement.



## SITE ANALYSIS AND SELECTION

- Identification of potential site(s)
- On-site observations
- Movement systems, traffic and parking studies
- Topography analysis
- Analysis of deed, zoning and other legal restrictions
- Studies of availability of labor force to staff the facility
- Studies of availability of construction materials, equipment and labor
- Studies of construction market
- Overall site analysis and evaluation
- Comparative site studies

## ANALYZING A SITE FOR CHILD CARE AND EARLY EDUCATION USE

Any site, whether undeveloped land or within an existing building, must meet the criteria established in the Program Statement and project budget, and comply with building code classification use requirements for an early childhood facility. In either case, the architect's first step will be to identify zoning requirements for the property, which include:

- Allowed uses for the site
- Setbacks and distances between the building, street and adjacent properties
- Limitations on height and size of the building
- Landscaping and parking requirements

A zoning analysis may show that child care is not an allowed use. In this scenario, it may be possible to apply for a variance. If it is determined that a variance is necessary, the architect, developer and operator work together with the local city planning department to apply for conditional approval before moving forward.

The location of the child care and early education space on the site and/or within the larger project is extremely important. The architect must prepare space schematic diagrams for the development site to confirm whether there is adequate area to accommodate the indoor and outdoor space

requirements and regulations for an early childhood facility, as defined in the Program Statement. The site must demonstrate compatibility with the overall goals of the early childhood facility.

## SECURING A SITE

Identifying and acquiring a site for a child care and early education facility may occur in one of the three following scenarios:

1. A developer has identified or owns a vacant site and is planning a mixed-use project. He/she would like to include an early childhood facility in the project. The size of the site will, to some extent, dictate the amount of space that can be allocated for an early childhood program.
2. A child care and early education operator owns an existing building and would like to expand his/her child care program. The site is zoned for multifamily housing. The operator may approach developers interested in partnering or purchasing the building in order to develop a larger mixed-use project on the site, with the condition that the new development will include a child care and early education facility.
3. Neither the developer nor the operator owns a site, but the developer would like to search for property to build a new mixed-use project that includes a child care and early education facility. In this scenario, the developer will



use the criteria listed in the early childhood facility Program Statement as a guide for selecting a site.

It is common for a developer to select and secure a site before a detailed Program Statement has been prepared. In this situation (Scenario 1), the developer may tell the operator how much space is available for his/her facility, and a Program Statement will be developed using the constraints of the space available. In Scenario 3, the Program Statement informs the developer and operator about the site requirements needed to accommodate the program criteria. The architect plays a lead role in conducting the site analysis.

The following items should be carefully considered when evaluating the suitability of a site for a child care and early education program:

- Building orientation
- Parking and security
- Circulation – entrances and exits
- Landscaping and outdoor space

## BUILDING ORIENTATION

- Pay attention to the context and relationships to adjacent buildings, utilities and traffic patterns.

- Look for opportunities to maximize daylight in rooms and allow partial lighting when full lighting isn't needed.
- The child care and early education facility should be oriented away from exterior noise, such as heavy traffic.
- The building's location should also help protect outdoor play space from environmental elements such as rain and wind.

## SITE DEVELOPMENT PLANNING

Preliminary site analysis and preparation and comparative evaluation of conceptual site development designs are based on the following:

- Land utilization
- Structures placement
- Facilities development
- Development phasing
- Movement systems, circulation and parking
- Utilities systems
- Surface and subsurface conditions
- Ecological requirements
- Deeds, zoning and other legal restrictions
- Landscape concepts and forms

## PARKING AND SECURITY

Sufficient parking needs to be allocated for staff, visitors and parents. The architect helps determine what is required by local code and what is ideal for the early childhood facility, taking into consider-



ation other available modes of transportation that parents and staff may use, such as buses, subways, bicycles, etc. For large projects, make sure that specific attention is given to security during site planning and design. Consider security systems early in the planning phase, as they will have an impact on operating costs, electrical wiring requirements and equipment locations.

Specific items to consider when designing for the safety of young children and families include:

- Curb cuts and driveways, which should be away from the entrance
- Direction of traffic into parking and service areas
- Safe paths of travel; parking located in close proximity or along a secure route to/from the facility, and safe and efficient pedestrian access
- Exterior lighting along paths of travel and in parking areas

#### Circulation: Entrance and Exits

The center should have only one entrance for staff, parents, children and visitors. Having one entrance allows for better control over who is entering and exiting the center. Local codes require additional emergency exits from the building, but these doors should be kept locked to prevent entry from the outside. Ideally, the facility is sited so that parking for drop-off and pick-up is at or near the main entrance.

#### LANDSCAPING AND OUTDOOR SPACE

The site should be large enough to accommodate an outdoor play yard for the early childhood facility, and plant materials must be safe and nontoxic.

- Outdoor play space should receive good natural light, and the shadow effect of housing or adjacent building must be minimized.
- Plants and vegetation should be used to provide shade, block wind and reduce summer solar gain

#### DETAILED SITE UTILIZATION

Detailed site analyses, based on the approved conceptual site development design:

- Land utilization
- Structures placement
- Facilities development
- Development phasing
- Movement systems, circulation and parking
- Utilities systems
- Surface and subsurface conditions
- Review of soils report
- Vegetation
- Slope analysis
- Ecological studies
- Deeds, zoning and other restrictions
- Landscape forms and materials



## ON-SITE UTILITY STUDIES

Establish requirements and preparing initial designs for on-site:

- Electrical service and distribution
- Gas service and distribution
- Water supply and distribution
- Drainage
- Sanitary sewer collection and disposal
- Wastewater treatment
- Storm water collection and disposal
- Central-plant mechanical systems
- Fire systems
- Emergency systems
- Security
- Pollution control
- Site illumination
- Communications systems

## ZONING PROCESSING ASSISTANCE

- Preparation of applications
- Development of supporting data
- Preparation of presentation materials
- Attendance at public meetings and hearings

## DUE DILIGENCE

Early in the process, review compliance with all codes and regulations for child care and early education space:

- Zoning and occupancy regulations (is child care an allowed use?)
- Building codes
- Fire codes
- Licensing and Health Department regulations and requirements
- Environmental assessments
- Compliance with Americans with Disabilities Act (ADA) requirements

It is unusual to find a perfect site that meets all of the established criteria for the early childhood space (and housing, if it is a mixed-use development project). Every project will require the developer and the operator to make some compromises and trade-offs with program elements. In some cases, the operator may need to consider reducing the total number of children that can be served. An early childhood program needs a minimum number of children for the operating budget to work successfully, and the operator needs to determine what that number is. If the minimum target cannot be met, an early childhood program may not be a viable option for the site.

## APPROVALS AND SIGN-OFF

The developer, operator and architect must all approve and sign on off the early childhood Program Statement and project budget before proceeding to the Design Phase. Changing space



requirements during the design phase will slow down the process and add expense.

### TASKS AND RESPONSIBILITIES

**Operator:** Use the Program Statement as a guide and checklist when meeting with the architect to ensure that all of the site criteria for the early childhood space have been satisfactorily addressed and designed. Ask questions if something isn't clear. Remind the architect to review all child care licensing regulations.

**Developer:** Obtain a soils report (soil quality/conditions) and a site survey for the architect and engineers.

**Architect:** Assess regulatory requirements, including zoning code and building department review, child care licensing regulations, and preliminary building layout and configuration (developer and operator to review and sign-off on location, size and overall configuration of the early childhood facility).

### SITE SELECTION CHECKLIST

#### KEY CONSIDERATIONS

- Land-use zoning allows an early childhood facility
- Size of lot(s) or existing building (if applicable) will accommodate program needs (interior and exterior)

- Accessible to public transit
- Ease of vehicular access and sufficient area to accommodate any required parking, drop-off areas and associated drive aisles
- Compatible with surrounding building and property uses
- Overall noise levels of adjacent roadway and property uses
- Effect of play yard noise on adjacent property uses
- Well-drained soils in outdoor play areas
- Solar orientation (for daylighting in classrooms as well as sunny and dry outdoor play areas)
- Potential for future expansion (if desired)
- Proximity to targeted clientele (ease of access for families and staff)
- Proximity to local emergency services
- Condition of land and any existing structures – environmental assessment to identify if remediation is necessary (removal of hazardous materials), and feasibility of removal of any identified hazardous substances
- Proximity to heavily traveled roads/presence of vehicular pollution
- Availability of existing utilities (water, power, sewer, gas, telephone, cable)
- Capacity of utilities to adequately serve the new facility
- Purchase or leasing costs

- Cost implications of code-required upgrades when converting or expanding existing spaces
- Cost of annual property taxes and insurance

## ARCHITECTURAL DESIGN PHASES

The architect plays a lead role in designing the physical layout of the child care and early education facility based upon the criteria defined in the Program Statement, which should be prepared by the team during the Pre-Design phase. During the design process, an architect will typically work with a team of consultants and engineers through the following three phases:

- Schematic Design
- Design Development
- Construction Documents

### SCHEMATIC DESIGN *(4 to 8 weeks)*

Key objectives for the Schematic Design Phase are:

- To establish the general scope, conceptual design, and the scale and relationship of components of the project.
- To establish a sustainable design approach to the child care and early facility that meets all of the requirements outlined in the Program Statement and all regulatory codes.

**ARCHITECTURAL DESIGN/DOCUMENTATION**  
The architect will respond to Program Statement requirements and prepare the following:

- Review of operator's program and budget
- Conceptual site and building plans
- Preliminary sections and elevations
- Preliminary selection of building systems and materials
- Development of approximate dimensions, areas and volumes
- Perspective sketch(es)
- Study model(s)

The architect generates several schematic designs for location on the site and layout of all rooms and spaces listed in the Program Statement. These quick diagrammatic studies help clarify and solve issues regarding adjacency and configuration of rooms, potential opportunities and restrictions of the selected site/building, and how the facility design meets the overall program goals. This is the time to "think outside the box," and explore a variety of creative ideas and solutions to the design.

Once the preferred ideas and layout from each option have been identified by the operator, the architect prepares the final schematic design from which a preliminary cost estimate will be calculated. The schematic design identifies the number of plumbing fixtures required for the early childhood program to make sure they

are factored into the cost estimate – as noted previously, early childhood programs have a high percentage of plumbing fixtures and specific location requirements. The architect, a general contractor or a professional cost estimator can prepare a cost estimate. Ideally, the cost estimate will approximate the budget established for the project. If not, modifications to the design may be required before proceeding to ensure the costs of the design match the budget.

### Design Features and Considerations

The features to be included in the design for a child care and early education facility are extensive, and are covered in detail in the sample Program Statement. As a reminder, the following information covers some of the general considerations to keep in mind when designing an environment for young children. Architects must refer to building codes and licensing regulations for additional design criteria that must also be addressed.

### Indoor Space

Indoor space design must be adequate to meet local, state and/or national funding source regulations, as some cities have different criteria for the physical space. If the program is Head Start or Early Head Start, and/or planning to acquire NAEYC accreditation, separate requirements must be complied with as well. It is important that the interior spaces offer a variety of stimu-

lating play and learning activities: structured and unstructured, calm to active, individual to group, quiet to noisy. New construction, renovation or adaptive re-use will each present special opportunities and limitations for the child care and early education facility.

### Administrative/Staff/Service Design

Administration's wide variety of activities requires organization and movement of materials, staff and visitors for efficiency, comfort and security.

### LANDSCAPE DESIGN/DOCUMENTATION

The landscape architect will work in consultation with the architect. This work will include consideration of alternate materials, systems and equipment, and development of conceptual design solutions for land forms, lawns and plantings based on program requirements, physical site characteristics, design objectives and environmental determinants.

### Outdoor Play Space

Play yards should be considered outdoor classrooms, organized like indoor space and providing opportunities for a variety of play and learning areas and activities. Outdoor play space should be adjacent to classrooms whenever possible, and must be designed to allow staff to provide appropriate supervision.



### **STRUCTURAL DESIGN/DOCUMENTATION**

The structural engineer will work with the architect to provide recommendations regarding basic structural materials and systems, analyses and development of conceptual design solutions for:

- A predetermined structural system
- Alternate structural systems

### **MECHANICAL DESIGN/DOCUMENTATION**

The mechanical engineer will work with the architect, and will consider the use of alternate materials, systems and equipment and develop conceptual design solutions for:

- Energy source(s)
- Energy conservation
- Heating and ventilation
- Air conditioning
- Plumbing
- Fire protection
- General space requirements

### **ELECTRICAL DESIGN/DOCUMENTATION**

The electrical engineer will work with the architect, and will consider the use of alternate systems; provide recommendations regarding basic electrical materials, systems and equipment, analyses; and develop conceptual solutions for:

- Power service and distribution
- Lighting
- Telephones

- Fire detection and alarms
- Security systems
- Electronic communications
- Special electrical systems
- General space requirements

### **CIVIL DESIGN/DOCUMENTATION**

The civil engineer will work with the architect, and will consider the use of alternate materials and systems and develop conceptual design solutions for:

- On-site utility systems
- Fire protection systems
- Drainage systems
- Paving

### **INTERIOR DESIGN/DOCUMENTATION**

The architect and/or an interior designer will develop space allocation and utilization plans based on functional relationships; consideration of alternate materials, systems and equipment; and development of conceptual design solutions for architectural, mechanical, electrical and equipment requirements in order to establish:

- Partition locations
- Furniture and equipment layouts
- Types and qualities of finishes and materials for furnishings and equipment

## MATERIALS RESEARCH/SPECIFICATIONS

The architect will work in consultation with the operator to ensure materials are selected that meet the goals of the child care and early education facility.

- Identify potential architectural materials, systems and equipment and their criteria and quality standards consistent with the conceptual design
- Investigate availability and suitability of alternative architectural materials, systems and equipment
- Coordinate with similar activities of other disciplines.

## TASKS AND RESPONSIBILITIES

All parties must approve and sign off on the schematic design before moving forward to the Design Development Phase. The operator and developer will meet with the architect once every week or every two weeks to review the drawings and make sure all elements in the Program Statement are being addressed in the design. Major categories of space needs and use include:

- Children's activities and classrooms
- Outdoor play space
- Administrative/Staff areas
- Support/Service areas

**Operator:** Review the early childhood space layout and equipment – cross-reference architect's

design with the Program Statement to make sure all items are accounted for. Ask questions if something isn't clear.

**Developer:** Review preliminary cost estimate in relation to entire project budget and identify any major items that may need to change.

**Architect:** Design preliminary equipment and furnishing layouts for classrooms to ensure all activities can be accommodated within the space, and are in compliance with regulatory space requirements. Provide preliminary coordination with consultants (structural engineer, mechanical engineer, landscape architect).

**Contractor:** Prepare preliminary cost estimate based on approved schematic design.

## REGULATORY PLAN REVIEWS

Throughout the planning and design process, various plan reviews by governmental agencies and officials are either recommended or required. It is important to initiate an early review of preliminary plans with licensing, fire, health and building inspectors. While this may seem like an obvious task, it cannot be stressed enough when designing a child care and early education facility. Do not make assumptions. Review schematic plans with designated inspectors and officials.

## PRELIMINARY REVIEW

Many regional governmental offices offer the option of early design review meetings with a child care licensor or health specialist. The purpose of these meetings is to ensure that the schematic design under development fulfills licensing requirements. It is recommended that all parties take advantage of this opportunity to avoid unexpected (and often expensive) design changes and pitfalls later. A written record of the items discussed at these preliminary review meetings is recommended; this record can either be provided by or approved by the licensor or health specialist.

Occasionally, the regulations governing child care centers are interpreted uniquely by individual licensors and health specialists. Contact with these individuals early and often in the design process is imperative to ensure that the project's interpretation of the regulations agrees with the licensor's interpretation. If modifications to the plans are necessary to meet licensing requirements, it is relatively easy to make changes early in the process without increasing the budget or compromising the program. Unexpected modifications required just prior to opening for business have huge cost and timing implications.

## REGULATORY CODES AND REVIEWS

- Child Care Licensing Agencies: Child care licensing departments typically have staff assigned to review plans for new centers; they can be very helpful during design development, or even as early as the schematic design phase.
- California Department of Social Services, Child Care Licensing Regulations: California Code of Regulations, Title 22, Division 12
- NYC Department of Health and Mental Hygiene (DOHMH): Article 47 (Child Care Services) of the New York City Health Code
- Building Department: For zoning codes
- State Fire Marshal: Fire inspectors are very particular when it comes to spaces occupied by young children. It is important to get early review during the design development phase.
- Americans with Disabilities Act (ADA)
- Environmental Protection Agency (EPA)
- Head Start
- National Association for the Education of Young Children (NAEYC)
- Early Childhood Education and Assistance Program (ECEAP)
- Early Childhood Environment Rating Scale (ECERS)
- Playground Equipment Safety Standards

Codes often conflict regarding heights and clearances, such as accessibility requirements and licensing requirements. Some accessibility requirements pose a safety hazard for small children and some licensing requirements do not account for accessible clearances. These issues need to be resolved with the appropriate officials early on and variances may be necessary.

## DESIGN DEVELOPMENT

*(12 weeks)*

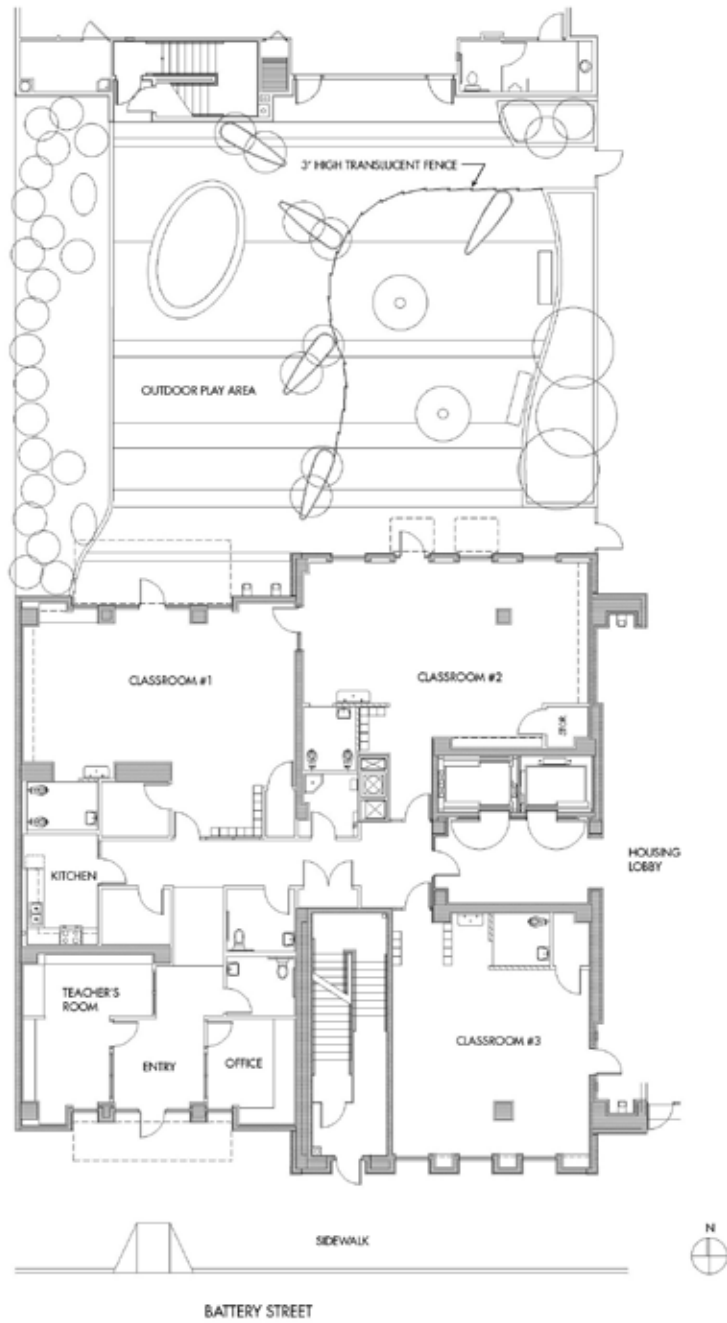
The key objective for the Design Development Phase is to further refine and describe the project size and character, including architectural, structural, mechanical and electrical systems; materials; and such other elements as may be appropriate.

During Design Development, the schematic design is refined and developed in greater detail. Drawings are produced at a larger scale (e.g., 1/4" = 1' 0"), with greater attention to exact code-compliant dimensions. Decisions are made regarding final room locations and sizes. New rooms should not be added during this phase; those decisions should have been finalized during the Schematic Design Phase. Changing program elements during design development increases the architect's fee and the construction costs.

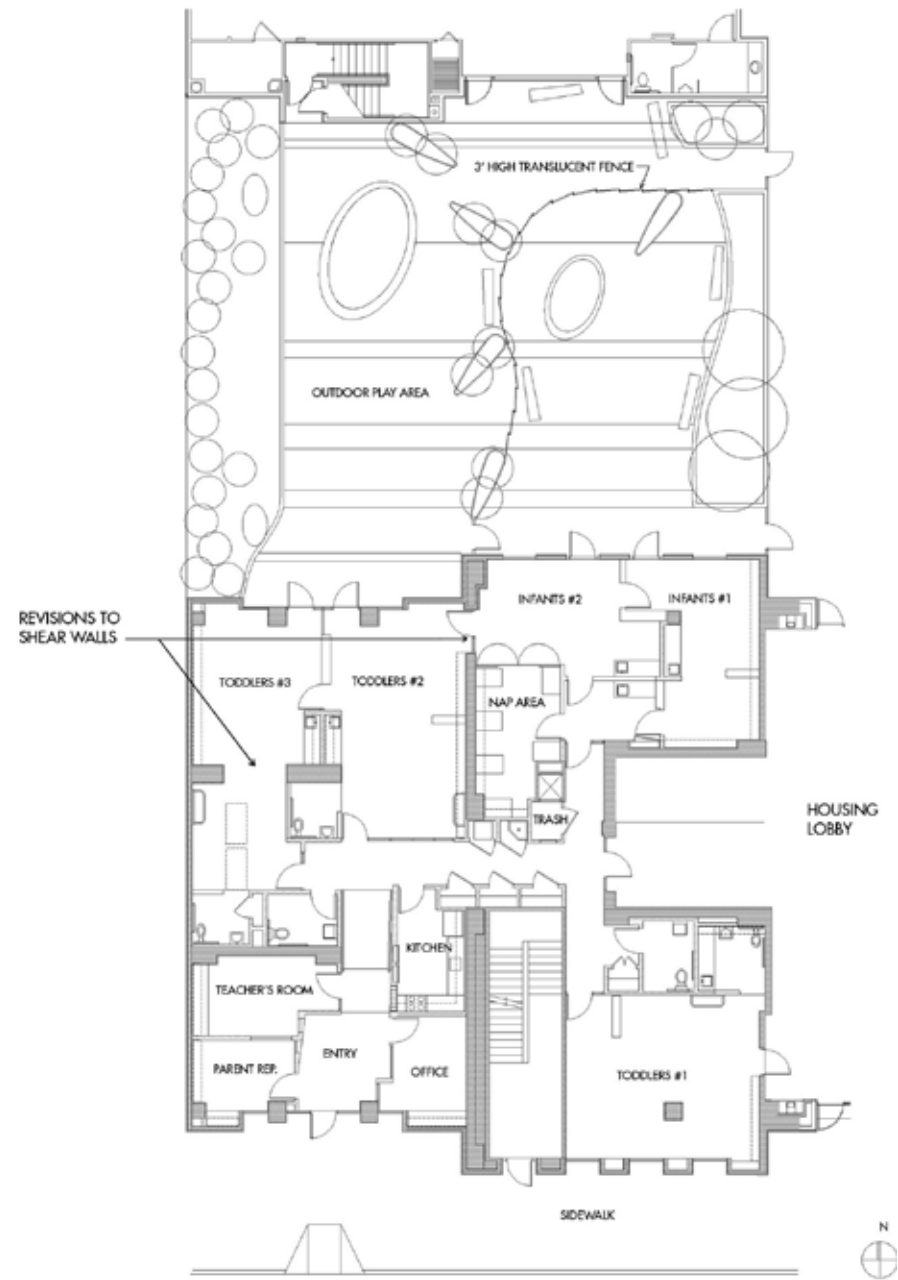
It is important for the operator to go through each item in the program document and make sure it is accounted for as the design develops. Spaces are sometimes unintentionally eliminated by the architect as he/she tries to coordinate the drawings with all the consultants and the developer. Therefore, the operator must take responsibility to review the plans carefully and cross-reference them with the program document.

Exploration continues with respect to specific locations and configurations of elements such as built-in cabinets, plumbing fixtures, windows and flooring. When building a new facility, the form of the building will be resolved, including the shape of the roof and the location of doors and windows. The location of the children's outdoor play area and other site amenities (e.g., parking, garbage, landscaping) is finalized.

At the end of the Design Development Phase, the architect has generated a site plan, floor plans (showing room locations and sizes and all window and door locations), exterior elevations (side views from outside the building showing exterior walls, roofs, doors, windows and materials), and interior elevations (showing interior windows, electrical and plumbing fixtures, shelves and cabinetry on interior walls).



Sample Preschool Plan



Sample Infant/Toddler Plan

### ARCHITECTURAL DESIGN/DOCUMENTATION

The architect continues the development and expansion of architectural Schematic Design documents to establish the final scope, relationships, forms, size and appearance of a project through:

- Plans, sections and elevations
- Typical construction details
- Three-dimensional sketch(es)
- Study model(s)
- Final materials selection
- Equipment layouts

### STRUCTURAL DESIGN/DOCUMENTATION

Continued development of the specific structural system(s) and Schematic Design documents in sufficient detail to establish:

- Basic structural system and dimensions
- Final structural design criteria
- Foundation design criteria
- Preliminary sizing of major structural components
- Critical coordination clearances
- Outline specifications or materials lists

### MECHANICAL DESIGN/DOCUMENTATION

Continued development and expansion of mechanical Schematic Design documents and development of outline specifications or materials lists to establish:

- Approximate equipment sizes and capacities
- Preliminary equipment layouts
- Required space for equipment
- Required chases and clearances
- Acoustical and vibration control
- Visual impacts
- Energy conservation measures

### ELECTRICAL DESIGN/DOCUMENTATION

Continued development and expansion of electrical Schematic Design documents and development of outline specifications or materials lists to establish:

- Criteria for lighting, electrical and communications systems
- Approximate sizes and capacities of major components
- Preliminary equipment layouts
- Required space for equipment
- Required chases and clearances

### CIVIL DESIGN/DOCUMENTATION

Continued development and expansion of civil schematic design documents and development of outline specifications or materials lists to establish the final scope of and preliminary details for on-site and off-site civil engineering work.

### LANDSCAPE DESIGN/DOCUMENTATION

Continued development and expansion of landscape schematic design documents and development of outline specifications or materials lists to

establish final scope and preliminary details for landscape work.

#### INTERIOR DESIGN/DOCUMENTATION

Continued development and expansion of interior Schematic Design documents and development of outline specifications or materials lists to establish final scope and preliminary details relative to:

- Interior construction of a project
- Special interior design features
- Furniture, furnishings and equipment selections
- Materials, finishes and colors

#### MATERIALS RESEARCH/SPECIFICATIONS

Consisting of:

- Development of architectural outline specifications or itemized lists and brief-form identification of significant architectural materials, systems and equipment, including their criteria and quality standards
- Coordination of similar activities with other disciplines
- Production of design manual, including design criteria and outline specifications or materials lists

#### TASKS AND RESPONSIBILITIES

**Operator:** Make sure important design elements are not inadvertently eliminated. Remind the architect and engineers of the importance of plumbing fixtures and ventilation.

**Developer:** Review and approve the Design Development, and make sure the design, including all mechanical and structural systems, is within the project budget.

**Architect:** Refine the design. Coordinate with consultants on structural, mechanical, electrical, plumbing and landscape drawings. Schedule preliminary Building Department review.

As the architect is coordinating his/her drawings with consultants, it is important that special attention be paid to any modifications that may have a negative impact on the child care and early education spaces. Column locations, shafts, plumbing or shear walls can reduce the usable square footage of a classroom, which will affect the number of children the operator can provide care for, and, by extension, the operating budget.

#### CONSTRUCTION DOCUMENTS

*(16 to 24 weeks)*

The key objective for the Construction Documents Phase is to set forth in detail the requirements for the work in drawings and written specifications.

During this phase the architecture team, along with its consultants (mechanical, electrical, structural and civil engineers, and landscape architect) continues to prepare a refined and detailed description of the design. Construction Documents (CDs) typically consist of both a set of drawings and a project manual (a written document) that together describe, as thoroughly as possible, what the contractor is responsible for building. These drawings include plans, elevations, many details, door and window schedules; and written specifications (in the project manual) describing exactly which materials, finishes and methods are to be used.

It is important that the architect be as thorough as possible in describing the scope of work in the CDs. Complete documents reduce the potential for confusion and guesswork during construction, which can lead to revisions, inefficient progress and cost overruns. Revisions during construction are generally more expensive than revisions anticipated prior to construction.

Construction Documents may take 10 to 16 weeks to develop, depending upon the complexity and size of the project and the schedules of the participants. This phase should not be rushed, since it is the point at which all of the building systems designed by consultants must be coordinated with each other and with the architectural elements. At this point, any major changes to the design will

have a significant impact on schedule and costs.

## **ARCHITECTURAL AND CONSULTANT RESPONSIBILITIES**

### **Architectural Design/Documentation**

- Preparation of drawings based on approved Design Development documents, setting forth in detail the architectural construction requirements for a project.

### **Structural Design/Documentation**

- Preparation of final structural engineering calculations, drawings and specifications based on approved Design Development documents, setting forth in detail the structural construction requirements for a project.

### **Mechanical Design/Documentation**

- Preparation of final mechanical-engineering calculations, drawings and specifications based on approved Design Development documents, setting forth in detail the mechanical construction requirements for a project.

### **Electrical Design/Documentation**

- Preparation of final electrical engineering calculations, drawings and specifications based on approved Design Development documents, setting forth in detail the electrical requirements for a project.



#### Civil Design/Documentation

- Preparation of final civil engineering calculations, drawings and specifications based on approved Design Development documents, setting forth in detail the civil construction requirements for a project.

#### Landscape Design/Documentation

- Preparation of final drawings and specifications based on approved Design Development documents, setting forth in detail the landscape requirements for a project.

#### Interior Design/Documentation

- Preparation of final drawings, specifications and other documents based on approved Design Development documents, setting forth in detail the requirements for interior construction and furniture, furnishings and equipment for a project.

#### Materials Research/Specifications

- Development and preparation of bidding and procurement information describing the time, place and conditions of bidding, bidding forms and the form(s) of agreement between the developer, operator and contractor(s).
- Development and preparation of architectural specifications describing materials, systems and equipment, workmanship, quality, and performance criteria required for the construction of a project.

- Coordination of the development of specifications by other disciplines.
- Compilation of a project manual, including conditions of the contract, bidding and procurement information and specifications.

#### Building Department Permit Review

A checklist should be available from the local building and planning departments describing all items required for permit application submittal. Depending on zoning classification, extra approvals or permits may be necessary. Ask for the help of the building and planning department staff in identifying all of the relevant issues and reviews required.

Permit plan-review times vary significantly among communities and among projects of different sizes and complexity. The local building department should be able to provide an estimate of the time needed for plan review, which should be built into the project schedule.

#### CONSTRUCTION DOCUMENTS RESPONSIBILITIES

##### Operator:

- Approval and sign-off on design progress

##### Developer:

- Approvals and sign-off
- Permit and building department reviews

**Architect:**

- Prepare outline specifications
- Permit and building department reviews

**Contractor:**

- Revised cost estimate

## VALUE ENGINEERING

Value Engineering practices typically occur in the design phase and can also be initiated by the contractor in the construction phase. This is an organized process focused on analyzing designed building features, systems, equipment and material selections for the purpose of achieving essential functions at the lowest life-cycle cost while maintaining required performance, quality, reliability and safety. Identifying and removing unnecessary cost, and thus improving value, must be done without reducing quality, safety, reliability, dependability, and the features and attractiveness that the operator wants to achieve with the child care and early education facility.

The value-engineering process helps identify the points at which the following conflicting criteria can be addressed and balanced:

- Minimum cost
- Maximum quality and performance
- Largest possible scope
- Minimum time for completing the project

Value engineering occurs during several phases of the project, but sometimes, it only appears later in the project, usually when the contractor or construction manager is brought on board.

Two value engineering studies should take place during the design phase:

- At completion of Schematic Design
- At completion of Design Development

A value engineering consultant will identify and evaluate changes that could result in increased functional value in the completed child care and early education facility while reducing construction or operation and maintenance costs. The value engineering effort is typically scaled to the project's size, complexity and status.

Concentrating value-engineering efforts in the early stages of project design affords greater savings and allows a change of direction, if appropriate, without affecting project delivery schedules. If savings are identified, the project budget may be reduced or the money may be reallocated, if justifiable, for features that lend greater life-cycle value to the building.

Value engineering continues during construction because a contractor's practical experience and purchase options can often generate substantial savings. Changes may reduce the cost of construction or the life-cycle cost of the building,

but must not lessen building performance, design quality, safety, appearance or ease of maintenance. The development team and the child care and early education operator must evaluate and approve all proposed changes.

#### **TASKS AND RESPONSIBILITIES – KEY CONSIDERATIONS**

Value engineering goals are addressed in partnering agreements with the operator, the development team, the various consultants and the construction contractors.

The primary goals of the user and the quality of the design can often be reduced or lost when value engineering is applied to a project by the developer or the construction manager without consulting the child care and early education operator. Value engineering proposals may substantially affect the design and may unintentionally affect other areas of building performance. Therefore, it is important for the architect and the operator to evaluate all value-engineering proposals carefully to ensure that they do not compromise the safety and quality of the child care and early education program.

The architect and contractor should discuss their expectations with the operator regarding the quality and required durability of the center construction early on and throughout the development of the plans, specifications and construction.

- Durability ratings for finishes and equipment for the child care and early education facility need to be a higher standard than typical housing finishes and equipment.
- The architect and operator must be consulted on all value engineering decisions.
- The operator must understand that tough decisions and trade-offs need to be made, and recognize his/her own priorities for the child care and early education facility, as well as the reality of budget and financing for the entire project.

Time and money are typically the driving factors for any development and construction project. To ensure the facility meets his/her vision and goals, the child care and early education operator must be an advocate for quality design and sustainability standards throughout the entire process.

MONTH 17

● Bidding

*Architect* prepares bid set of drawings and specifications – and answers questions from bidders

*Developer* and *Architect* identify and solicit Contractors to bid on the project

*Operator* and *Developer* ensure that the bidding process is in compliance with public funding sources if required, and select a contractor for the project

MONTHS 17-34

● Construction

*Contractor* will coordinate and supervise all construction work and subcontractors, and will schedule inspections by regulatory agencies

Administration/Observation

*Architect* and *Developer* attend weekly site meetings to supervise construction progress and compliance with drawings, specifications, and budget and inform *Operator* about progress

*Contractor* will submit proposals for quantities and costs of labor and materials

*Architect* and *Contractor* will negotiate any issues related to costs and modifications to work

Supplemental Materials and Accounting

*Architect* and *Contractor* will maintain records of payment for construction

MONTHS 28-34

● Construction

*Contractors* build out the interior of the early childhood space

Administration/Observation

*Architect* and *Operator* visit construction site to ensure the early childhood space is being built according to plans and specifications

*Operator* orders furnishings and equipment for the early childhood spaces

Marketing

*Contractor* and *Operator* market the housing and early childhood program

MONTHS 30-34

● Regulatory Review

*Contractor* will schedule inspection for obtaining certificate of occupancy

*Operator* will submit application for licensing after a certificate of occupancy is obtained, and will hire staff for the early childhood facility

MONTHS 34-38

● Fit out

*Operator* moves furniture and equipment into the early childhood facility

Occupancy

*Operator* opens the early childhood program

# SECTION III

**CONSTRUCTION AND OCCUPANCY**

### CONSTRUCTION AND OCCUPANCY

#### BIDDING/NEGOTIATION PHASE

The key objective for the bidding or negotiation phase is to solicit and obtain bids or negotiated proposals from contractors, and to award a construction contract to a licensed contractor based on costs, quality and schedule.

#### SELECTING A GENERAL CONTRACTOR

Hire a licensed contractor to construct your project. Here are things to keep in mind when selecting a contractor:

- Hire only state-licensed contractors.
- Get at least three bids.
- Get three references from each bidder and review past work in person.
- Make sure all project expectations are in writing and do not sign the contract until the terms are completely understood.
- Confirm that the contractor carries Workers' Compensation insurance for employees.

- Consider requiring that the contractor provide performance and payment bonding for the full amount of the construction contract. This ensures that the contractor, or his/her bonding company, will pay for services and materials used on a project, taxes and contributions due to the state, as well as damages that may result from breach of contract or negligent work.

#### PUBLIC FUNDING REQUIREMENTS

Projects that use public funding sources will often require a competitive bidding process to select a contractor. Each agency involved will have its own individual requirements for the bidding procurement process, and it is critical to verify the process the operator will be required to follow for the project. Typically, projects with small contract values are subject to an informal bidding process and large contracts are subject to a formal process with more requirements.

#### NEGOTIATED CONSTRUCTION COST

Based on experience, interviews and references from reliable sources, interview contractors and choose one with whom to negotiate a project construction cost.

### PRE-QUALIFIED BIDDERS

Based on experience, interviews and references from reliable sources, solicit a limited number of general contractors to submit fixed-price bids on the project. Evaluation of bids includes comparing prices, quality of work and quality of working relationships.

### COMPETITIVE BIDS

Advertise for, or otherwise openly solicit, competitive bids from the open market, then interview contractors and check references. Evaluation of bids is typically based on the lowest price; however, be sure to retain the right to select any bid for any reason.

### ROLES AND RESPONSIBILITIES

The architect provides the following services during bidding/negotiation:

- Assists the developer and/or operator in establishing a list of bidders or proposers
- Conducts the prequalification of bidders or proposers
- Participates in pre-bid conferences
- Responds to questions from bidders or proposers and provides clarifications or interpretations of the bidding documents
- Attends bid opening(s)
- Documents and distributes bidding results

- Considers, analyzes, compares, and recommends alternates or substitutions proposed by bidders or proposers, either prior or subsequent to receipt of bids or proposals
- Validates bids or proposals
- Participates in reviews of bids or proposals
- Evaluates bids or proposals
- Recommends award of contract(s)
- Participates in negotiations prior to or following decisions on award of the contract(s)
- Notifies contract award(s)
- Assists in the preparation of construction contract agreement forms for approval by owner
- Prepares and distributes sets of contract documents for execution by parties to the contracts
- Receives, distributes and processes, for owner's approval, required certificates of insurance, bonds and similar documents
- Prepares and distributes to contractor(s), on behalf of the operator, notice(s) to proceed with the work

The operator and/or developer are responsible for the following:

- Discussing the advantages and disadvantages of each option with the architect
- Coordinating this effort with whomever is providing the financing/funding, as they may have policies that dictate one method over another

## CONTRACT/CONSTRUCTION ADMINISTRATION PHASE

The key objective for the contract/construction administration phase is to ensure that the project is being built according to the drawings and specifications prepared by the architect and engineers, and that quality workmanship is being performed by one or more contractors.

### SMALL PROJECTS (1 to 4 months)

Tenant improvements to existing vacant space

### MODERATELY COMPLEX PROJECTS (2 to 8 months)

Renovation or remodel of an existing building with structural, mechanical and electrical work involved, or an addition to an existing center

### NEW CONSTRUCTION OR MAJOR RENOVATION PROJECTS (6 to 18 months)

Once the general contractor has been selected and an agreement has been made on the construction cost, a written contract needs to be signed. Architects often use standardized American Institute of Architects (AIA) contracts that protect and hold responsible all parties to the contract. Prior to the start of construction, the contractor will provide an itemization of construction costs per category of work (known as a Schedule of Values), a construction schedule, and a list of materials and equipment suppliers and subcontractors who will be working on the project.

During the course of construction, the developer, operator, architect and appropriate consultants will meet with the contractor and subcontractors on a regularly scheduled basis – typically once a week – at the construction site to review progress and identify items that need discussion and resolution. For example, the child care and early education facility requires eight child-size toilets; however, the contractor did not read the specifications carefully and ordered eight standard adult toilets instead. The architect and operator are responsible for telling the contractor that the correct toilets need to be ordered and installed. This is why weekly meetings are critical: to ensure that the project is being constructed to the specifications and drawings provided by the architect. The contractor will also be in more frequent contact with the architect for additional clarifications.

Typically, the contractor submits an application for payment, along with an updated Schedule of Values indicating the percentage of work completed, on a monthly basis. The architect certifies the application, sometimes with modifications, after which the operator or developer is responsible for payment to the contractor.

Inevitably, no matter how well the project has been planned and documented in the Construction Documents, there will be modifications as construction progresses. It is important that the operator understands this process, and



early on, identifies items that can or cannot be compromised. Any changes proposed during construction should be evaluated through written Modification Proposals, which list the physical change; the change in cost; and the change in the contract schedule, if any, that will take place if the modification is approved and implemented. Proposals approved during a given month should be incorporated into a written Change Order that, once signed by all parties, legally modifies the original contract sum and duration. These inevitable changes are the reason why a construction contingency in reserve must be maintained.

Through the course of construction, all parties will be called upon to make many decisions, including colors, finishes, light fixtures, appliances, equipment, location of mechanical features, etc. The original goals and vision of the project will inform these decisions. Keep a copy of the Program Statement easily accessible for constant reference. Remember that there will be trade-offs and compromises in almost all the decisions and selections that need to be made. It is important to remain flexible.

The operator is responsible for ordering and purchasing furniture and equipment for the new facility, and should plan for items to be delivered to the site near the end of construction. Some items may be back-ordered up to two months, so it is important to coordinate furniture delivery

with the construction schedule. Early research and planning are necessary to ensure that the child care and early education facility is ready to be occupied and operating on schedule.

## **ROLES AND RESPONSIBILITIES**

The architect will provide the following services during the Construction Phase Submittal, consisting of:

- Processing submittals, including receipt, reviewing and appropriate action on shop drawings, product data, samples and other submittals required by the contract documents
- Distributing submittals to the developer, operator, contractor and/or architect's field representative as required
- Maintaining master file of submittals
- Related communications

## **OBSERVATION**

- Visits to the site at intervals appropriate to the stage of the work, or as otherwise agreed by the developer, operator and architect in writing, to become generally familiar with the progress and quality of the work completed and to determine in general if the work, when completed, will be in accordance with the contract documents; preparing related reports and communications.

## TESTING AND INSPECTION ADMINISTRATION

Testing and inspection administration services relating to independent inspection and testing agencies, consisting of:

- Administering and coordinating field testing required by the contract documents
- Recommending scope, standards, procedures and frequency of testing and inspections
- Arranging for testing and inspections on the developer's and operator's behalf
- Notifying inspection and testing agencies of status of work requiring testing and inspection
- Evaluating compliance by testing and inspection agencies with required scope, standards, procedures and frequency.
- Reviewing reports on inspections and tests and notifications to the developer, operator and contractor(s) of observed deficiencies in the work

## SUPPLEMENTAL DOCUMENTATION

- Preparing, reproducing and distributing supplemental drawings, specifications and interpretations in response to requests for clarification by contractor(s), developer, or the operator
- Forwarding developer's or operator's instructions and providing guidance to the contractor(s) on the developer's and/or operator's behalf relative to changed requirements and schedule revisions

## QUOTATION REQUESTS/CHANGE ORDERS

- Preparing, reproducing and distributing drawings and specifications to describe work to be added, deleted or modified
- Reviewing proposals from contractor(s) for reasonableness of quantities and costs of labor and materials
- Reviewing and recommending, relative to changes in time, for substantial completion
- Negotiating with contractor(s) on developer's and/or operator's behalf relative to costs of work proposed to be added, deleted or modified
- Assisting in the preparation of appropriate modifications of the construction contract(s)
- Coordinating communications, approvals, notifications and record-keeping relative to changes in the work

## CONTRACT COST ACCOUNTING

- Maintaining records of payments on account of the contract sum and all changes thereto
- Evaluating applications for payment and certification thereof
- Reviewing and evaluating expense data submitted by the contractor(s) for work performed under cost-plus-fee arrangements

## PROJECT CLOSEOUT

Project closeout services, initiated upon notice from the contractor(s) that the work, or a designated portion thereof which is acceptable to the owner, is sufficiently complete, in accordance with the contract documents, to permit occupancy or utilization for the use for which it is intended, consisting of:

- Detailed inspection with the developer's and/or operator's representative for conformity of the work to the contract documents, verifying the list submitted by the contractor(s) of items to be completed or corrected
  - Determining the amounts to be withheld until final completion
  - Securing and receiving of consent of surety or sureties, if any, to reduction in or partial release of retainage of the making of final payment(s)
  - Issuing certificate(s) of substantial completion
  - Inspecting upon notice by contractor(s) that work is ready for final inspection and acceptance
  - Notifying developer, operator and contractor(s) of deficiencies found in follow-up inspection(s), if any
  - Final inspection with the developer's and/or operator's representative to verify final completion of the work
- Receiving and transmitting warranties, affidavits, receipts, releases and waivers of liens of bonds indemnifying the developer or operator against liens
  - Securing and receiving consent of surety or sureties, if any, to the making of final payments
  - Issuing final certificate(s) for payment

The general contractor will provide the following services during the Construction Phase:

- Coordinating and supervising all construction work and subcontractors on the site
- Coordinating and scheduling multiple inspections by building department staff and other regulatory agencies
- Scheduling a final inspection for obtaining a certificate of occupancy for the facility; the certificate of occupancy is required by the governing Department of Health prior to issuing a license for the facility

## POST-CONTRACT PHASE

Key objective for the Post-Contract Phase: To ensure that the operator has assistance in the use and occupancy of his/her new child care and early education facility.

## FINAL REGULATORY REVIEWS

### Child Care Licensing:

After the operator submits his/her application for licensing, the child care licensor, health specialist and the Fire Marshal representative will inspect the facility. Typically, each agency's inspections occur independently once all construction work is complete. The child care licensor will need to do the final review in order to issue the license

## MAINTENANCE AND OPERATIONAL PROGRAMMING

The architect will provide the following services during the Post-Contract Phase Maintenance and Operational Programming:

- Arrange for and coordinate instructions on operations and maintenance of equipment in conjunction with manufacturer's representatives
- Assist in the preparation of operation and maintenance manual(s) for the owner's use

## START-UP ASSISTANCE

- On-site assistance in the operation of the building systems during initial occupancy
- Assistance in the training of the early childhood facilities operation and maintenance personnel in proper operations, schedules and procedures
- Administration and coordination of remedial work by the contractor(s) after final completion

## RECORD DRAWING

- Making arrangements for obtaining information from contractor(s) in the form of marked-up prints, drawings and other data certified by them on changes made during performance of the work
- Reviewing for general accuracy information submitted and certified by the contractor(s)
- Preparing record drawings based on certified information furnished by contractor(s)
- Transmitting record drawings and general data, appropriately identified, to the developer, operator and others as directed

## WARRANTY REVIEW

- Consulting with and making recommendations to the developer and operator during the duration of warranties regarding inadequate performance of materials, systems and equipment under warranty
- Inspecting prior to expiration of the warranty period(s) to ascertain adequacy of performance of materials, systems and equipment
- Documenting defects or deficiencies and assisting the owner in preparing instructions to the contractor(s) for correction of noted defects

## POST-CONTRACT EVALUATION

The architect will conduct a project inspection at least one year after completion of the work; a review with appropriate supervisory, operating and maintenance personnel; and an analysis of

operating costs and related data for evaluation of:

- The initial project programming versus actual facility use
- The functional effectiveness of planned spaces and relationships
- The operational effectiveness of systems and materials installed





## CONCLUSION

### LOOKING FORWARD

Child care regulations have been created to ensure that children's immediate and essential needs for health, safety and general welfare are met. While these standards are constantly improving, they cannot address the full range of quality issues in child care and early education design and programming. Regulations are limited to those criteria that can be objectively measured and evaluated – for example, teacher qualifications and basic indoor/outdoor space requirements. Also, regulations are purposely flexible regarding quality issues in order to offer a wider variety of program choices at the facility level.

Increased understanding of children's developmental needs – and the potential benefits of quality child care and early education to children, parents and the community – strongly suggest programs and facility designs that go beyond minimum regulatory requirements. Integrating sustainable design strategies and practices as much as possible will result in “green” building benefits for the child care facility and the surrounding community. Facility design considerations and processes presented in this guide offer opportunities and procedures for achieving these goals.

The majority of children today spend at least part of the day in a child care setting outside of the home. Because this time is such an important part of the child's overall physical, intellectual and social development, it is essential that it be spent in a quality environment that provides the people, spaces and activities for healthy growth and sustainability.

This guide has been created to help with both the big picture and the small details involved in developing a child care and early education facility. While we have attempted to be comprehensive, in many ways, this guide is only a starting point for your project. It is intended to be an ongoing reference for developers, operators, architects and contractors, and we encourage you to seek additional resources as well, some of which are referenced here. Designing and developing a child care and early education facility is a complex process with many people involved, but with patience and perseverance, you will succeed in making an enduring contribution to the children and families in your community.

## GLOSSARY OF TERMS

**Accreditation:** In this guide accreditation refers to a voluntary process designed to improve the quality of early and school-age care programs. Accreditation systems require programs to meet standards that exceed minimum State regulatory requirements. (see NAEYC)

**Affordable Child Care:** Child care that requires no more than 10% of a family's income to be spent on child care costs.

**Affordable Housing:** Housing that consumes no more than 30-35% of a household's income.

**Age Group:** Refers to the age of the children being cared for in a classroom or group. Regulations have standards for the maximum number of children allowed to be cared for in a given age group (see group size).

**Alternate:** An alternative to the base bid that provides for a change in the level of quality, or scope of work specified in the base bid. This provides the owner with an option to modify the project by accepting or rejecting the alternate. If accepted, it may result in a change to either the contract sum, contract time, or both.

**American with Disabilities Act (ADA):** A federal law designed to eliminate discrimination against individuals with disabilities by mandating equal access to jobs, public accommodations, government services, public transportation, and telecommunications. When designing a building the architect and owner must comply with ADA Standards for Accessible Design.

**Architectural Programming:** A process of meeting with the client to gather information about the goals for the spaces that are going to be designed, resulting in a written and graphic description of design criteria for all spaces in the building including area requirements, and important spatial adjacencies. (see program statement)

**As-Built Drawings (record documents):** drawings prepared of a completed project after construction that describe the actual construction project.

**Base Bid:** The sum stated in a bid, as the base for which the bidder offers to perform the work described in the bidding documents, to which work may be added, or from which work may be deleted for sums stated in alternates.



**Bid:** a written agreement prepared by the bidder to enter into a contract to provide the labor and/or materials required by the terms of the bid documents.

**Bid Documents:** Written and graphic documents prepared by the architect used by the bidders to prepare the bid. A typical bid document might include, construction drawings, specifications, instructions to bidders, a bid form, and other information used by the bidder in the preparation of a bid.

**Building Codes:** Regulations, ordinances or statutory requirements of a government unit relating to building construction and occupancy, generally adopted and administered for the protection of public health, safety, and welfare.

**Building Inspector:** An employee or agent of a governmental authority empowered to inspect building projects and insure that they are constructed according to code.

**Building Orientation:** How the building sits on a site with regards to north, south, east, and western exposure. Often the biggest energy decision on your new building is the building shape and orientation. With the right orientation, you might be able to install smaller heating and air conditioning systems.

**Building Permit:** a license granted by a government agency to construct a specific project on a specific site, under the terms of the permit.

**Building Plan:** a view of a building floor, looking down from above, showing its horizontal elements, such as, walls, doors, windows, cabinetry, etc.

**Certificate of Occupancy (C of O):** A document issued by a local government agency or building department certifying a building's compliance with applicable building codes and other laws, and indicating it to be in a condition suitable for occupancy. Generally, such a certificate is necessary to be able to occupy the structure for everyday use, as well as to be able to sign a contract to sell the space and close on a mortgage for the space.

**Change Order:** An amendment to the construction contract signed by the owner, architect, and contractor that authorizes a change in the work or an adjustment in the contract sum, or the contract time, or both.

**Child Care:** in this guide the term child care refers to the act of caring for and supervising children from the ages of 0-5 years of age.

**Child Care Capacity:** The total number of children a child care and early education facility is allowed to serve based on State child care regulations and licensing standards.

**Child Care Center:** A facility providing child care to a group of children that is not a family day care home.

**Child Care Director (director):** A person responsible for the cost effective and efficient development and operation of a Child Care Center including various elements of financial management and program management.

**Child Care Licensing:** Regulations administered by the State to promote health, safety, and quality of life of each person in child care through the administration of an effective collaborative regulatory enforcement system.

**Child Care Programming:** The child care center's philosophy of how children learn combined with the routines and activities the center provides to help nurture children and provide support that allows them to gain the skills needed for success in school and in life.

**Child Care Provider (operator):** A licensed individual, organization or company that cares for and provides services for young children.

**Children with Special Needs:** Children with physical disabilities or developmental delays.

**Circulation:** In the field of architecture, circulation refers to the way people move through and interact with a building. Items such as hallways, entries, exits, elevators, escalators, and staircases are often referred to as circulation elements, as they are positioned and designed to optimize the flow of people through a building.

**Construction Administration (CA):** The duties and responsibilities during the construction phase of a project as set forth in the design professional agreement and in the construction documents' General Conditions. The person or firm responsible for contract administration is listed in the construction Agreement. (see construction manager)

**Construction Budget:** The sum established by the owner as available for construction of the project, including contingencies for bidding to contractors and for changes during construction.

**Construction Contract:** The executed Agreement between the contractor (or contractors) and the owner (developer or operator) that sets forth the work required to construct a project, the contract time, liquidated damages, the contract sum, and the contract documents.

**Construction Documents (CDs):** All of the written and graphic documents prepared or assembled by the design professional for communicating the project design and contract administration. Construction documents include both the bidding and contract documents.

**Construction Manager:** The person or firm responsible for coordinating and managing all or part of the construction process, including the design and bidding phases, as a member of the construction team consisting of developer representatives, the design professional, and the contractor.

**Contractor:** The builder that has entered into an agreement with the owner to build the project. Since the contractor may bring in subcontractors to construct portions of the project, he/she may also be referred to as “the general contractor” or “GC”.

**Contracted Slots:** are spaces set aside for children from low-income families at specific child care programs. The state and the child care provider agree on a rate and the state guarantees payment for the reserved slots.

**Cost Analysis:** the architect or a consultant calculates expected future operating, maintenance, and replacement costs of the desired designs and

features to assist owners in developing a realistic design and budget estimate.

**Critical Path:** The optimum sequence of work activities which, if delayed or extended, will delay the scheduled completion of one or more of the milestones specified in the contract schedule, the scheduled completion of the work, or both.

**Davis Bacon Wages:** Wage rate mandated for all Federal Government Construction contracts and the contracts for federally assisted construction over \$2,000. Rates can be found at <http://www.access.gpo.gov/davisbacon/index.html>

**Design:** The various services required to produce drawings and other documents that fix and describe the size and character of an entire project; the architectural concept of a building as represented by site plans, floor plans, elevations, renderings, and other drawings.

**Design Development (DD):** A project design phase in which all design decisions need to be completed. The design professional further develops the schematic design and architectural detailing and ensures that basic technical issues are resolved and are capable of technical description. Plan arrangements, specific space accommodations, equipment and furnishings, building design, materials and colors, and

complete definitions of systems serving the project are developed.

**Detail:** A drawing showing an element, or a small portion of the building.

**Developmentally Appropriate:** Teaching strategies and learning environments that reflect research, theories and practices about how children grow, develop and learn.

**Dramatic Play Area:** Area in which children, play, pretend, use their imaginations, practice new skills and learn.

**Due Diligence:** is a term used for a number of concepts involving either the performance of an investigation of a business or person, or the performance of an act with a certain standard of care. In this guide it refers to the research and investigation of all regulatory codes, finances, and legal items associated with a site or building.

**Early Childhood Education:** A term to describe education in early childhood, one of the most vulnerable stages in life. According to the NAEYC (National Association for the Education of Young Children), it spans the human life from birth to age eight.

**Elevation:** A horizontal view of a building or object from one side.

**Energy Code:** That portion of the building code that relates to energy usage conservation requirements, and standards.

**Environmental Impact Assessment (EIA):** is an assessment of the possible impact—positive or negative—that a proposed project may have on the environment, together consisting of the natural, social and economic aspects. The purpose of the assessment is to ensure that decision makers consider the ensuing environmental impacts to decide whether to proceed with the project.

**Equity:** In real estate, it is the difference between what a property is worth and what the owner owes against that property (i.e. the difference between the building value and the remaining mortgage or loan payments on a building).

**Fine (small) Motor Skills:** Skills that use small muscle groups such as hands and fingers and frequently involve eye-hand coordination.

**Fire Code:** That portion of the building code that relates to fire safety requirements, and standards.

**Floor Area Ratio (FAR):** is the ratio of the total floor area of buildings on a certain location to

the size of the land of that location, or the limit imposed on such a ratio. The Floor Area Ratio is the total building square footage (building area) divided by the site size square footage (site area).

**Flow Diagrams:** A graphic diagram that shows how different program elements of a building relate to each other with regards to movement and circulation.

**Gross Floor Area:** The area within the perimeter of the outside walls of a building as measured from the inside surface of the exterior walls, with no deduction for hallways, stairs, closets, thickness of walls, columns, or other interior features; used in determining the required number of exits or in determining occupancy classification.

**Gross (large) Motor Skills:** Skills that use large and or major muscle groups for movement activities.

**Group Size:** The recommended maximum number of children to be cared for in one group (such as the number of children in one classroom space).

**Head Start / Early Head Start:** Head Start is a program of the United States Department of Health and Human Services that provides comprehensive education, health, nutrition,

and parent involvement services to low-income children and their families. Early Head Start is the federal program that promotes the economic and social well-being of pregnant women and their children up to age three.

**Infant:** The term typically applied to children between the ages of 1 month and 12 months.

**Land Use:** Each land use designation, known as a parcel's zoning, comes with a list of approved uses that can legally operate on the zoned parcel. These are found in a government's ordinances or zoning regulations.

**Land Use Code (Planning Code):** That portion of a municipal ordinance that regulates the development and use of land within the jurisdiction.

**Low-Income Housing Tax Credits (LIHTC):** is a tax credit in the United States created under the Tax Reform Act of 1986 (TRA86) that gives incentives for the utilization of private equity in the development of affordable housing aimed at low-income Americans.

**Manipulatives:** materials that allow children to interact with concepts by using their hands and other tools to explore, experiment, and make meaning, that is, develop understanding.

**Marketing Plan:** is a written document that details the necessary actions to achieve one or more marketing objectives.

**Mixed-Use Development:** The practice of allowing more than one type of use in a building or set of buildings. In planning zone terms, this can mean some combination of residential, commercial, industrial, office, institutional, or other land uses.

**National Association for the Education of Young Children (NAEYC):** an organization dedicated to improving the well-being of all young children, with particular focus on the quality of educational and developmental services for all children from birth through age 8.

**Net Floor Area:** The area for which a tenant could be charged for occupancy under a lease. Generally, it is the floor space contained within a tenancy at each floor level measured from the internal finished surfaces of permanent external walls and permanent internal walls but excluding features such as balconies and verandahs, common use areas, service areas, and public spaces and thoroughfares.

**Pedagogy:** The study of being a teacher. The term generally refers to strategies of instruction, or a style of instruction.

**Permits:** Approvals required by local building authorities, including building, land use, fire, energy codes, etc.

**Perspective:** A 2 dimensional drawing that represents a 3 dimensional view with vanishing points.

**Pre-Design:** The architectural phase that includes data gathering and program definition, including a site survey, code research and analysis.

**Preschooler:** The term typically applied to children from the ages 3 - 5 years.

**Program Statement:** A written statement setting forth design objectives, constraints, and criteria for a project, including special requirements and systems, and site requirements. The program is usually prepared by the architect with input from the owners regarding goals, needs and function of the project, design expectations, available budget, and pertinent building code and zoning regulations. (see architectural programming)

**Project Budget:** The sum established by the owner as available for the entire project, including the construction budget, land costs, costs of furniture, furnishings, and equipment; financing costs; compensation for professional services; cost of owner furnished goods and services;

contingency allowances; and similar established or estimated costs.

**Property Acquisition:** the act of contracting or assuming or acquiring possession of a piece of property/site.

**Punch List:** A list of items to be completed or corrected by the contractor before Substantial Completion can be established. The punch list is prepared by the Owner's Representative.

**Record Documents:** Copies of the Drawings, Specifications, and all other contract documents that reflect the changes that have occurred since these documents were issued to bidders.

**Samples:** Physical examples that illustrate materials, equipment, or workmanship, and that establish standards by which the work will be judged.

**Schematic Design (schematics):** The first phase of a project's design process including preparation of studies to ascertain the requirements of the project, consisting of drawings and other documents illustrating the scale and relationships of the project components for approval by the owner. The architect also submits to the owner a preliminary estimate of construction cost based on current area, volume, or other unit costs.

**Section:** A drawing that represents a slice through a building (usually a vertical slice).

**Sensory Play:** Activities that are related to how things look, feel, smell and sound.

**Shop Drawings:** Detailed drawings showing how building elements will be fabricated, usually prepared by the fabricator or manufacturer.

**Site Analysis:** is an inventory completed as a preparatory step to site planning, a form of urban planning which involves research, analysis, and synthesis. It primarily deals with basic data as it relates to a specific site.

**Site Control:** Evidence that a developer has, or will have, control of a site by the time construction financing is approved.

**Site Plan:** A view of a project site, looking down from above, showing its horizontal elements, such as, buildings, vegetation, roads, contours, etc.

**Slot (child care slot):** A licensed space available for a child in a child care program. For example, if a center is licensed for 46 children, it has 46 slots. Also referred to as a space.

**Social Emotional Development:** the child's ability to interact socially and to form and sustain relationships with peers and adults. Emotional development is inclusive of the child's concept of him/herself. Healthy emotional development also includes the ability to understand how others feel and the ability to express one's own feelings.

**Specifications:** A part of the construction documents contained in the project manual consisting of written requirements for materials, equipment, construction systems, standards and workmanship, usually prepared in a standard 16 part format established by the Construction Specifications Institute.

**Square Footage:** Square footage is the building floor area, and it can be calculated as gross or net square footage. No uniform standard for computing building area for all types of buildings yet exists, and architects, builders and realtors each measure square footage differently. Square footage is not always an indication of the usable space in a structure.

**Subcontractor:** A contractor, usually a specialty contractor, such as electrical or plumbing, that is under subcontract to the general contractor.

**Submittals:** Items that the contractor must submit to the architect for review and approval

including such as items as shop drawings, product data, samples, mock-ups, test results, warranties, maintenance manuals, etc.

**Subsidized child care:** The Department of Family and Children Services helps very low income families afford quality child care. Working parents may be eligible for assistance for child care expenses if they meet the Federal Poverty Income Guidelines.

**Substantial Completion:** The point when construction is sufficiently complete in accordance with the contract documents, that the owner can occupy or utilize the building or space.

**Sustainable Design:** is an integrated planning and design process that promotes the use of environmentally sustainable practices to minimize negative environmental impacts and increase energy efficiency in the use of materials, energy and the development of space.

**Temporary Certificate of Occupancy (TCO):** A Temporary Certificate of Occupancy grants residents and building owners all of the same rights as a Certificate of Occupancy, however it is only for a temporary period of time.

**Toddler:** The term typically applied to children between the ages of 1 year and 3 years. Toddlerhood



begins with the second year of life, after a child's first birthday.

**Usable Floor Area:** In child care licensing regulations “usable floor area” typically does not include space used for offices, hallways, entryways, washrooms, kitchens, closets, locker and storage areas, furnace and boiler rooms and large or fixed equipment.

**Use Permit (Conditional Use Permit):** Pursuant to the zoning ordinance, a permit to authorize uses not routinely allowed on a particular site subject to compliance with specified conditions. May require a public hearing before the Planning Commission, Zoning Board, or Zoning Administrator.

**Value Engineering (VE):** A process used to review a project's design to ensure that it provides the best use of available project funds (also called value management).

**Variance:** A limited waiver from the requirements of the zoning ordinance, or building code, that may be granted because of special circumstances regarding the subject property.

**Voucher (Parent Based Subsidies):** Child care vouchers are certificates that allow families to get subsidized child care for their child. Parents with a voucher can select any child care provider

who has space available and accepts vouchers (for example, daycare centers, family care, or in-home care). With a voucher, the family pays a part of the cost of child care and the government pays the rest.

**Zoning:** Local ordinances regulating the use and development of property by dividing the jurisdiction into land use districts or zones represented on a map and specifying the uses and development standards (e.g. maximum height of structures, minimum setbacks, minimum usable open space) within each zone.

**Zoning Permit (Zoning certificate, Land Use Permit):** A permit granted pursuant to the zoning ordinance to allow development or use of a specific project on a specific site under the terms of the permit. Required prior to obtaining a building permit.

## REFERENCES AND RESOURCES

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Consumer Product Safety Commissions (1997). *A Handbook for Public Playground Safety*. Washington DC: US Government Printing Office.

Head Start (2005), *Head Start Design Guide: A Guide for Building a Head Start Facility*. Second Addition. Head Start Bureau, Administration for Children, Youth and Families, Administration for Children and Families, U.S. Department of

Health and Human Services.

## CLASSROOM FURNITURE AND OUTDOOR PLAY EQUIPMENT

Community Playthings

PO Box 2

Ulster Park NY 12487

Phone: 800.777.4244 (US only)

[www.communityplaythings.com](http://www.communityplaythings.com)

KaBOOM!

4455 Connecticut Ave. NW

Suite B100

Washington, D.C. 20008

Phone: 202.659.0215

[www.kaboom.org](http://www.kaboom.org)

Kompan Play Equipment  
KOMPAN, Inc.

930 Broadway

Tacoma, WA 98402

Toll Free: (800) 426-9788

Fax: (800) 949-9030

[www.kompan.us](http://www.kompan.us)

## PERIODICALS / PUBLICATIONS

Child Care Information Exchange (6 issues/year).

Available from CIEE at: 1.800.221.2864 or

[www.ccie.com](http://www.ccie.com)

## ORGANIZATIONS

### Head Start

U.S. Department of Health and Human Services  
Administration for Children and Families  
Office of Head Start  
1250 Maryland Avenue, S.W.  
Washington, D.C. 2002

### National Association for the Education of Young Children (NAEYC)

1509 16th Street, N.W.  
Washington, DC 20036-1426  
Phone: 800.424.2460  
[www.naeyc.org](http://www.naeyc.org)

## CALIFORNIA

California Child Care Licensing Regulations  
California Health and Human Services Agency  
(CHHS) California Code of Regulations, Title  
22, Division 12  
[www.dss.cahwnet.gov/ord/PG587.htm](http://www.dss.cahwnet.gov/ord/PG587.htm)

### California Child Care Resource and Referral Network

111 New Montgomery Street, 7th Floor  
San Francisco, CA 94105  
Phone: 415.882.0234  
[www.rnetwork.org](http://www.rnetwork.org)

### Building Child Care

Insight Center for Community Economic  
Development  
2201 Broadway, Ste. 815  
Oakland, CA 94612  
Phone: 1.888.411.3535  
[www.buildingchildcare.org](http://www.buildingchildcare.org)

## NEWYORK

### Child Care, Inc.

322 Eighth Avenue, 4th Floor  
New York, NY 10001  
Phone: 212.929.7604  
Fax: 212.929.5785  
[www.childcareinc.org](http://www.childcareinc.org)

### Day Care Council of New York

12 West 21st Street, 3rd Floor  
New York, NY 10010  
Phone: 212.206.7818  
Fax: 212.206.7836  
[www.dccnycinc.org](http://www.dccnycinc.org)

### New York Child Care Licensing Agency NYS OCFS Division of Child Care Services

South Building, Room 309  
52 Washington Street  
Rensselaer, NY 12144-2796  
Phone: 518.474.9454  
[www.ocfs.state.ny.us/main/childcare/default.asp](http://www.ocfs.state.ny.us/main/childcare/default.asp)

New York Child Care Licensing Regulations  
NYC Department of Health and Mental Hygiene  
(DOHMH)  
Bureau of Child Care  
[www.nyc.gov/html/doh/html/dc/dc.shtml](http://www.nyc.gov/html/doh/html/dc/dc.shtml)

## IMAGE CREDITS

Special thanks to the following designers and child care centers for allowing us to use images of their facilities in this guide:

Environmental Works Community Design  
Center

Paulett Taggart Architects

Spaces For Children, Charles Durrett and Louis  
Torelli

Evergreen State College Campus Children's  
Center, Olympia, WA

Martin Luther King Jr. Day Home, Seattle, WA

Pacific Primary, San Francisco, CA

San Francisco State University Children's Center,  
San Francisco, CA

The Children's Garden, New York, NY

The Children's Village Child Development  
Center, San Francisco, CA

Cover: Photograph by Tara Siegel

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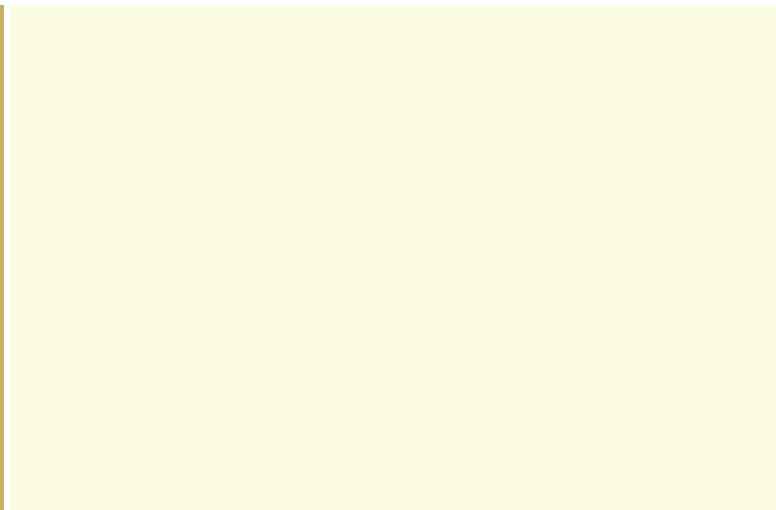
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