

April 22, 2009



# NORTHWESTERN MEMORIAL HOSPITAL

Parking Garage + Childcare Center



introduction

## guide to proposal



This proposal reflects the outcome of a series of design charrettes and visioning sessions the project team has held over the past three weeks. Working collaboratively, the team members considered their understanding of NMH's goals for the project while examining the scope of work, the site context, the program, the key considerations, and the design objectives. The many ideas discussed can be illustrated in the three schemes that are presented in this proposal. We do not believe we have solved every issue, but we are confident that we have developed a framework from which a logical but lyrical design solution can be generated.

We are seeking to present a facility that can respond to the urban context while maintaining the level of sophistication and dignity that NMH brings to the Streeterville neighborhood. The challenge of providing an efficient parking structure and a light-filled childcare facility—while also maintaining complete safety for pedestrians—provided the team with great opportunities for exploration. We consider the combination of a transportation hub and a childcare facility to be a chance for NMH to assist working families in finding balance. We look forward to further exploring our initial ideas with the NMH team and developing the final design.

We have organized the proposal into a series of chapters that start by exploring the site context and program from the urban and institutional level. The management plan and process for successfully completing the project by the end of 2012 is presented, along with fees in a later chapter. The next level of exploration is sustainability. Sustainability is an overarching team goal. It informs all of the design decisions and is not a singular element applied to a specific design solution or dependent upon one type of technology. Each scheme is anchored by an attitude toward providing a project that is as fiscally and environmentally responsible as possible. The site, program, schedule, and sustainability issues set the stage for the schemes themselves.

Each scheme was informed by an attitude toward interior planning of the program elements and their interactions. This then provided a scaffold from which ideas about exterior design could be approached. At this stage of the design process, there are multiple building narratives. The final chapter includes the high-level cost estimates to accompany the schemes.

# Table of Contents

- 01 Project & Program Understandings
- 02 Management Strategies
- 03 Sustainable Strategies
- 04 Design Strategies
- 05 Cost Estimate



project + program  
understandings

# context + challenges

## Urban Reality

NMH's downtown campus has changed tremendously over the last 20 years. The area is now a diverse, vibrant, and densely utilized portion of Chicago's Streeterville neighborhood. Contained between Michigan Avenue's commercial fabric and the lakefront, sprawl is not an option and every facility has to maximize its utility. The site context from the urban planning scale through to the investigation of underground utilities and soil conditions will be evaluated. Combining a parking garage with a childcare facility potentially creates some wonderful synergies for employees. Although there will be challenges to meet safety, natural light, and reasonable efficiencies within the complex, exploring solutions will be exciting.



## Added Value

Since this parking facility will not typically be open the public, it will not provide a revenue stream for NMH. Creating an efficient structure with low operating costs must be a driving design goal. It may also be possible to include other programmatic elements within the building that would provide revenue streams. By combining retail elements like a fitness center, grocery store, dry cleaner, and barber, the working parent's time-crunched week might be streamlined. Finding time to exercise is one of the biggest challenges for working parents, and by centralizing some of the day's activities, they might be able to squeeze 30 minutes of exercise into their schedule. These ancillary program elements may also provide some desired amenities to the neighborhood.



[www.parentingpeople.co.uk](http://www.parentingpeople.co.uk)



[www.bbc.co.uk](http://www.bbc.co.uk)

## Pedal Power

By supporting the needs of cycling commuters with secure bike storage and showering facilities, the institution is promoting alternatives to cars and highlighting health and well-being. NMH's proximity to the lakefront path, the Lake Shore Park running track, and tennis courts affords employees excellent exercise opportunities, and therefore, changing facilities are a crucial component. Explicitly stating the need to provide utility for alternative vehicle and car sharing sets the tone for the project. Combining these features with traditional structured parking highlights sustainability and makes visible the institution's commitment to environmental responsibility.



[bikecommutetips.blogspot.com](http://bikecommutetips.blogspot.com)



## Quality Benefits

“Our top priority is to be the very best place to work in health care.”

- NMH website employee benefits home page



[www.parentingpeople.co.uk](http://www.parentingpeople.co.uk)

According to a 2005 article in “Working Mother,” 25% of its employees have children under the age of 12. High-quality, on-site child care is a critical component of the hospital’s employee recruitment and retention policy. A well-designed facility has the potential to greatly impact on the lives of many NMH families. An on-site facility reduces the day-to-day stress in an employee’s schedule; even more so if the employee parks in that facility daily. The knowledge that the child is learning and growing close to the workplace is comforting and lets the parents focus on their responsibilities and challenges at work.

## Graphic Representation of Program

As we assemble information during the preliminary planning process, we will present it visually so all of the building constituents have a clear understanding of how the project is progressing. These visuals will include a space matrix, which identifies the type and size of each space in the program; organizational floor plans that show the relationship of the spaces to each other; and the building massing to indicate the relationship of the building to the surrounding context.

## Preliminary Programming

From our experience working closely with childcare directors and staff on previous projects, we understand how to program early education spaces. For this center, we have made assumptions based on our preliminary understandings and NMH’s RFP. During the programming phase of the project, we will re-examine these assumptions. We will take a close look at the goals of the center, the pedagogical approaches to be practiced; and the special values or programs that will provide identity for the center. We strongly recommend involving a consulting childcare provider in the programming process, perhaps the current provider, even if they are not contracted for the future center.



management strategies

## project execution + milestones

### **Timing**

The schedule identified by NMH provides reasonable time frames for all the activities required to meet an October 2010 construction permit and a January 2012 project completion. We understand that NMH has an approved Planned Development Amendment, but we assume that an Institutional Change of Character will need to be secured to permit the building. This activity will require presentations to the Zoning Department and the preparation of documents for the Planning Commission and the City Council. This will involve the Holabird & Root team working with NMH's legal and facilities staff. The various agencies have pre-scheduled meetings, and the team will need to establish a timeline and deadlines for the PD effort in order to meet all the meetings to avoid delays.

We assume that NMH will continue to engage the services of a traffic-planning agent, and therefore that is not included in our scope of services. Holabird & Root has an excellent Graphic Illustration department that offers exceptional computer-generated rendering and animation capabilities. These skills can assist our clients in communicating the visual, aesthetic, and spatial qualities of the project within the site at large.

### **Consent**

We would recommend that—in tandem with the Plan Development and Zoning Department work—the team engage the Department of Building (DOB) to inform them as to the project goals and address any potential challenges in meeting exiting and life safety criteria. In order to maximize solar access for classroom spaces, the design team has explored raising the childcare facility above the street-level grade. To meet the exiting

requirements for infant and toddler classrooms, ramps and areas of refuge are employed. This design solution will require input and approval from city officials, and we would recommend engaging with the DOB as early in the process as possible.

## Consensus

The design team recognizes the importance of NMH in the Streeterville neighborhood as well as the institution's desire to maintain its high-quality architectural presence. We anticipate providing support to NMH as it seeks community support for this project. We assume there will be community interest group presentations in which we would participate and provide graphic illustrations.

## Teaming

Holabird & Root prides itself in having a design process that is centered on **"listening."** We draw on our 129 years of practice but never approach a project with preconceived ideas. By working interactively with the NMH stakeholders, we can realize a highly functional facility that fosters a positive environment. Strong project management is an integral part of the design and production process of all of our projects. We have assembled an incredible team of experts with whom we and NMH have had successful previous experience. With work spanning the nation, Holabird & Root often works with a team of consultants and local experts. We consider our role to be that of a player-captain. Working collaboratively, the key team members will bring to bear their expertise and challenge each other's ideas, ultimately arriving at more refined solutions because of the collaborative approach. The space-planning exercise will be informed by the project schedule and will capitalize on energy efficiency. The architectural elements will be grounded by the

envelope analysis and parking efficiencies. Ultimately, the commitment of both management and staff to produce quality designs that respond to our client's needs is essential to a successful project.

## Process

The LEAN manufacturing system has been applied to construction projects, and Holabird & Root has experience through the recently completed Regents Hall of Natural and Mathematical Sciences at St. Olaf College. Boldt Construction Company employs the LEAN construction process to analyze the team organization, project goals, schedule, and cost modelling. A basis of design document was authored by the Owner, Architect, and Contractor, and all are held accountable to this document during the process. The schedule allowed for "last responsible moment" decision-making in order to maximize analysis time.

At St. Olaf College, working collaboratively, Boldt and Holabird & Root developed "real time" responses to cost issues and worked within a "target costing" model, focusing on the major subdivisions within the construction budget without always defining systems. Cost alternatives were identified up front rather than having a Value Engineering phase in response to budget discrepancies. Boldt engaged subcontractors early in the process to help refine the design. This application of the LEAN process was suitable since Boldt was operating as a CM-at-Risk; if a traditional Design-Bid-Build arrangement were employed for this project, elements of the philosophy could still be applied.

We have found that the LEAN topic has many parallels with our working practices, including:

- Establishing clear communication paths and defined responsibilities to foster clear and timely decision making
- Defining project goals and challenges
- Valuing the client's time as well as fiscal resources

- Considering the process as important or inseparable from the outcome (building)
- Visualizing the process through the use of visioning sessions, design charrettes, timeline schedules, drawings, and models
- Seeking appropriate innovation in design that is also grounded in logic and facts
- Attempting to eliminate as much waste from the design and construction process as possible, such as electronic file sharing, teleconferencing, and LEED waste-reduction goals
- Reviewing the quality of documents to reduce errors or conflicts
- Fostering long-term relationships with consultants and clients

## Transparency

At the project kick-off meeting, we would ask that NMH explain their decision-making process and identify the points of contact for various activities. We enjoy working collaboratively with our clients, and having assembled a team of experts for this project, we expect to have spirited visioning and design charrettes. We believe good ideas can come from anyone and usually occur when initial assumptions are challenged and tested; however, we have established a clear management structure and find that maintaining clear lines of communication greatly benefits the project.

Creative solutions that maximize the available funds for design and/or construction necessitate an understanding and respect for the goals, budget, and schedule. This is especially important with a project like this where there are multiple and potentially conflicting goals or requirements. A process that encourages interaction while allowing for effective decision-making must be established between the design team and the client group at the outset of the project. The project manager will consult with the NMH project representative to develop a work plan that establishes the project goals and scope, as well as identifies the key decision makers, project milestones, and budget.

## **Assemble**

We would expect to meet with the NMH project stakeholders and user groups frequently—as often as twice a week—during the Programming and Pre-Design phases. In the Schematic Design phase, we would expect to meet with NMH project stakeholders once a week and with the user groups once a month. At the end of this phase, we would prepare a cost estimate that would be submitted to the NMH stakeholders along with the design documents for review.

After NMH has returned their comments, we would commence the Design Development stage. During Design Development, we would plan to meet with the NMH project stakeholders once every two weeks and with the user groups at both 50% and at the end of the phase. Again, a cost estimate would accompany the design documents for NMH to review. As the design team prepares the construction documents, we would not anticipate formally meeting with NMH more than once a month or once every three weeks.

## **Review**

The Holabird & Root team is committed to providing a thorough, coordinated, and thoughtful design product for every project regardless of scale or scope. To that end, Holabird & Root institutes a quality review program for all projects. For example, during the design phases, the department directors of each discipline challenge the solutions of the design team to ensure that the concepts being proposed are efficient, appropriate to the goals of the project, affordable, and maintainable over time. During the Construction Documents phase, the department directors act as peer review groups to ensure that the documents for each task are complete and correspond to the work of other disciplines. The project manager establishes points throughout the project when quality reviews will be conducted.



# sustainable strategies



## operating sustainably

An experienced team qualified in LEED standards can provide a thoughtful design, attention to detail, and use of quality materials and building systems, but sustainability goes beyond just a LEED rating. A green building is a long-term, cost-reduction strategy due to the increased productivity of occupants, reduced operating costs, and reduced energy consumption. The result is a building that requires less energy, less repair, and is easy to maintain in the future.

Our goal would be to seek appropriate sustainable strategies and technologies that benefit both the environment and NMH. We don't propose a green gimmick but rather want to find sustainable synergies with the building and program. An example of this would be the employment of geothermal ground source heat pumps. Geothermal systems are a proven technology that KJWW and Holabird & Root have successfully implemented on more than two-dozen projects over the past decade. These systems have a long life expectancy; eliminate the need for a cooling tower and large quantities of make-up water; and reduce electricity usage, which in turn reduces carbon emissions.

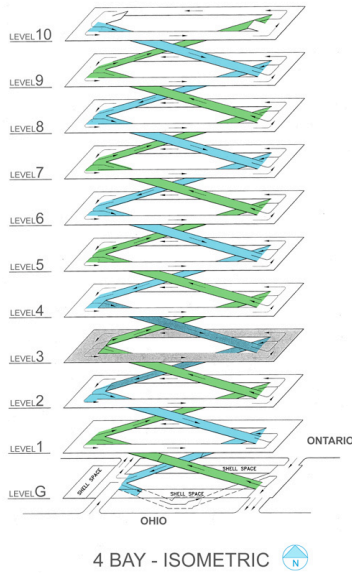
The large building footprint for the parking garage versus the smaller volume of conditioned space in the childcare center creates an opportunity to exploit geothermal technology in a tight urban setting. By installing a vertical geothermal field, we can provide heating and cooling with very low utility costs, similar to KJWW's recent Lincoln Hall project on the University of Illinois at Chicago campus. The proximity of NMH's site to Lake Michigan increases the potential for accessing ground water to increase the conductivity of geothermal bores. Geothermal systems represent significant energy savings: KJWW has modelled 18 potential

 design strategies

# introduction



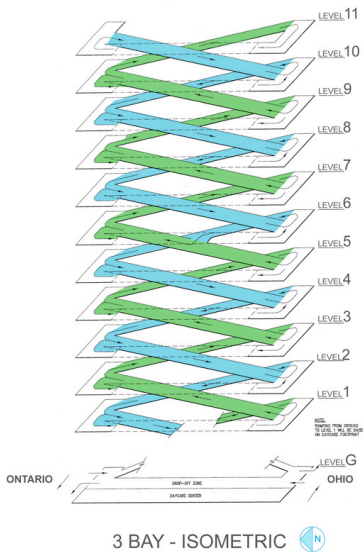
The major design challenge of this project is to find the right relationship between the large, impersonal, sterile parking structure and the smaller, child-scaled, “friendly,” protected environment of a childcare center. We choose not to envision the two programs as incompatible or battling, but to structure their relationship in a positive way. We rejected the first metaphor that seemed to describe the disparity between the major program elements: David and Goliath.



We established the following basic criteria:

- The parking structure has to be efficient, repetitive, and logical to be cost effective.
- The childcare center has to be filled with daylight; the children need access to safe, healthy outdoor play spaces; and the center has to feel warm, comfortable, and scaled appropriately to young children.

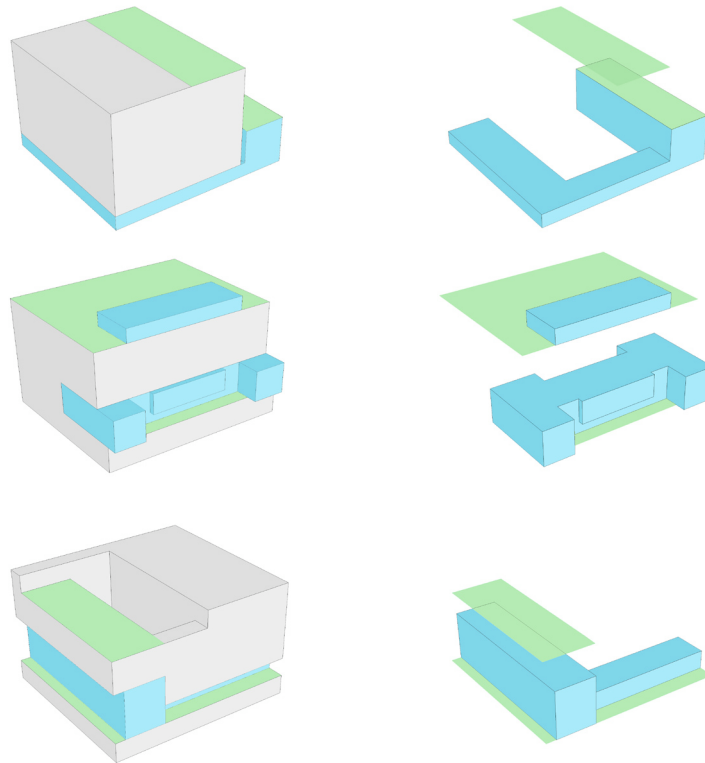
To pursue these criteria, the team analyzed Walker’s preliminary parking structure layouts showing how parking can work on the site. We learned that if the parking aisles run north to south, three bays fit with 33 ft. of open space to the west. If the parking aisles run east to west, four bays fit. The exact widths of the bays are tied to the angles of the parking.



We also created a 3D computer sun shading model to observe direct and indirect light patterns over the course of the year and during each day. We found that since the site is surrounded on all four sides by towers, there was not a clear choice between north-facing, south-facing, or west-facing schemes to maximize daylight. The high-rise directly south of the site in particular blocks direct southern exposure. We also learned, however, that there is enough space around the site and enough reflected light both north and south that while there won’t be a lot of direct light, there will be adequate ambient light and the center won’t feel like it is in a canyon of buildings.

**Our question very quickly became focused on how to carve away at the parking structure “block” to create healthy spaces for the childcare center, spaces that will be filled with daylight.**

“Carving Away” Massing  
Diagrams



In looking at alternate options with our team, we narrowed our ideas down to three different strategies rather than settling on a single scheme. We found that there were some questions that we didn't want to answer without input from NMH representatives. Also, some of the schemes presented life safety questions that will have to be further explored through a dialog with code officials from the bureau of fire prevention and DCFS licensing representatives, work that could not happen in the context of interview preparation. While realizing that these schemes pushed outside the boundaries of the code, we felt that they offered strong enough architectural benefits to be shared with the selection committee.

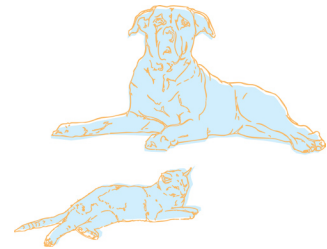
By developing three schemes, we hope to demonstrate our thinking, our graphic tools, and our interest in a collaborative process engaging all the design team members as well as our NMH representatives.

## THREE Metaphors: Garage and Childcare Center

We chose pairs of animals that symbolize the relationship between the program components.

### Dog + Cat

The cat and dog live in close proximity but remain independent. Their relationship is characterized by staying out of each other's way.



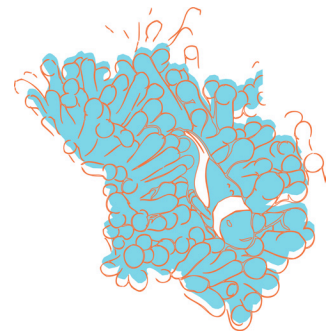
### Elephant + Mouse

The big, physically powerful elephant respects the much smaller but assertive mouse. Their relationship is characterized by a surprising equilibrium.



### Clownfish + Sea Anemone

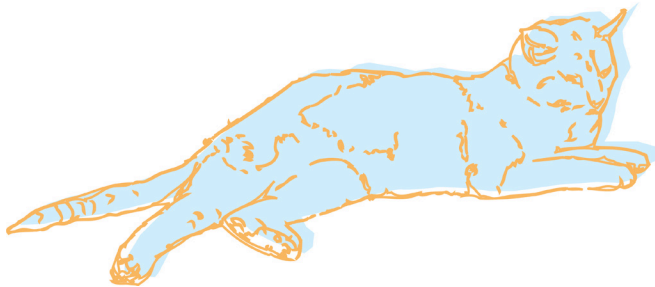
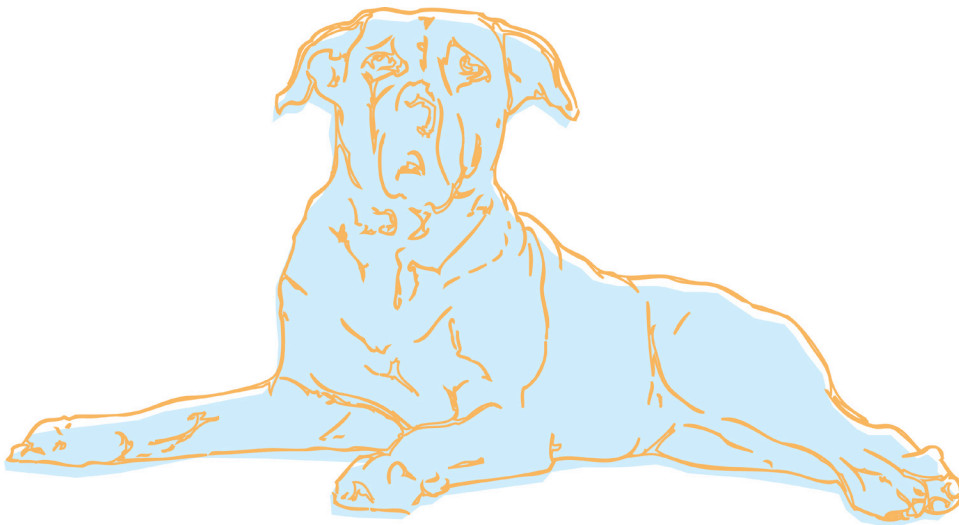
The clownfish lives within and is protected by the sea anemone's stinging tentacles. It cleans bacteria from the sea anemone to keep it healthy. They have a truly symbiotic relationship.



Please note that all schemes:

- Provide safe vehicular parking and drop off
- Provide access to the parking structure from both Ohio and Ontario
- Provide outdoor play spaces designed to allow children to find a place to develop their unique potential and to promote bonding with their friends
- Childcare portions of the building animate the facades for relief from repetitive garage

01 dog + cat



## a. section introduction

### Focus of Scheme: Problem/Need

- Fit all infant and toddler classrooms at grade and also locate them at the building's perimeter for natural light and ventilation

### Approach

- Adopt four-bay parking scheme with aisles running east to west and use footprint of southernmost bay for early education center
- Early education center forms a large "C" shape on the ground floor with a wing of classrooms on Ohio Street and another wing of classrooms on Ontario Street
- The older children's classrooms, multipurpose spaces, and staff support spaces are arranged vertically along Ohio Street facing south
- Outdoor play for 2- to 5-year-olds and school-age children is on the roof of the childcare portion of the building

### Key Considerations

- To provide good supervision, security, and administrative support for both ground-floor classroom wings since they are physically separated, an administrative "hub" is located in each wing on the ground floor.
- The southeast corner of the site will receive direct morning light so we locate the glassy entry lobby in that corner. We also create a gap next to the adjacent east building to capture that early-morning light.
- Toddler classrooms on Ontario have outdoor play areas at street level immediately outside their classrooms since they are farthest from the rooftop garden.

02 elephant +  
mouse





## a. section introduction

### Focus of Scheme: Problem/Need

- Create a compact scheme that joins all the spaces together to create a sense of community
- Provide maximum exposure to daylight for all the children's spaces and create views to the exterior of the green space

### Approach

- Adopt three bay parking schemes with aisles running north to south to take advantage of widest parking bay, as well as 33' additional space between the parking deck and property line
- Locate children's spaces in west-facing bay, away from the street
- Lift childcare center entry level to the fourth level of the parking garage, bringing it above the adjacent west buildings to maximize natural light and views
- "Areas of refuge" are provided adjacent to stairs where children can be protected from smoke or fire until adults can carry them down if necessary in an emergency
- Entire roof is utilized for a green, landscaped play area

### Key Considerations

- By using only the flat bay of parking, it allows the two ramped parking bays to be uninterrupted all the way up the building.
- The pedestrian walkway on west side is created at grade so bikers and others going to the childcare center don't have to traverse garage.
- The bike storage and locker rooms are located at the north, adjacent to potential retail nearby.
- The pedestrian walkway is created on the west side at grade so that bikers and others going to the childcare center don't have to traverse the garage.

03 clownfish +  
sea anemone



## a. section introduction

### Focus of Scheme: Problem/Need

- Permit daylight, views, and air movement into the center of the bulky structure
- Provide maximum daylight exposure and exterior views for all children's spaces
- Take advantage of potential lake views and face north toward the main Northwestern Memorial Hospital campus

### Approach

- Adopt four bay parking schemes with aisles running east to west and insert childcare program into the northernmost bay at third level above grade
- Create a ramp on Ontario providing sloped exterior egress from exterior terrace to the sidewalk (infants can be rolled in evacuation cribs if necessary)
- Entry level of early childhood center is "L" shaped with wing facing Ontario and wing facing west to keep childcare center as compact as possible
- The upper floors of the center form a bar along the north perimeter using the floor area of the northernmost parking bay
- A courtyard is formed at the top level of the childcare center to bring natural light and air into the south side of the children's spaces; create an outdoor play space for the children; and enrich the driver's experience when parking in upper levels of the garage
- A rooftop outdoor play area is created on the northern bay above the childcare center

### Key Considerations

- Views to the site from Lake Shore Drive are more open on the Ontario side than on the Ohio side. Locating the childcare program on the north makes the childcare center more visible to the public.
- Some of the north-facing rooms will have oblique views of the lake.
- Childcare entry at grade is located in the northwest corner where