ABSTRACT

Title of Thesis: THE NEW SCHOOL OF ORLANDO: A MULTIPLE INTELLIGENCE ENVIRONMENT

Noah Z. Harburger, Masters of Architecture, 2004

Thesis Directed by: Professor Ronit Eisenbach

School of Architecture

This thesis explores the potential for expanding the New School of Orlando into a cohesive campus while adhering to the school's philosophy of Multiple Intelligence development under the parameters of a set future growth.

Founded in 1995 and located within the city limits of Orlando, Florida, the New School is a private school serving children in kindergarten through eighth grade. The school provides an education rooted in Howard Gardner's Theory of Multiple Intelligences, which states there are eight different, yet equally valuable, types of intelligence. During the past nine years, the school has over tripled in size and has expanded from a two room school house to five full buildings, on one-quarter of a city block. The school is quickly reaching its maximum capacity (given its currents facilities).

THE NEW SCHOOL OF ORLANDO:
A MULTIPLE INTELLIGENCE INVIRONMENT

by

Noah Z. Harburger

Thesis submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
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Professor Ronit Eisenbach, Chair
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The New School of Orlando: A Multiple Intelligence Environment

> "Excellence in education and excellence in the arts go hand in hand. We are committed to bringing the arts to our students. Children achieve more in an enriched environment; dance, drama, music and art are vehicles to educate today's students and to widen cultural knowledge and awareness."
>
> -Morris Sorin (seen top left),
>
> Principal of The New School of Orlando

Founded in 1995 and located within the city limits of Orlando, Florida, the New School of Orlando is a private school serving children in kindergarten through eighth grade. The school provides an education rooted in Howard Gardner's Theory of Multiple Intelligences, which states there are eight different, yet equally valuable, types of

intelligence – Linguistic, Logico-mathematical, Musical, Spatial, Bodily-kinesthetic, Naturalist, Interpersonal, and Intrapersonal.

Since the school's founding, it has received a large amount of media coverage and has sparked the interests of parents who previously had not considered sending their children to a private school. The school rejects the all too common image of a stuffy over-serious preparatory school and lends itself to a liberal vivaciousness. As a result, the school has over tripled in size and has expanded from a two room school house to five separate buildings, covering one-quarter of a city block.

There are currently 138 students enrolled in the school, and the facilities are quickly becoming insufficient for the students needs. The school would like to expand to 350 students, an accepted ideal size for K-8 schools, but would like to do so in a way that is less haphazard than that which it has done up until now (i.e., expanding into adjacent office buildings, and setting up modular classroom units).

This thesis explores the potential of expanding the New School of Orlando into a cohesive campus while adhering to the school's philosophy of Multiple Intelligence development.

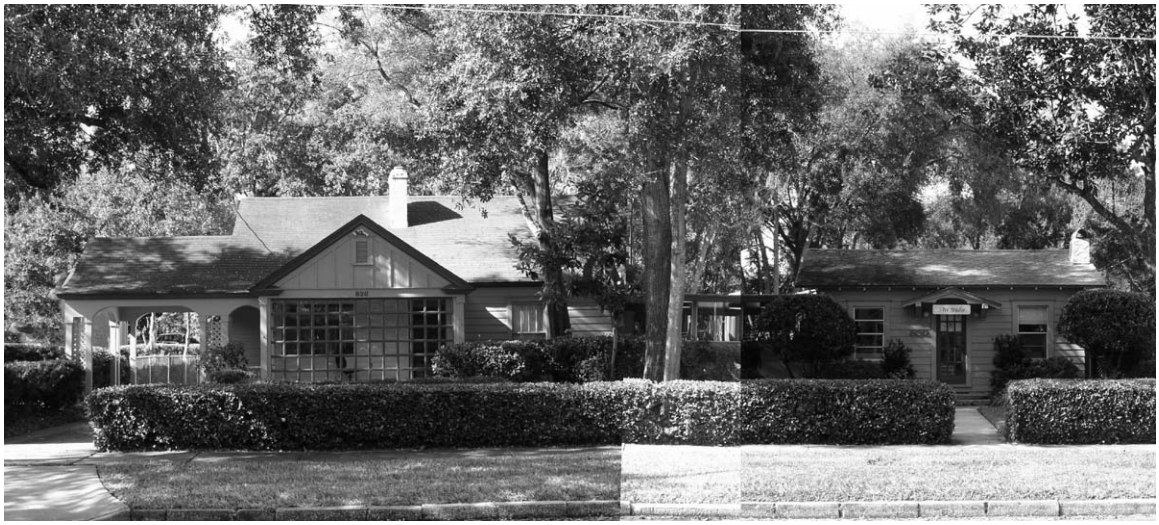

Fig. 3 – Original School House Building in which The New School of Orlando Begun

CHAPTER 2

Multiple Intelligence Theory

When Howard Gardner's book, *Frames of Mind: The Theory of Multiple Intelligences* first came out, it answered many questions for experienced teachers. There always has existed students who didn't fit the mold; Teachers know these students are bright, but they often didn't excel on tests. Gardner's claim that there are several different kinds of intelligence gave teachers and others involved with teaching and learning a way of beginning to understand those students. It helps people start to look at what these students could do well, instead of what they could not do.

Fig. 4 – Howard Gardner

For the last thirty years, Howard Gardner has worked closely with the Harvard Graduate School of Education through a research initiative known as Project Zero, where he has continued his development of Multiple Intelligence theory along with other methods of understanding the learning process. From 1972 to 2000 Gardner served as the co-director of Project Zero, and has since continued to contribute through a position on its steering committee.

The following Information on the Theory of Multiple Intelligences is adapted and excerpted from *The Project Zero Classroom: New Approaches to Understanding,* a publication based on Project Zero's 1996 Summer Institute presentations:

Howard Gardner's Theory of Multiple Intelligences challenges the traditional view of intelligence as a unitary capacity that can be adequately measured by IQ tests. Instead, this theory defines intelligence as an ability to solve problems or create products that are valued in at least one culture.

Drawing upon findings from evolutionary biology, anthropology, developmental and cognitive psychology, neuropsychology, and psychometrics, Gardner uses eight different criteria to judge whether a candidate's ability can be counted as an intelligence:

1. Potential isolation by brain damage
2. Existence of savants, prodigies, and other exceptional individuals
3. An identifiable core set of operations--basic kind of information-processing operations or mechanisms that deal with one specific kind of input
4. A distinctive developmental history, along with a definite set of "end-state" performances
5. An evolutionary history and evolutionary plausibility
6. Support from experimental and psychological tasks
7. Support from psychometric findings
8. Susceptibility to encoding from a symbol system

When he introduced the theory in *Frames of Mind,* Gardner suggested that each individual possesses at least seven such relatively independent mental abilities or intelligences. Core operations are among the eight criteria he uses to evaluate one or another candidate's intelligence. According to his definition, a core operation is a basic information processing mechanism--basically, something (like a neural network) in the

brain that takes a particular kind of input or information and processes it. In *Frames of Mind* and his more recent writings on the naturalist intelligence, Gardner asserted that each intelligence should have one or more of the following core operations:

Intelligence	Core Operations
Linguistic	syntax, phonology, semantics, pragmatics
Musical	pitch, rhythm, timbre
Logical-mathematical	number, categorization, relations
Spatial	accurate mental visualization, mental transformation of images
Bodily-kinesthetic	control of one's own body, control in handling objects
Interpersonal	awareness of others' feelings, emotions, goals, motivations
Intrapersonal	awareness of one's own feelings, emotions, goals, motivations
Naturalist	recognition and classification of objects in the environment

In Gardner's theory, the word intelligence is used in two senses. Intelligence can denote a species-specific characteristic; homosapiens is that species which can exercise these eight intelligences. Intelligence can also denote an individual difference. While all humans possess the eight intelligences, each person has his/her own particular blend or amalgam of the intelligences.

The following definitions of the intelligences, adapted by White and Blythe (1992), from the originals presented in *Frames of Mind,* list occupation, professions, disciplines, areas and directions an intelligence can take. But these are by no means the only examples; nor do any of these examples or end states represent the use of any one intelligence to the exclusion of all others. Individuals are never endowed solely with one intelligence. Rather, all brain-unimpaired people possess all the intelligences, which they blend in various ways in the course of creating something that is meaningful or performing a meaningful role or task.

Linguistic intelligence allows individuals to communicate and make sense of the world through language. Poets exemplify this intelligence in its mature form. Students who enjoy playing with rhymes, who pun, who always have a story to tell, who quickly acquire other languages--including sign language--all exhibit linguistic intelligence.

Musical intelligence allows people to create, communicate, and understand meanings made out of sound. While composers and instrumentalists clearly exhibit this intelligence, so do the students who seem particularly attracted by the birds singing outside the classroom window or who constantly tap out intricate rhythms on the desk with their pencils.

Logical-mathematical intelligence enables individuals to use and appreciate abstract relations. Scientists, mathematicians, and philosophers all rely on this intelligence. So do the students who "live" baseball statistics or who carefully analyze the components of problems – either personal or school-related – before systematically testing solutions.

Spatial intelligence makes it possible for people to perceive visual or spatial information, to transform this information, and to recreate visual images from memory. Well-developed spatial capacities are needed for the work of architects, sculptors, and engineers. The students who turn first to the graphs, charts, and pictures in their textbooks, who like to "web" their ideas before writing a paper, and who fill the blank space around their notes with intricate patterns are also using their spatial intelligence. While usually tied to the visual modality, spatial intelligence can also be exercised to a high level by individuals who are visually impaired.

Bodily-kinesthetic intelligence allows individuals to use all or part of the body to create products or solve problems. Athletes, surgeons, dancers, choreographers, and crafts people all use bodily-kinesthetic intelligence. The capacity is also evident in students who relish gym class and school dances, who prefer to carry out class projects by making models rather than writing reports, and who toss crumbled paper with frequency and accuracy into wastebaskets across the room.

Interpersonal intelligence enables individuals to recognize and make distinctions about others' feelings and intentions. Teachers, parents, politicians, psychologists and salespeople rely on interpersonal intelligence. Students exhibit this intelligence when they thrive on small-group work, when they notice and react to the moods of their friends and classmates, and when they tactfully convince the teacher of their need for extra time to complete the homework assignment.

Intrapersonal intelligence helps individuals to distinguish among their own feelings, to build accurate mental models of themselves, and to draw on these models to make decisions about their lives. Although it is difficult to assess who has this capacity and to what degree, evidence can be sought in students' uses of their other intelligences--how well they seem to be capitalizing on their strengths, how cognizant they are of their weaknesses, and how thoughtful they are about the decisions and choices they make.

Naturalist intelligence allows people to distinguish among, classify, and use features of the environment. Farmers, gardeners, botanists, geologists, florists, and archaeologists all exhibit this intelligence, as do students who can name and describe the features of every make of car around them.

In a recent article, "Are there additional intelligences?" Gardner examined two more candidate intelligences, naturalist, and spiritual, but ended up rejecting spiritual--at least for now--because it does not meet the eight criteria named earlier. He is still amassing evidence for other suggested intelligences. For example, existential intelligence--manifest in somebody who is concerned with fundamental questions of existence--does not, as yet, seem to meet all criteria. If decisions about intelligences are to be taken seriously, Gardner believes, they must depend upon examination of the available data.

CHAPTER 3

History of the New School of Orlando

Founded in 1995 by Morris and Karen Sorin, the New School of Orlando has a short but rich history. The new school got its start after Morris and Karen, along with several other faculty members from The Hebrew Day School of Central Florida left their old school with the desire to start their own school – free from the constraining infrastructure that had been keeping them from teaching the way they had wanted. In 1994, the Sorins purchased a small two room Montessori school in the city of Orlando. For an entire year the Sorins, along with the handful of faculty from the Hebrew Day School, went without pay, while pouring their own money (and sweat) into the new school house in order to get it ready for students. Days were spent between the faculty members trying to figure out a proper name for the school, but the final name is a result of a moment of panic by the founder, Morris Sorin. As he was filing some forms at City hall that would allow for some minor construction, a county clerk required, from Mr. Sorin, to know the school's name. Morris Sorin is proud to tell the story of that day:

> "We were always talking about how we would do 'this' at the new school, and how we can't wait to do 'such and such' once we have the new school. So I just figured, we had already agreed on a name for the school. Some of us just hadn't realized it yet."

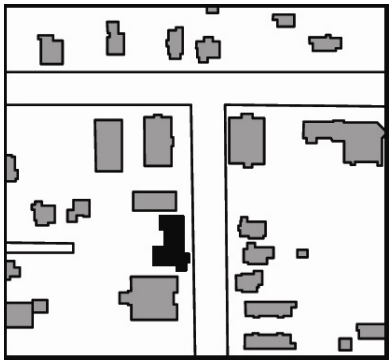

Fig. 5 – Original New School of Orlando Building

Fig. 6 – View of the Front of the original New School of Orlando Building

After a year went by, they were finally able to open the school, filling it with students they had known from the Hebrew Day School, as well as new students they had recruited along the way. On opening day, the school had 34 students between Kindergarten and Eighth grades. Within the first two years, the New School grew at such a rate that expansion was necessary. They started leasing the office building next door, which had been a dentist's office.

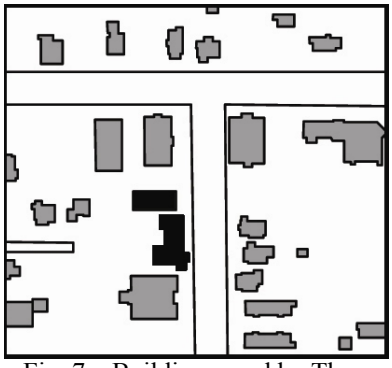

Fig. 7 – Buildings used by The New School after first expansion.

Fig. 8 – Adjacent Office Building used by The New School after first expansion.

After the renovations were finished, the New School had three new classrooms. The next expansion took place in 1999, when the Sorin's purchased a nine room office building on the corner of East Marks Street and Irma Avenue. This building became the new center for the school, providing a reception area, a common room, teachers' lounge, principal's office, and all of the middle school's classrooms.

Fig. 9 – Front of the New Middle School.

Fig. 10 – New School Campus including New Middle School acquisition.

The latest addition took place in 2001, when the New School added a Modular Classroom behind the old Montessori school building. This addition provided a new Music and Dance room as well as a Woodshop.

Fig. 11 – Current configuration of The New School Campus

Fig. 12 – Music area inside modular classroom

Fig. 13 – Woodshop area inside modular classroom

Today, 138 students attend the New School, and they are continuing to grow. The school will be at maximum capacity when it reaches 180 students; however, upon visiting the school, it already appeared cramped. The school has very little exterior play space. A miniature soccer field (20 feet wide) has been squeezed in to the space between the modular classroom and the old dentist's office, and a small one-hoop basketball court and playground lines the back of the property. Currently, a typical gym activity may include running a lap around the adjacent block.

Fig. 14 – Standing in front of the playground facilities

Fig. 15 – View of Make-shift Soccer Field

On a positive note, the school excels in academics and the arts. Most of the students are able to get into the top prep schools in the area, and many of their early students have gotten into IV League Universities. Their students have won countless art awards and everyone in the school participates in the number of annual school performances. In December of 2003, the entire school put on a performance dealing with opera. Michael McLeod, a Staff Writer for the Orlando Sentinel, had this to say in his article on December 29th:

> [This] is no ordinary grade-school holiday show.
>
> This one features a cast of 145 students, ages 5 through 13, and none of them is dressed as archangels, elves or dancing reindeer.
>
> This is the annual *Winterfest* of the New School… The school has a tradition of upping the ante with its holiday shows, challenging students and surprising parents with unusual productions. Once it was fractured fairy tales. Another year it was scenes from Broadway musicals.
>
> This year, it's opera.

Bizet. Gounod. Puccini. Mozart, in German. Verdi, in the original Italian. All of it mixed in with a few other traditional Italian folk songs…

When Sorin and co-director Etty Baru proposed the idea, even Sorin's husband, school director Morrie Sorin, was taken aback. "I thought they were crazy," he says.

Opera is the heavy lifter of the performing arts. Everything about it is big: themes, casts, costumes, voices, waistlines. Kids are little. Karen Sorin seems to think this is not a problem. At least that's what she keeps telling herself.

"Our kids don't know they aren't supposed to be singing opera," she says. "They don't know it's supposed to be too hard for them. They think it's fun."[1]

[1] McLeod, Michael "Sesame Street Meets Puccini" Orlando Sentinel; 29 Dec. 2003; pg. E.1

CHAPTER 4

Site History

The Seminole people lived in the region of present-day Orlando before white settlers arrived in the late 1830s. Fort Gatlin was built near the site of today's city during the Second Seminole War, and Orlando grew up around it. First named Jernigan for a local trader, the city adopted its current name in 1857. Orlando's economy depended on cotton cultivation until the American Civil War (1861-1865), and for a time after the war the city earned a reputation as a lawless cattle town.

Orlando was incorporated as a city in 1875; the railroad arrived in 1880. In the 1890s citrus production became the primary economic force, although local cultivation had begun some years earlier. For the next half century Orlando remained an obscure county seat and citrus processing center, a small city almost completely untouched by the state's boom in tourism and development that was concentrated along Florida's southern Atlantic coastline. In the mid-20th century the development of the Cape Canaveral space launch facilities to the east spilled small levels of growth into Orlando, as did an increasing trend by residents in northern states to winter in Florida[1]. Despite what intuition might suggest, the development of Disney World, and the Magic Kingdom had very little impact on the city of Orlando at all. While the money gained from tourists might help the state as a whole more than if these tourist traps had not been developed, the majority of the tourism destinations are located outside the city limits of Orlando

[1] Historical data collected from Microsoft® Encarta® Online Encyclopedia 2001 at: http://encarta.msn.com

(Disney World, for instance is located in Buena Vista). In fact there is little to no tourism within the downtown area itself. Though with the development of Universal Studios, MGM, and hordes of other tourist attractions during the late 1980's and early 1990's, a pocket of international tourism, business and commercial development has sprouted about ten miles south of the city's center (Fig. 16).

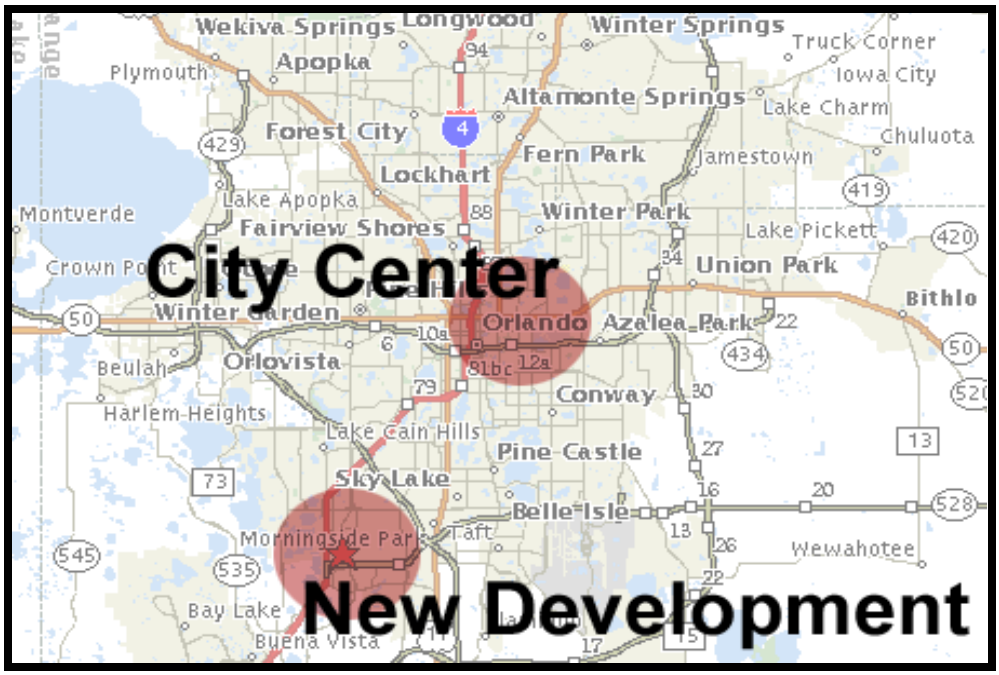

Fig. 16 – Relationship between Orlando City Center and New tourist development

Site Description

The city of Orlando is located in the center of the Florida Peninsula. It is a landlocked city about an hour's drive from the Atlantic Ocean, and an hour and a half from the Gulf of Mexico.

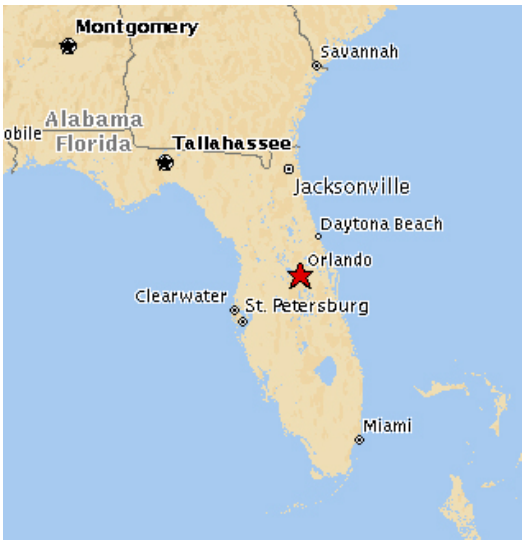

Fig. 17 – Map of Florida

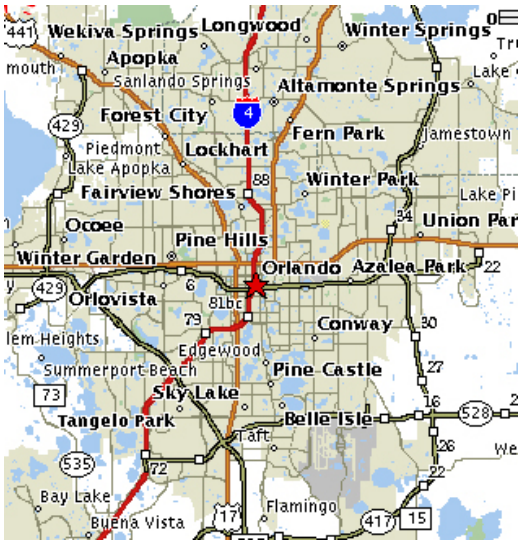

Fig. 18 – Map of Orlando

The project site is located several blocks north of the town center. The overall zone that is being considered for this project is found between three lakes: Lake highland, Park Lake, and Lake Concord. The New School of Orlando currently resides on the northern half of a city block in Orlando, Florida. The block measures roughly 600 feet long (north-south) and 400 feet wide (east-west), and is located between Magnolia and Irma Avenues, just South of East Marks Street (Fig. 21). Around the site, Magnolia Avenue is a busy four lane, one way road heading north. It is filled with office and retail buildings.

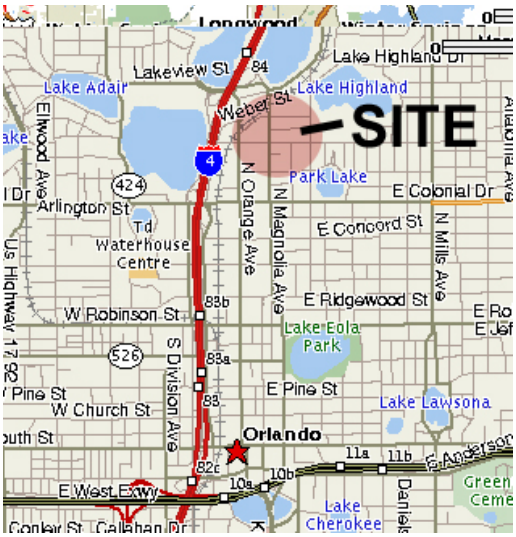

Fig. 19 – Location of Project Site in Relation to Orlando's Center.

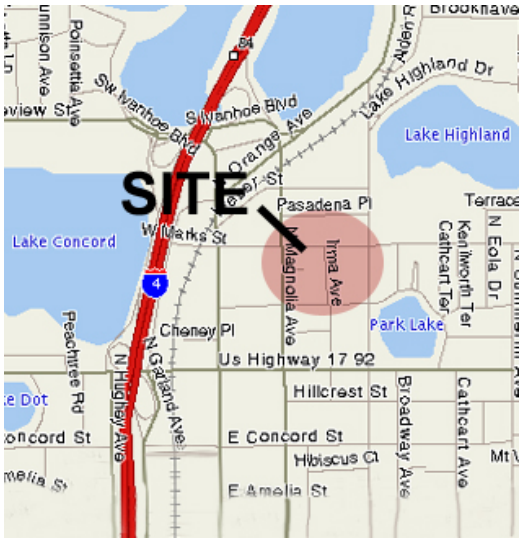

Fig. 20 – Project Site (note relationship to highway and train tracks

To the north, it connects with Orange Avenue and leads up to Winter Park. Marks Street is a two way, two lane residential road that has been converted over the years into a semi-commercial district. Most of the homes along Marks Street now house offices of various sorts. To the west, Marks Street terminates at Lake Concord, and to the east it terminates with North Hampton Avenue, after passing Lake Highland and Lake Highland Preparatory School. Irma Avenue is a short two lane, two way street, running only the length of the city block. Aside from the New School, Irma Avenue contains an architectural office and several houses. Irma Avenue terminates to the north with East Marks Street, and to the south with Park Lake Street.

The area proposed for the New School site consists of a larger area than the school currently posses (Fig. 22). The new site would require the closing of Irma Avenue between East Marks and Park Lake Street, and a joining of the current block with the block immediately to the east. The school would then be located at the center of this new larger block (Fig. 23).

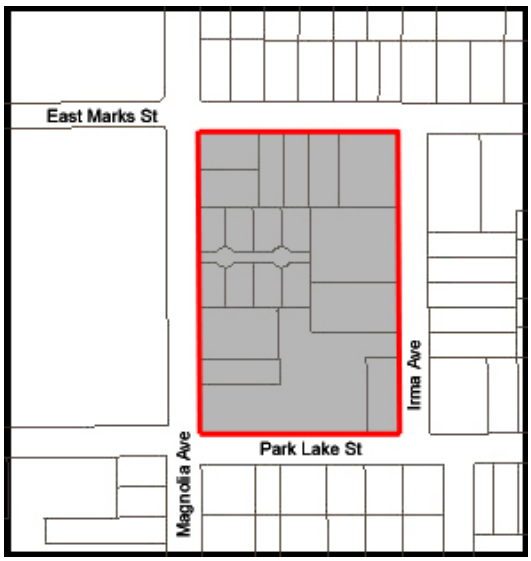

Fig. 21 – Orlando City Block

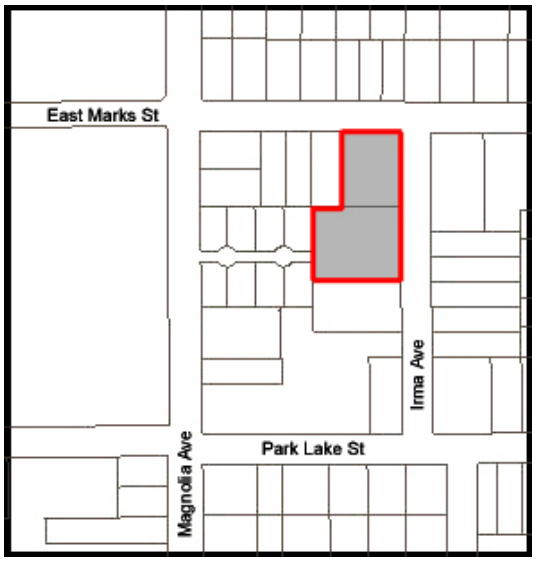

Fig. 22 – Current New School Site

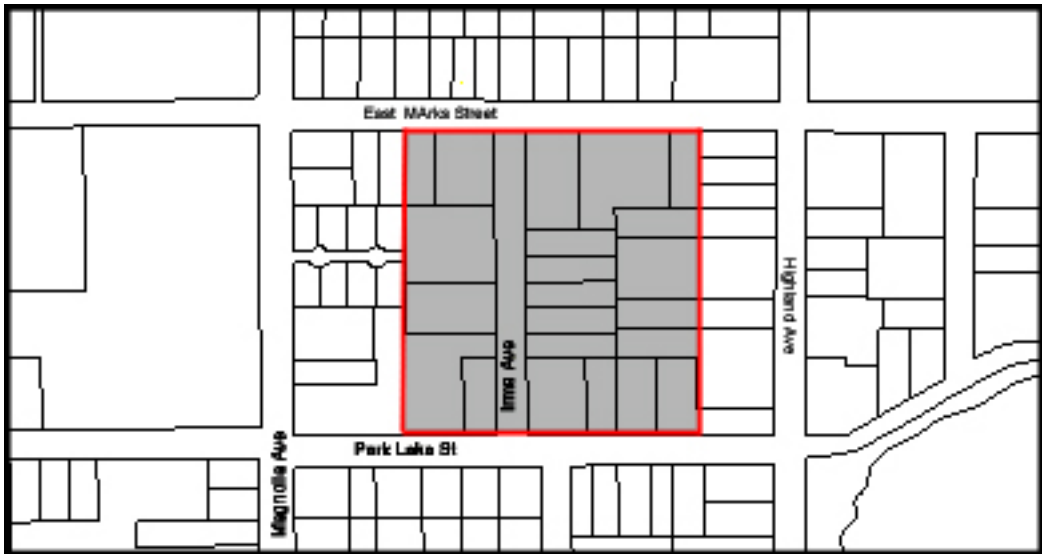

Fig. 23 – Proposed New School Site

Along Irma Avenue, the current school's site consists of two small one-storey office buildings, a modular classroom unit, a two room Montessori school-house, and a one room shed-house. Along Marks Street, to the west of the current site, there is a two-storey office building which houses an IT operation, and then two empty parcels which connect to Magnolia Avenue. Across Magnolia Avenue is an eight-storey parking garage.

The entire site has been historically residential; however with many of the houses now converted into office, the area is being rezoned for a type of high density residential development that will still allow for the school's development and growth. Currently the site is located directly on the edge between the cities commercial and residential uses, with Magnolia Ave being a primarily commercial street.

Orlando has an average annual temperature of 72.4º Fahrenheit, 50 inches of rain per year and average winds of 9 miles per hour. There is an average of 110 rainy days per year, 250 days per year where the temperature is above 80º Fahrenheit, and only 30 days per year when the temperature falls below 45º Fahrenheit[2].

Due to the flat nature of the area, and low altitude, many of the dips in topography result in natural lakes. These lakes have been engineered to receive the city's storm water runoff. The storm water for the site drains to the north-west into Lake Ivanhoe. For further site analysis look at Figures 24-31.

[2] Weather average information was taken from the National Weather Service and the National Oceanic and Atmospheric Administration at http://www.nws.noaa.gov/

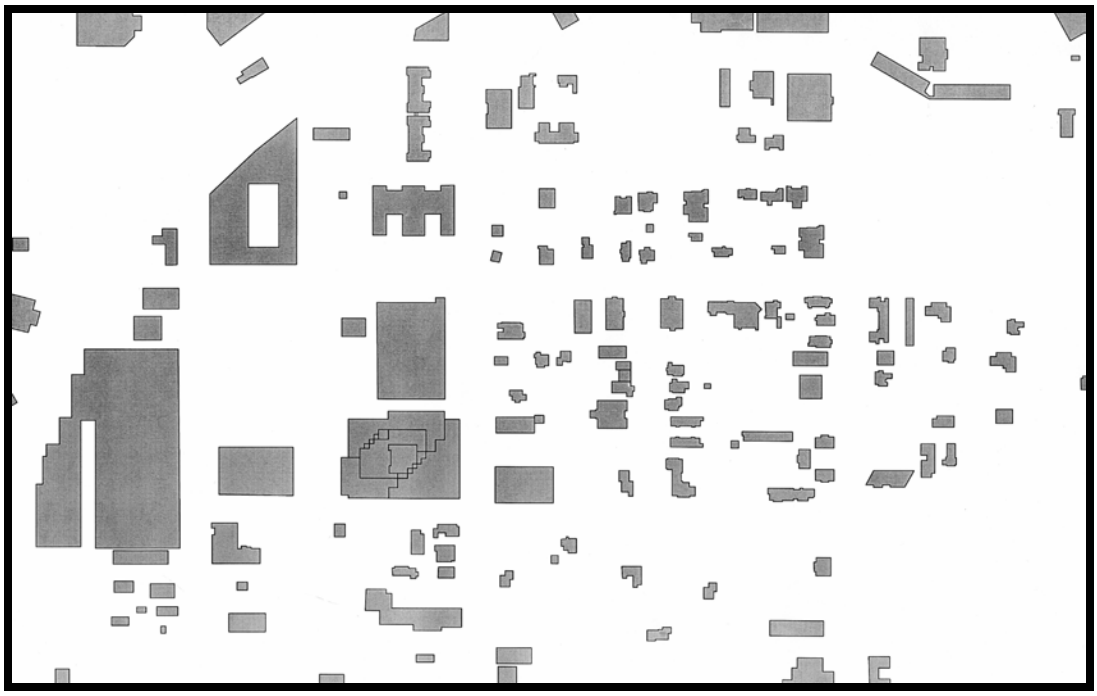

Fig. 24 – Figure / Ground Study. Notice how sparse the current development is. This will be contrasted in later diagrams showing site development.

Fig. 25 – Major Axis – Frontage is a dominant feature along Magnolia Avenue.

Fig. 26 – Minor Axis – East Marks Street receives more sides of buildings than it does fronts, thereby making it a minor axis.

Fig. 27 – Street Layout – This diagram shows the traffic direction of the various streets surrounding the New School site.

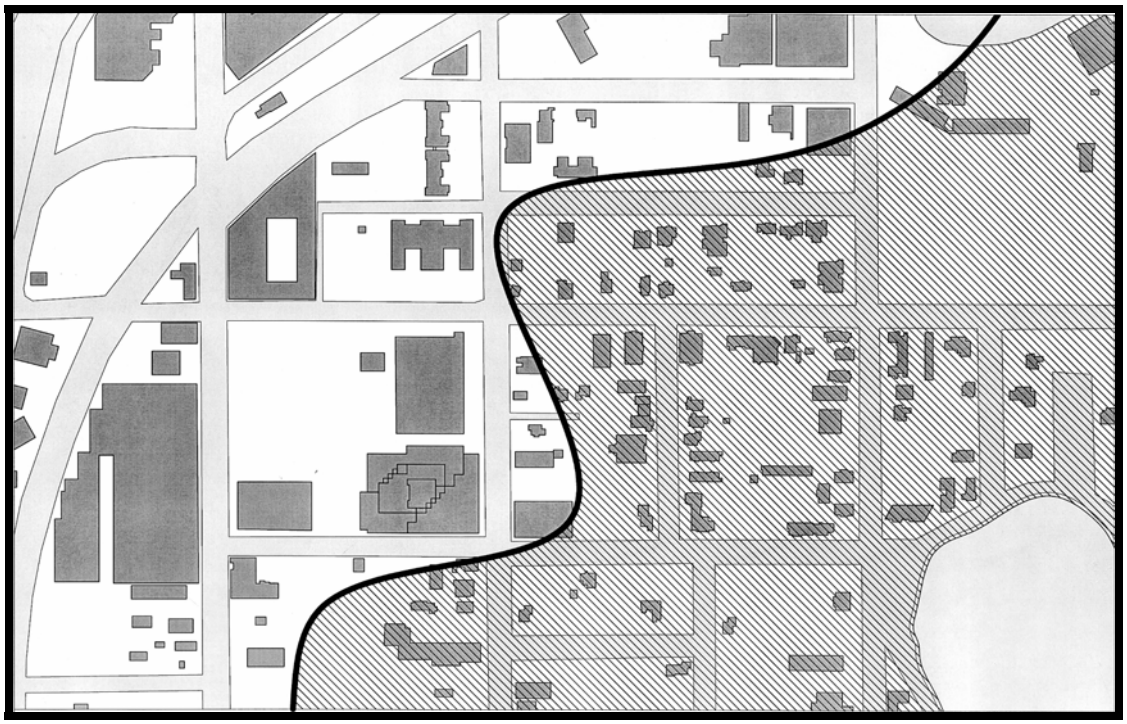

Fig. 28 – Residential Edge – This shaded area illustrates where there is residential development and the non-shaded area demonstrates where there is currently commercial development.

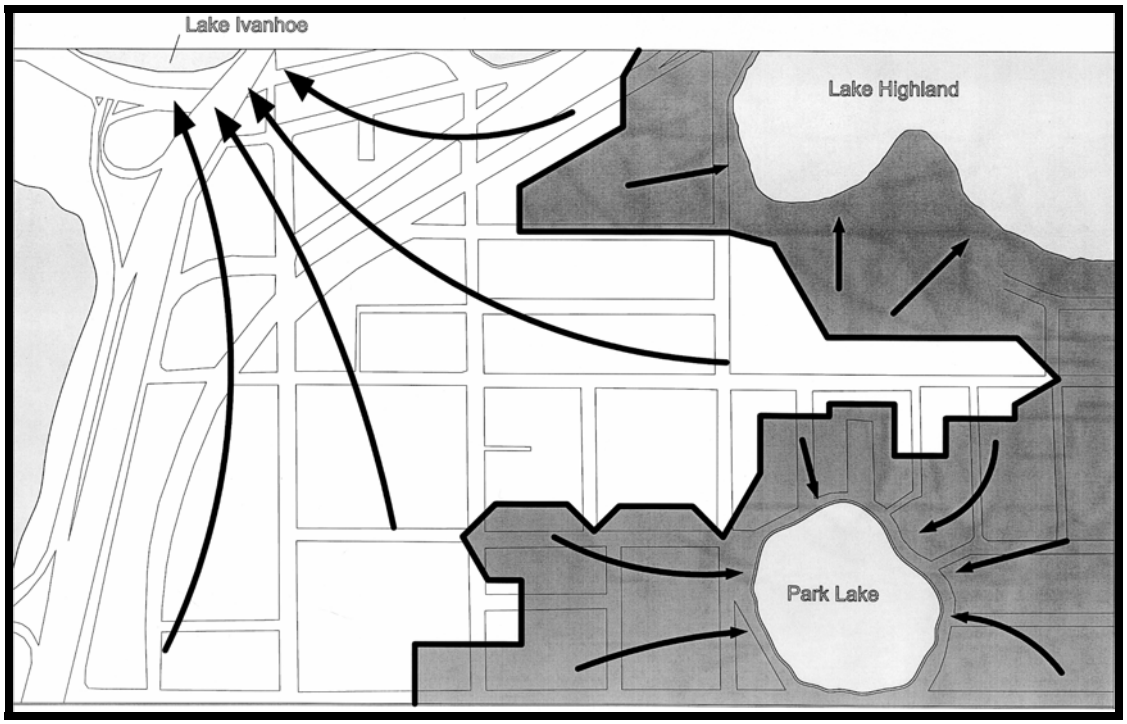

Fig. 29 – Storm Water Management – This shows the lakes, to which certain areas drain. Notice how the majority of the city block on which the New School is located drains up to Lake Ivanhoe.

Fig. 30 – Waste Water Management – This illustrates the wastewater management system surrounding the New School site. There are basic down drains on Magnolia and Irma Avenues, and a pump powered system gathering waste, heading east under Marks Street.

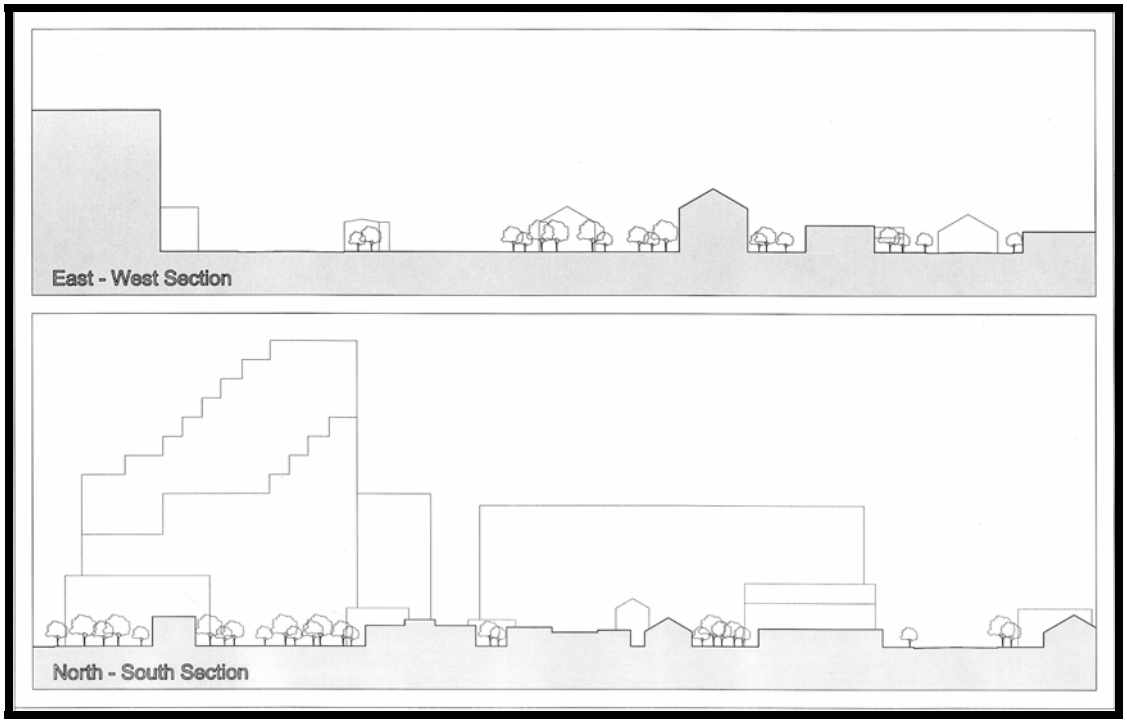

Fig. 31 – These are site sections cut through the site in various directions. Take note of the contrast in scale between the residential buildings that make up the site and the large commercial structures in the background.

CHAPTER 5

Conceptual Precedents

Since the school is based on Howard Gardner's theories of Multiple Intelligences, it seems crucial to look at interpretive places that respond to each of Gardner's eight intelligences (i.e., Linguistic, Logico-mathematical, Musical, Spatial, Bodily-kinesthetic, Naturalist, Interpersonal, and Intrapersonal).

The first intelligence – Linguistic – seems to be absent of any space, for it is comprised of words and speech. However, one of the most common forums for verbal discourse is the debate stage. As such a brief look at the formal components of a debate stage is appropriate (Fig. 32).

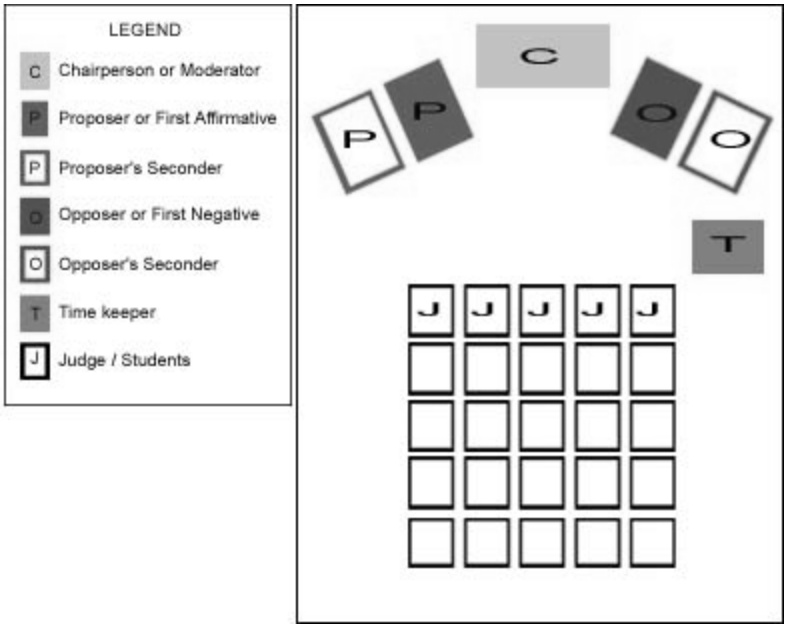

Fig. 32 - Standard debate organization. The elements of this could easily find themselves built into a classroom. While desks and chairs might just be moved into place, permanent treatment of the interior classroom walls might prove to bring a more formal element to this organization that can only be noticed when the desks are arranged as so.

The second of Gardner's intelligences – Logico-mathematical – might find itself best illustrated through a complex rhythm or sequence. A prime example of this is Bernard Tschumi's Parc de la Villette, in Paris. The park is organized with a grid structure that connects fire-engine red architectural elements with a elegant promenade, comprising a series of provocative framed vistas that unroll like a film-strip as visitors tour the park (Fig. 33, 34).

Tthe Parc de la Villette's gains a deconstructive nature through its inversion of the traditional hierarchy of structure over ornamentation. The insides of structures are, in places, exposed on exteriors and used as decoration. The site also demonstrates how formal construction principles can be designated by purely ornamental considerations[1]. The design for the new school could easily use a logarithmic sequence as the basis for its bay articulation, or structural grid, so that the overall form is subservient to a mathematical construct.

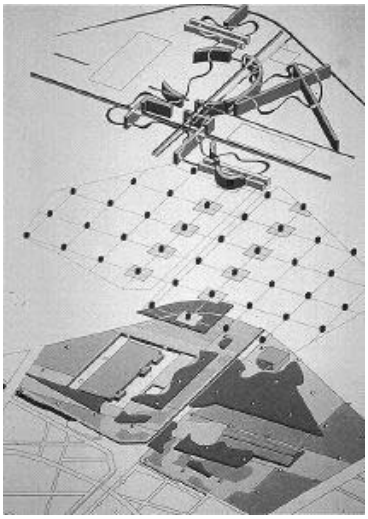

Fig. 33 – Organizational hierarchy of the Parc de la Villette

Fig. 34 – One of the Fire-engine red sculptures found in the Parc de la Villette

[1] Images of Parc de la Villette taken from http://www.pixcentrix.co.uk/

In regard to Gardner's third and fourth Intelligences – Musical and Spatial– a look at Sound Art, a popular form of interactive expression in Austrailia, could be useful. Sound Art explores the physical relationship between sound and the public and integrates sculpture, audio electronics and video. Interactivity is used to heighten the aesthetic experience, engaging and directing participants in an activity of sensory exploration. In particular, Iain Mott's work (Fig. 35 and 36), in the field of computer-based, interactive installation, examines the physical relationships of participants with sound, sometimes placing them in performance roles or drawing their attention to their own physicality within the acoustic space. It is truly innovative to look at space as an area defined by the boundaries and dynamics of sound.

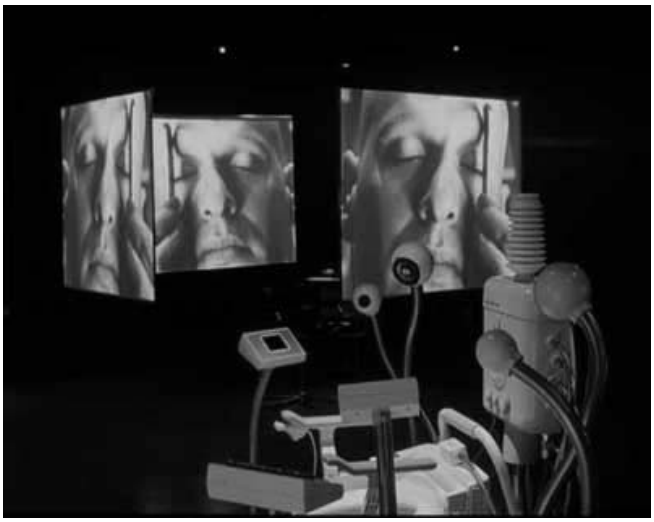

Fig. 35 – "Close" - a multi-screen video projection installation that blurs the separation between viewer and subject by means of 3-dimensional sound. The viewer wears headphones and hears sound from the perspective of the subject - an effect

Fig. 36 – "The Talking Chair"

In the installation "The Talking Chair," Mott allows participants to control the trajectory of sound through the space surrounding their body. The work consists of a frame

supporting a battery of six audio speakers, a central chair, and an ultrasound wand interface. A remote audio system is linked by cabling. Seated in the chair, participants interact with the sculpture by means of the wand which generates 3-dimensional information used to produce sound and draw its trajectory. As the sound object moves, its sonic qualities change in response to its proximity to the listener, velocity and spatial location[2]. While Sound Art might be a little excessive in terms of a design element in The New School, a element where a space's boundaries are defined by the principles and dynamics of sound could be quite intriguing. Take the acoustic properties of a barrel vault as an example: Despite the distance between people on either side of a room, the concave curve of the ceiling sends sound along the surface from one side of the room to the other (Fig. 37)

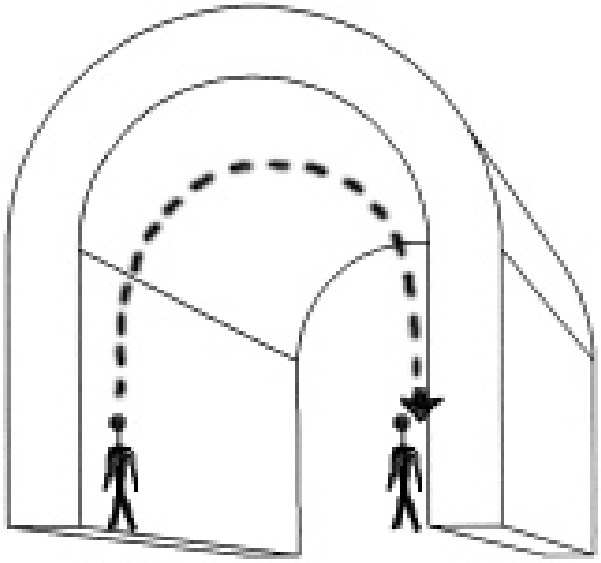

Fig. 37 – Even soft whispers can be heard from opposite sides of the room due to the acoustic properties of the vault.

[2] Information pertaining to Iain Mott and Sound Art was gathered from "Reverberant" at http://www.reverberant.com

Gardner's fifth intelligence – Bodily-kinesthetic –can be illustrated through a more conventional building type: the Amphitheater. Located on the Ohio State University campus, Browning Amphitheater (Fig. 38) is tucked into the side of a hill between the campus' south residence halls and the south quad. As a result of its location, and greatly due to its modest size, the amphitheater is host to many spontaneous performances and activities. Impromptu activities ranging from dance and gymnastics to hacky sack and mock dueling are common occurrences. The universal willingness of passers-by to use the space and perform without reason can be attributed to specific qualities of the Amphitheater itself. For example, the modest size of the theater, keeps individuals from being intimidated by the stage and seating. Furthermore, the hill and surrounding trees, secure the theater's privacy, giving the performer/inhabitant, near ownership of the space.

Fig. 38 – Browning Amphitheater; Columbus, OH

A good precedent that aims at reaching the Naturalist intelligence is the landscaping at the Harrisburg Area Community College (Fig. 39). The entire campus has been designed as a garden and arboretum for the enjoyment of students, staff and the community. The 212 acres of the college encompass a diversity rarely found within the boundaries of a

Fig. 39 – HACC Arboretum

busy capitol city. Wetlands, meadows, and woods provide a sanctuary and habitat for many different species of insects, animals, birds, and native plants.

In 1989 the college began to develop the gardens that now beautify the campus and provide inspiration for gardening enthusiasts. There's an emphasis on native plants, ground covers, flowering perennials, roses and spring bulbs. But the most unique aspect of this arboretum is that every plant, tree and flower grouping is labeled with a sign that provides one with its scientific and common name.

The seventh intelligence – Interpersonal – is difficult to analyze in this manner, because it is an element that is always around. Person to person / social interaction is a constant in any location as long as there is more than one person present. While certain activities (e.g. team sports, meetings, etc.) may encourage the use of this intelligence more directly than others, the form of spaces that such activities take place in (gymnasium, open field, conference room) are bound more by traditional form than social necessity. However, given large spaces, two people find it easier to converse if they are able to remove themselves from the larger group. The niche is the most common physical manifestation of this principle. Currently at The New School, classrooms are designed in an L-shape (Fig. 40, 41). This configuration allows the teacher to meet with students

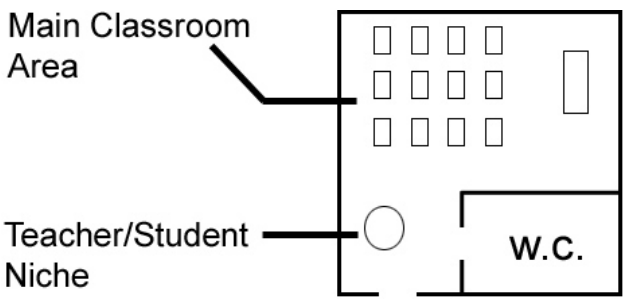

Fig. 40 – Basic New School Classroom Configuration


Fig. 41 – Inside a Classroom

individually, in an area separated from the rest of the class. This helps ease the student and gives the student more confidence, because he or she is no longer in the direct realm of scrutiny by classmates.

Fig. 42 - U.N. Meditation room

The last of Gardner's intelligences has a strong history of being nurtured through physical form. Intrapersonal intelligence has often been developed through the use of meditation. In general, meditative spaces use balance to create a sense of calm, often bringing light and color into a room in unique ways. The United Nations headquarters in New York has a small meditation room that is as simple as it is beautiful (Fig. 42). Bringing light into the space both from above (along the sides of the walls) and from below (a beam shooting up from the center of the room), creates a balance that is full of energy. The inhabitant is then free to direct his attention forward to the cubist painting on the far wall, which contains the same energized balance of the room. It is crucial that spaces such as this provide a sense of detachment from the rest of the building, and as such, a detachment from the rest of the world. These spaces are quite, filled only, at times, with white noise. In a classroom setting, such a space could be developed simply as a nook, around a corner from the rest of the class. Or in a school setting, a pavilion can be set aside in a location that faces back to the school, offering a different perspective for the inhabitant, reinforcing the sense that he / she is removed from the school.

CHAPTER 6

Building Precedents

It is necessary to turn to precedents of schools to form an understanding of formal classroom-school relationships, and different approaches to how a school relates to its site. The first school to look at is Aesch Primary School in Zurich, Switzerland (Fig. 43 – 45). When looking at the floor plan one immediately notices how the classrooms and the administrative rooms are separated to form a central outdoors common space that can be

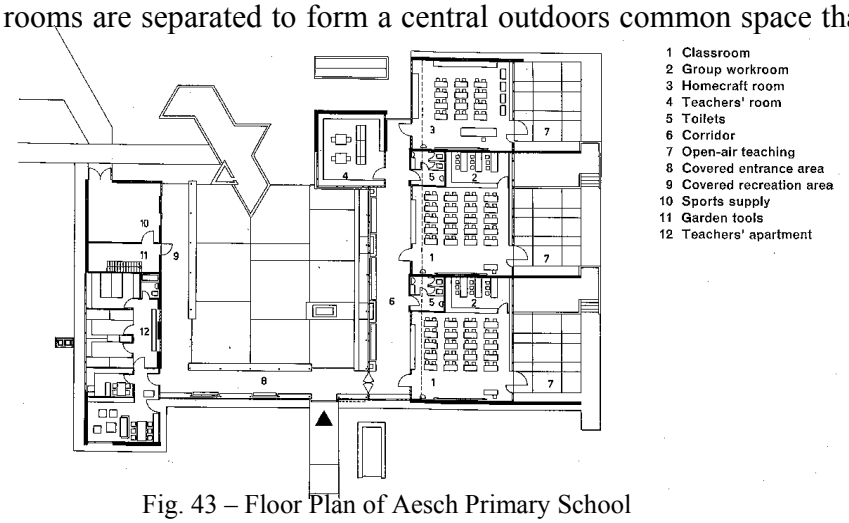

Fig. 43 – Floor Plan of Aesch Primary School

used as both a playground and for school gatherings. The individual classrooms are arranged so the receive a variety of natural light, creating a pleasant reading and working environment. However the classrooms also act as a gateway between the rest of the school and the outside world as they open up on one side to an exterior space that is separated from the land beyond, only by a two-foot band of stone pebbles. Visually it is understood as a barrier, but it still provides the children with a sense of excitement that they have left the realm of the school and have ventured out into the world.

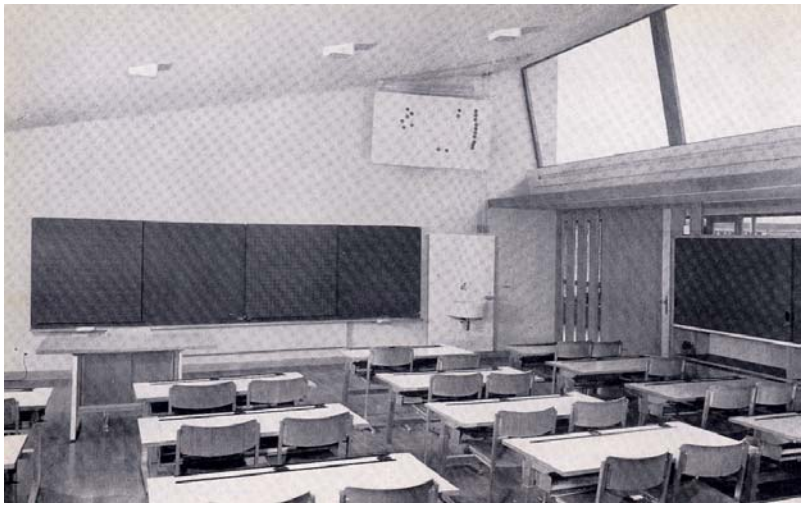

Fig. 44 – Interior of classroom, Aesch Primary School – light comes from clerestory above, glass wall on right (open to a naturally lit hall), and from a glass wall to the left.

Fig. 45 – Exterior of classroom, Aesch Primary School – glass wall separates classroom from outdoor patio space. Patio spills out into the landscape beyond.

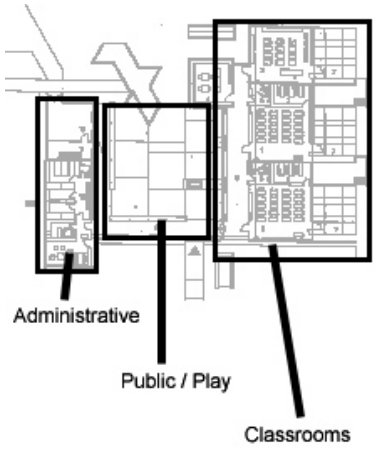

Fig. 46 – Relationship of Program Elements

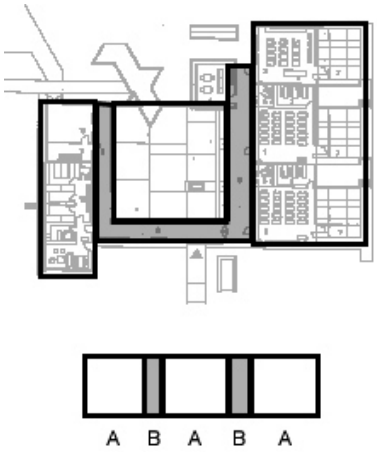

Fig. 47 – Rhythm of Program Elements

Another school to analyze is architect, Jorma Jarvi's Brando Secondary School, in Helsinki, Finland. Designed as a single rectilinear building in terms of its gestalt, the interior of the school is quite unique (Fig. 48 - 51). The entire school is organized around an auditorium, but the classrooms are not separated from the auditorium with hallways in the typical manner. Rather, classrooms open up directly to the auditorium off of balconies and open stairs.

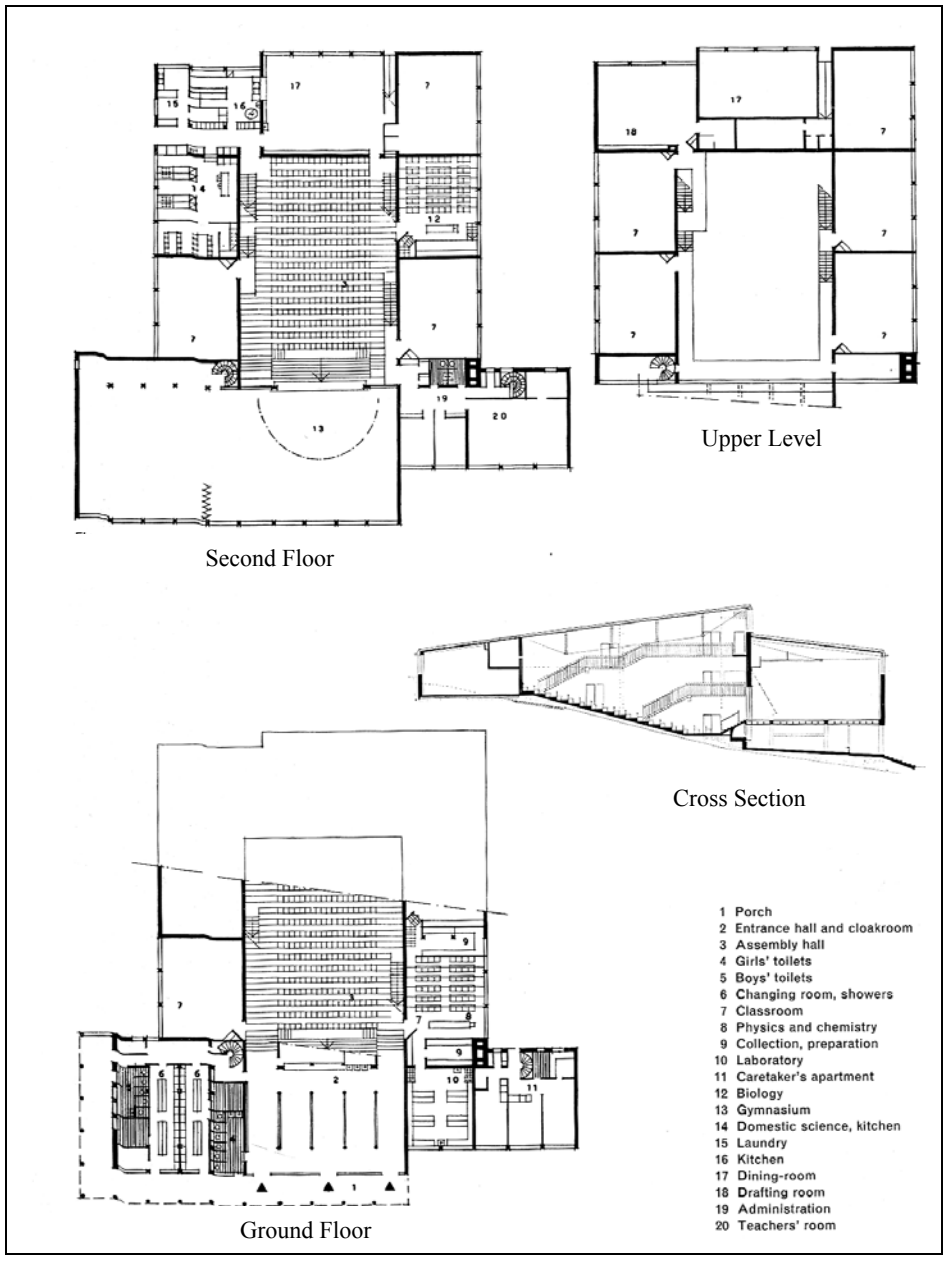

Fig. 48

Fig. 49 – View from auditorium up to classrooms

Fig. 50 – Auditorium open up to gymnasium, which doubles as a stage

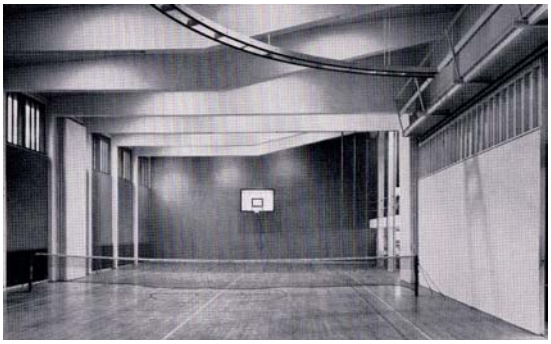

Fig. 51 – View of gymnasium

A second feature of Brando Secondary School is how the auditorium opens up to the gymnasium, which doubles as the schools stage. Using a movable partition on the shared side of the gymnasium, the gym can be completely closed off, or opened up for activities that the entire school can view. This system provides a wide variety of spatial combinations in a small amount of square feet.

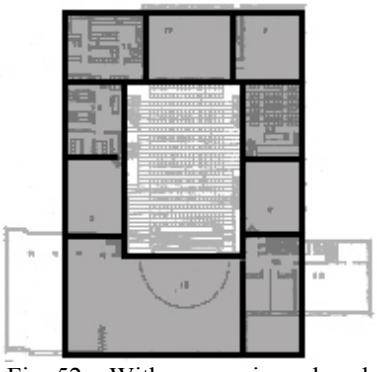

Fig. 52 – With gymnasium closed off, Brando Secondary School has a courtyard Parti.

Fig. 53 – With gymnasium open, the Parti changes to an inverted U.

In regard to overall organization of a building on its site, a good precedent to examine is Bernard Tschumi's design for the School of Architecture at the University of Miami (Fig. 54). This scheme combines a series of bar buildings and square object buildings to form a larger courtyard parti for site as a whole (Fig. 55).

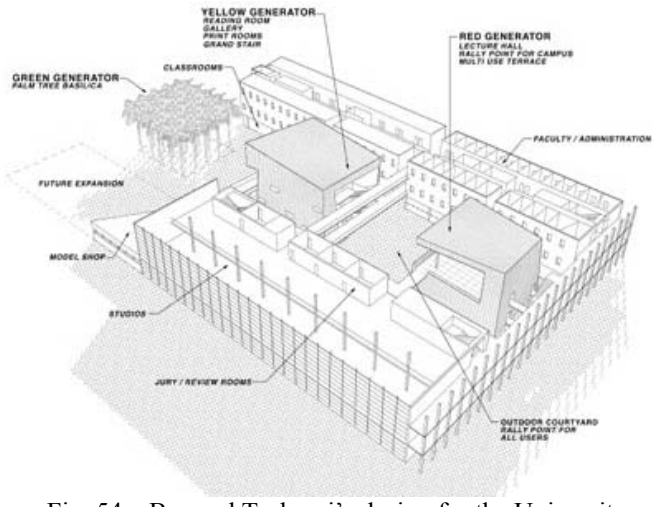

Fig. 54 – Bernard Tschumi's design for the University of Miami School of Architecture

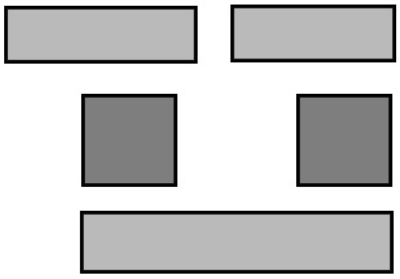

Fig. 55 – Parti of Miami School of Architecture

Fig. 56 – View from courtyard

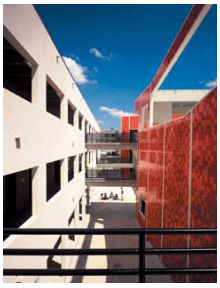

Fig. 57 – View along passage

Circulation is established through a series of internal walkways, external bridges and passages (Fig. 56, 57) that allow movement in and out of the courtyard space and provide a multi-layered means of interaction between the pedestrian and the building. Take note of the contrast between the tensions experienced by the pedestrian in Fig. 57 and the balance experienced in Fig. 56.

Another innovative project is Michael Maltzan's Kidspace Children's Museum which combines regular and organic forms together to create an energized center for learning and discovery (Fig. 58-61). The older, more regularly formed buildings act as

Fig. 58 – Aerial view of proposed model for Kidspace Children's Museum

Fig. 59 – View of new building proposed for Kidspace Children's Museum

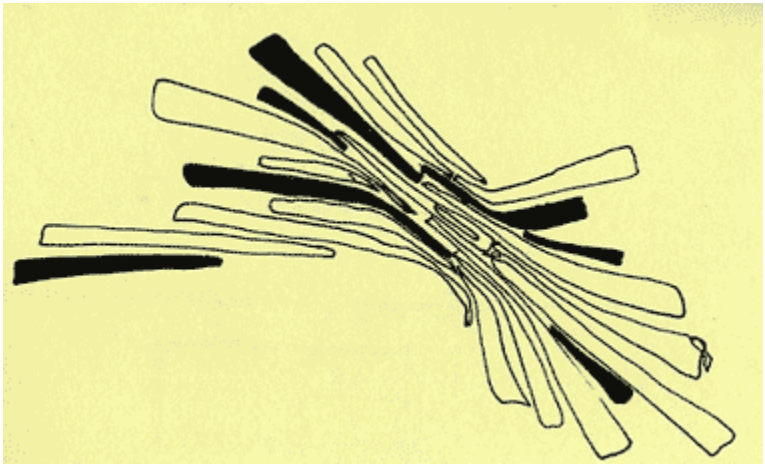

Fig. 60 – Michael Maltzan's sketch of his parti for the addition to the Children's Museum

a container to the courtyard space. In contrast, the Maltzan's organically shaped addition appears to fuse with the courtyard space and adds directionality to the center (Fig. 61-63).

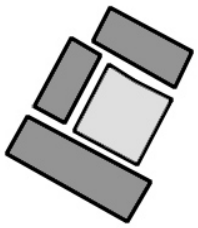

Fig. 61 – Courtyard is contained by the rectilinear buildings

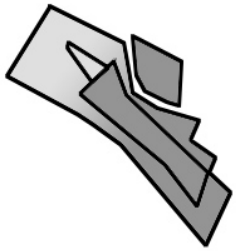

Fig. 62 – Courtyard fuses with organic form of new building.

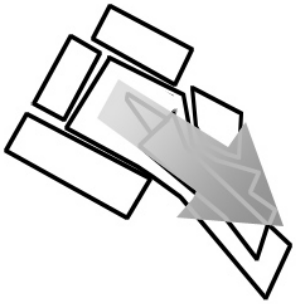

Fig. 63 – Combination of these elements gives the cout-yard directionality.

CHAPTER 7

Precedent Program Analysis

This section is dedicated to looking more closely at the specific programmatic requirements a school, similar in size to the New School of Orlando, might have. For this investigation we will return to Brando Secondary School, in Helsinki, Finland (Fig. 48 - 53). With 350 students, Brando is an ideal example, since it has the same number of student that the New School desires to have. After thorough examination, the following information was compiled, illustrating the programmatic breakdown of the school:

Lobby 2,053 square feet

This is the room in which the children begin and end their day. The students gather here in the morning before being heading to there home room and they gather here again at the end of the day before being picked up.

Adjacencies
Entrance, Circulation, Auditorium, Lavatories, Science Lab

Max # of Occupants
300

Auditorium 4,537 square feet

This room is used for large assemblies - "town meetings", performances, and other special events.

Adjacencies

Lobby, Circulation, Classrooms, Gymnasium/Stage, Science Labs, Lunch Room, Admin Offices

Max # of Occupants

370

Lavatory 896 square feet

These are separated into two categories - Teachers and Students. Each have both a Boys and Girls facility.

Adjacencies

Lobby, Auditorium, Gymnasium/Admin Offices, Teacher's Room

Max # of Occupants

30

Classrooms (8) 8,054 square feet

These rooms meet the needs for the school's typical lecture style teaching they are arranged with a teachers desk at the front of the room and rowed seating, facing the front.

Adjacencies

Other Classrooms, Circulation, Science Labs, Auditorium

Max # of Occupants

200

Science Lab (3) 2,360 square feet

These specialized labs offer the facilities needed for Physics, Chemistry and Biology study and experimentation.

Adjacencies

Classrooms, Circulation, Auditorium

Max # of Occupants

90

Gymnasium 5,544 square feet

This space serves both as the center of the schools physical education program, but also as the focus of all theater, and performance activities, as it doubles as a stage.

Adjacencies

Auditorium, Lavatory, Circulation, Admin Offices

Max # of Occupants

50

Multi-Purpose Classroom (2) 2,013 square feet

These rooms serve the special classroom needs certain curricula may require. They can be adjusted to fit the needs of the teacher and class using them.

Adjacencies

Lunch Room, Classrooms

Max # of Occupants

60

Lunch Room 1,587 square feet

Mostly used for dining, this room can be cleared out and used as an additional multi-purpose space.

Adjacencies

Multi-Purpose Rooms, Classrooms, Auditorium

Max # of Occupants

120

Admin Offices 670 square feet

These spaces provide offices for the principal and support staff as well as a space for the school secretary.

Adjacencies

Teacher's Room, Lavatories, Circulation, Auditorium

Max # of Occupants

4

Teachers' Room 824 square feet

This room can be used by teachers before and after school to prepare/debrief. During the school day it is used as a break room for teachers who have off periods. There is a small kitchen in the room, and teachers frequently eat in this space instead of the main lunch room.

Adjacencies

Admin Offices, Lavatories

Max # of Occupants

10

Circulation Space 2,600 square feet

Stairs and walkways flanking the auditorium provide access to several different levels of classrooms and laboratories.

Adjacencies

Everything

Max # of Occupants

N/A

Computer Facilities 2,600 square feet

Previously used as a drafting room, this space holds the schools computer facilities. Classes rarely take place in this room, but it is used by students and teachers throughout the school as a resource throughout the day.

Adjacencies

Classrooms, Circulation, Auditorium

Max # of Occupants

25

Mechanical 2,600 square feet

These spaces throughout the school provide for HVAC, and other mechanical/utility needs.

Adjacencies

Science Lab, Small Lecture/Performance Space

Max # of Occupants

N/A

Small Lecture/Performance Space **2,600 square feet**

This room can be used for special classes that are better taught outside the normal classroom. It can also be used for theater study, for it has a small stage.

Adjacencies

Mechanical, Circulation, Auditorium

Max # of Occupants

35

Precedent Program Tabulations

Space		Square Feet
Lobby		2,053
Auditorium		4,537
Lavatory	4 @ 224	896
Class Room (typ)	8 @ 1,006	8,054
Science Lab	3 @ 787	2,360
Gymnasium		5,544
Multi-Purpose Class Room	2 @ 1,006	2,013
Lunch Room		1,587
Admin Offices	4 @ 167.5	670
Teachers Room		824
Computer Facilities		824
Small Lecture / Performance Space		1,014
	Sub-total	**30,376**
Mechanical / Circulation		3,424
	Total	**33,800**

CHAPTER 8

Proposed Building Program

Lobby 2,053 square feet

This is the room in which the children begin and end their day. The students gather here in the morning before being heading to there home room, and they gather here again at the end of the day before being picked up.

Adjacencies
Entrance, Circulation, Auditorium, Lavatories, Science Lab

Max # of Occupants
300

Auditorium 4,537 square feet

This room is used for large assemblies - "town meetings", performances, and other special events.

Adjacencies
Lobby, Circulation, Classrooms, Gymnasium/Stage, Science Labs, Lunch Room, Admin Offices

Max # of Occupants
370

Lavatory (12) 1,088 square feet

These are separated into three categories - Teachers and Students, and Classroom. The teachers have a men's and women's bathroom. There are 4 bathrooms shared between the 3rd-8th graders (2 boy's, and 2 girl's facilities). Lastly, each of the 6 K-2nd grade class rooms has its own bathroom.

Adjacencies

Lobby, Auditorium, Gymnasium/Admin Offices, Teacher's Room

Max # of Occupants

30

Classroom - K-2nd (6) 6,690 square feet

These rooms would serve as the core curricula space for K-2nd grades throughout their day. Each grade would have two classrooms, and the grade would be divided between the two rooms. Each class room would have a single lavatory, lecture space, reading/discovery space, and a separate teacher/student meeting space set aside from the main classroom space.

Adjacencies

Other Classrooms, Circulation

Max # of Occupants

130

Classroom – 3rd – 5th (4) **4,640 square feet**

These rooms would serve as the liberal arts curricula space for 3rd-5th grades throughout their day. Two classrooms would be dedicated to language and social studies, and two classrooms would be dedicated to math and spatial studies. Each class room would have a lecture space, reading/discovery space, and a separate teacher/student meeting space set aside from the main classroom space.

Adjacencies

Other Classrooms, Circulation, Auditorium

Max # of Occupants

90

Classroom – 6th – 8th (4) **4,640 square feet**

These rooms would serve as the liberal arts curricula space for 6th-8th grades throughout their day. Two classrooms would be dedicated to language and social studies, and two classrooms would be dedicated to math and spatial studies. Each class room would have a lecture space, reading/discovery space, and a separate teacher/student meeting space set aside from the main classroom space.

Adjacencies

Other Classrooms, Circulation, Auditorium

Max # of Occupants

90

Science Lab (6) 6,000 square feet

These specialized labs offer the facilities needed for Physics, Chemistry and Biology study and experimentation for students in the 3rd-8th grades.

Adjacencies

Classrooms, Circulation, Auditorium

Max # of Occupants

90

Gymnasium 5,544 square feet

This space serves both as the center of the schools physical education program, but also as the focus of all theater, and performance activities, as it doubles as a stage.

Adjacencies

Auditorium, Lavatory, Circulation, Admin Offices

Max # of Occupants

50

Multi-purpose Class Room (2) 2,010 square feet

These rooms serve the special classroom needs certain Curricula may require. They can be adjusted to fit the needs of the teacher and class using them.

Adjacencies

Lunch Room, Classrooms

Max # of Occupants

60

Art Studio 1,960 square feet

This room is used by students to develop their artistic abilities. It stores many different types of art supplies. It has a separate Kiln Room and covered outdoor space that can easily be accessed for use of hazardous materials.

Adjacencies

Classrooms, Circulation, Woodshop

Max # of Occupants

60

Woodshop **625 square feet**

This is a smaller space near the art studio that aids the children in learning to work with their hands, and build things. It has tools ranging from screw drivers and chisels to table saws and routers. It has a large central workstation/table, and tools around the periphery.

Adjacencies

Art Studio

Max # of Occupants

20

Dance Space **1,500 square feet**

This is a closed off, quite room near the auditorium and Music Room, where students can develop their kinesthetic abilities. It would be designed much like a standard ballet practice space, with an acoustical, movable partition wall that opens up to the Music Room.

Adjacencies

Music Room, Lobby, Auditorium, Gymnasium

Max # of Occupants

30

Music Room 625 square feet

This room would be located near the Dance Space, and would consist of stepped risers, a place for a piano, and musical instrument storage. The room should be able to be opened up to the dance space for integration between the two studies.

Adjacencies

Dance Space, Lobby, Auditorium, Gymnasium

Max # of Occupants

20

Computer Facilities 2,600 square feet

This space holds the schools computer facilities. Classes rarely take place in this room, but it is used by students and teachers throughout the school as a resource throughout the day.

Adjacencies

Classrooms, Circulation, Auditorium

Max # of Occupants

25

Lunch Room 1,587 square feet

Mostly used for dining, this room can be cleared out and used as an additional multi-purpose space.

Adjacencies

Multi-Purpose Rooms, Classrooms, Auditorium

Max # of Occupants
120

Teachers' Room 824 square feet

This room can be used by teachers before and after school to prepare/debrief. During the school day it is used as a break room for teachers who have off periods. There is a small kitchen in the room, and teachers frequently eat in this space instead of the main lunch room.

Adjacencies

Admin Offices, Lavatories

Max # of Occupants
10

Admin Offices 670 square feet

These spaces provide offices for the principal and support staff as well as a space for the school secretary.

Adjacencies

Teacher's Room, Lavatories, Circulation, Auditorium

Max # of Occupants

4

Outdoor Spaces 68,000 square feet total

These spaces include parking, playgrounds, basketball courts and a playing field. The individual spaces are scattered through out the site in and around the school.

Parking – 30 spaces -12,500 s.f.

Playing Field – 25,000 s.f.

Basketball Court – 3,100 s.f.

Playgrounds – 17,400 s.f.

Program Tabulations

Space		Square Feet
Lobby		2,053
Auditorium		4,537
Lavatory	12 @ 91	1,088
Class Room – K-2nd	6 @ 1,115	6,690
Class Room – 3rd-5th	4 @ 1,160	4,640
Class Room – 6th-8th	4 @ 1,160	4,640
Science Lab	6 @ 1,000	6,000
Gymnasium		5,544
Multi-Purpose Class Room	2 @ 1,005	2,010
Art Studio		1,960
Woodshop		625
Dance Space		1,500
Music Room		625
Lunch Room		1,587
Admin Offices		670
Teachers Room		824
Computer Facilities		824
	Sub-total	**43,692**
Mechanical / Circulation	15% of sub-total	6,553
	Total	**50,245**

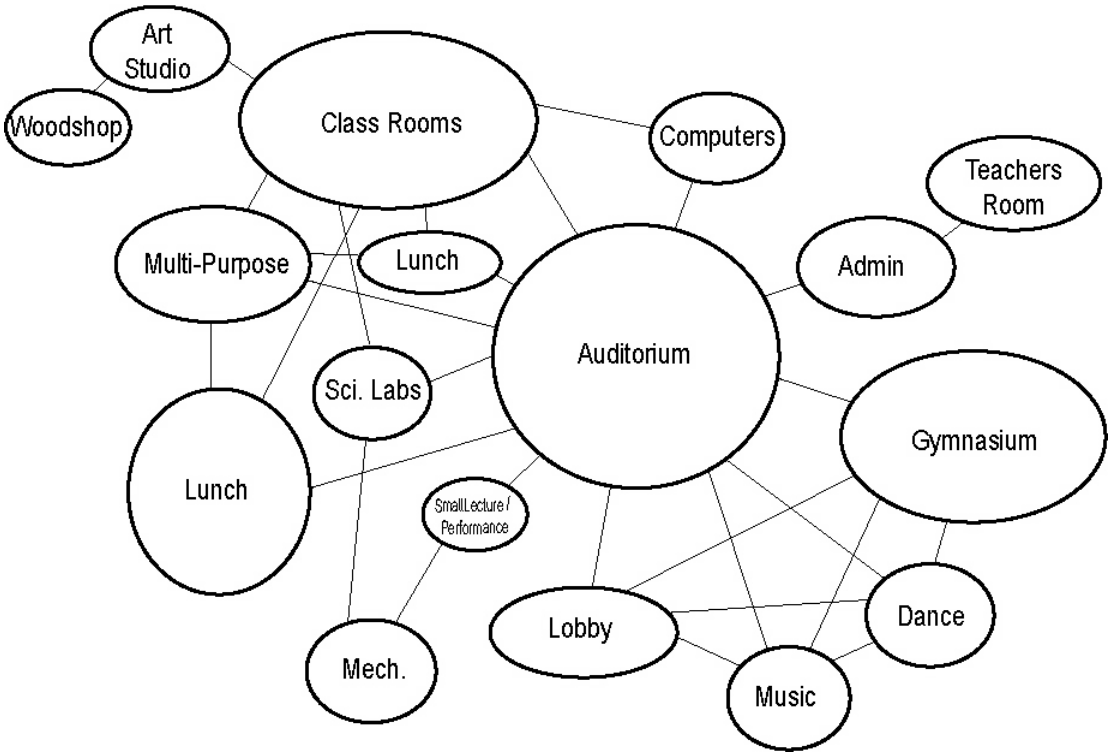

Fig. 64 – Relationships of rooms throughout entire school.

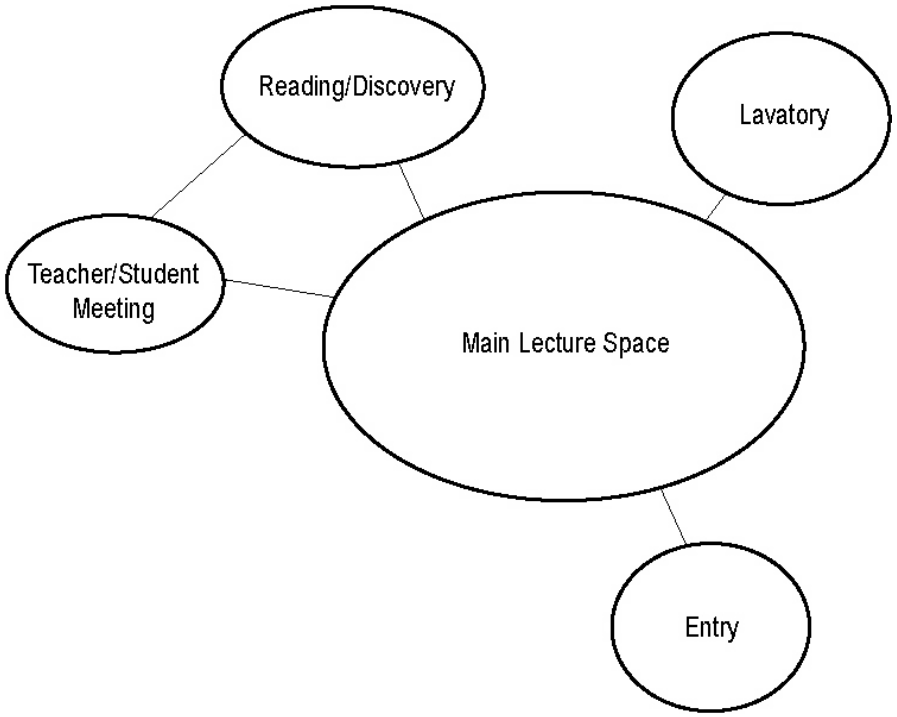

Fig. 65 – Relationship of spaces within a classroom for Kindergarten through Second Grade.

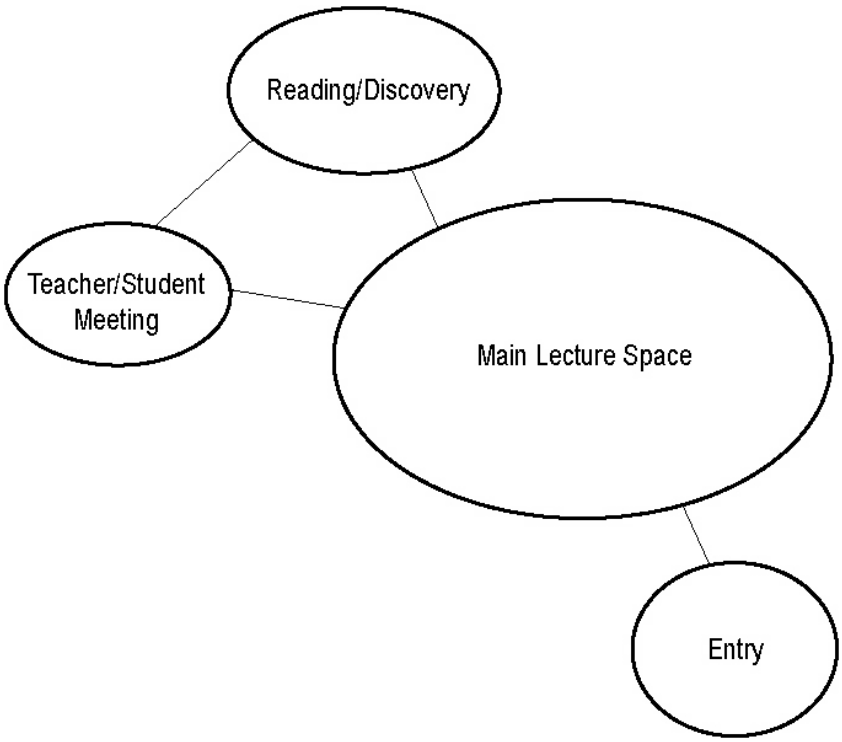

Fig. 66 – Relationship of spaces within a classroom for Second through Eighth Grade.

CHAPTER 9

Design Approach

Design Goals

While proposing a new facility for the New School of Orlando and designing for the school's expansion the following key goals should be kept in mind:

Internal Issues

1. Building size should reflect targeted growth max.
2. The New School campus should be designed in a fashion that supports, if not exemplifies Howard Gardner's Multiple Intelligences Theory.
3. A classroom prototype should be conceived and developed which allows for a variety of spaces and uses according to the teachers needs.
    a. Standard lecture activities.
    b. Quiet group reading
    c. Bookshelves / mini-library
    d. One on one student / teacher activity
    e. Student – Student interaction
4. The final design should have an even balance of interior and exterior spaces to help students develop a sense of connectivity to their surroundings.

External Issues

1. The New School of Orlando should be designed at a scale consistent with the *projected* scale of the surrounding area.
2. The school should maintain the urban edge along Magnolia Ave. and develop a more legible edge on East Marks Street.
3. The school should provide or acquire park space adjacent to or near the site for recreational uses. This space should be shared with Lake Highland Prep during school hours, and open to the public during times when the school is closed (early mornings, evenings, and weekends).

A site plan will be developed that outlines suggested sizes, scales, and uses of buildings surrounding the New School Site, so that the school can be judged appropriately, with fixed conditions. A plan will be devised that will allocated certain areas of the surrounding site for park land, and multiple schemes will be developed that investigates the relationship between the school and the park. Lastly a detailed design for The New School will be proposed that encompasses all of the programmatic and abstract goals.

Special Design Problems and Issues

The New School of Orlando is a relatively young school, and it has not had the opportunity to develop an image for itself. As such the proposed new design should address aspects of *imagability*.

The New School follows Howard Gardner's Multiple Intelligences Theory, and as such, it strives to address teaching in a new and innovative manner. Furthermore, the form and organization of both the school as a whole and its individual components should be designed with Multiple Intelligences in mind. Spaces must be provided that allow children to develop all of the following skills, equally:

1. Linguistic (syntax, phonology, semantics, pragmatics)
2. Musical (pitch, rhythm, timbre)
3. Logical-mathematical (number, categorization, relations)
4. Spatial (accurate mental visualization, mental transformation of images)
5. Bodily-kinesthetic (control of one's own body, control in handling objects)
6. Interpersonal (awareness of others' feelings, emotions, goals, motivations)
7. Intrapersonal (awareness of one's own feelings, emotions, goals, motivations)
8. Naturalist (recognition and classification of objects in the environment)

In its current state the area surrounding the project site has a rather low density (Fig. 67). Despite the fact that the entire area around the site is in the process of being rezoned, a master plan has not yet been created to guide the growth. As such, it is necessary to develop an independent concept for the organization and development of the surrounding site (Fig. 68-72).

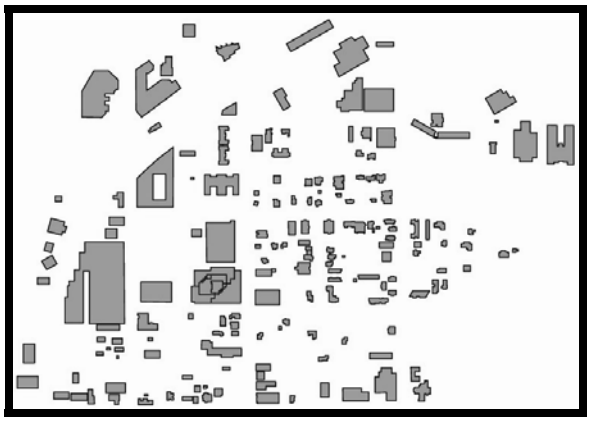

Fig. 67 – Figure Ground Diagram: illustrates the low density of the area surrounding The New School site.

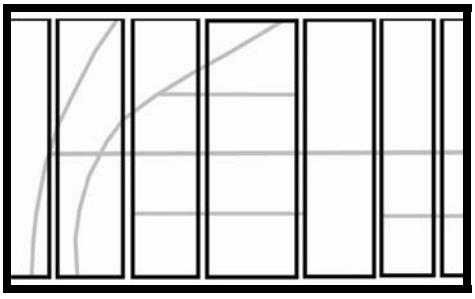

Fig. 68 – East-West Block Module and Street Rhythm

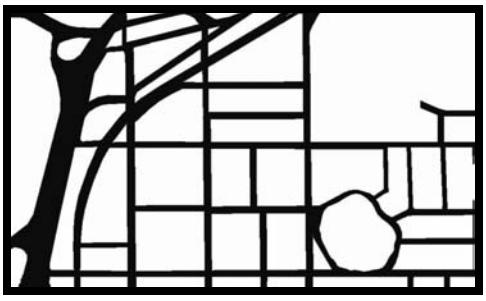

Fig. 69 – Street / Block Pattern

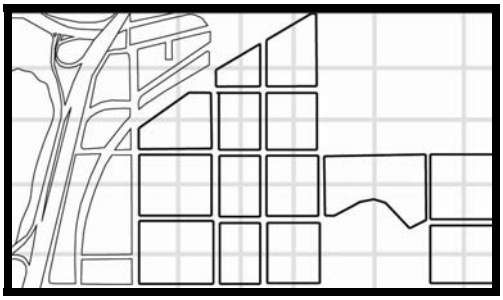

Fig. 70 – Block Reorganization and Centerlines

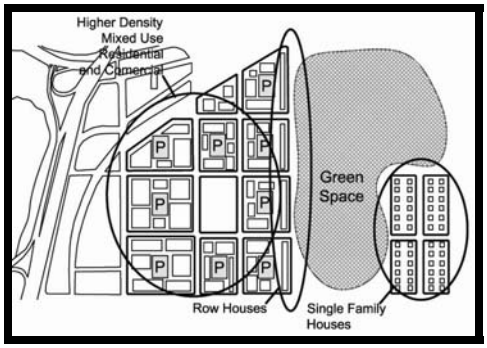

Fig. 71 – Proposed New Use and Density Diagram for Area Surrounding New School Site

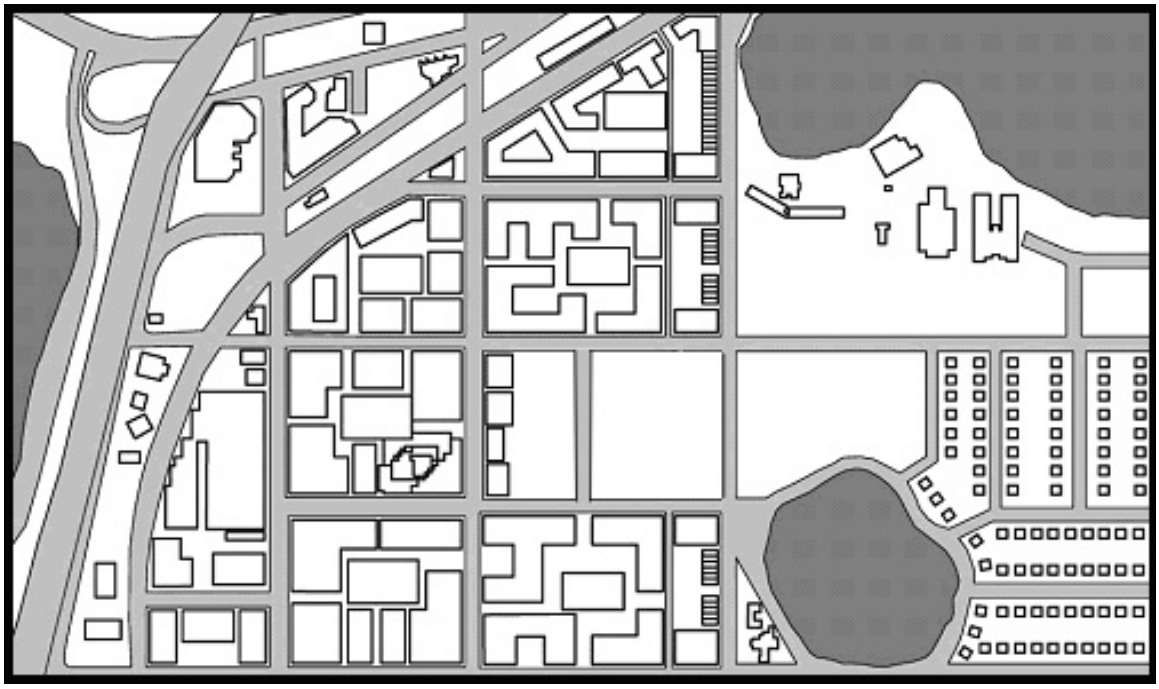

Fig. 72 – Proposed Development for Area Surrounding The New School

CHAPTER 10

Initial Partí Exploration

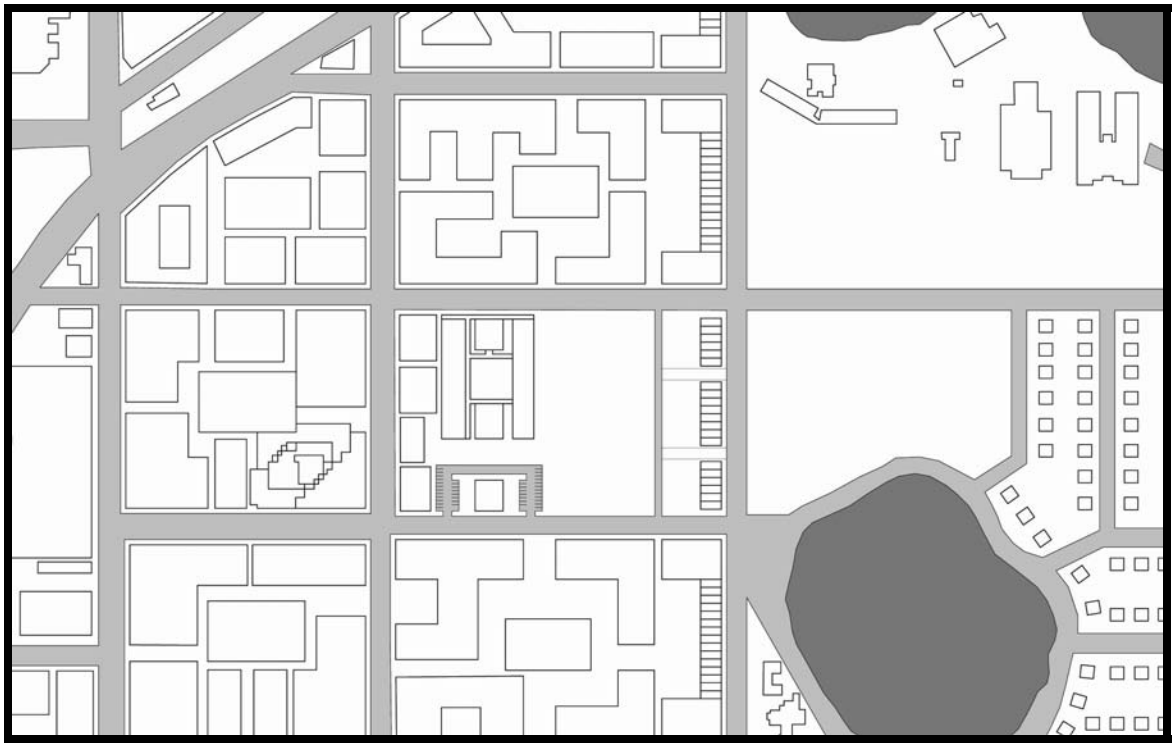

Fig. 73 – Site Plan for Partí One

Partí One

Based off of Bernard Tschumi's School of Architecture Building at The University of Miami, this partí combines two classroom bar buildings and three square object buildings (i.e., Auditorium, Gymnasium, Admin.) to create a series of spaces: a central courtyard, a quite front lawn, and secluded slots of space between the individual buildings. The entire school is position on one side of the available lot so that the remainder of the site can be used for playgrounds and playing fields, which have a connection to the greater green space on the other side of the row houses.

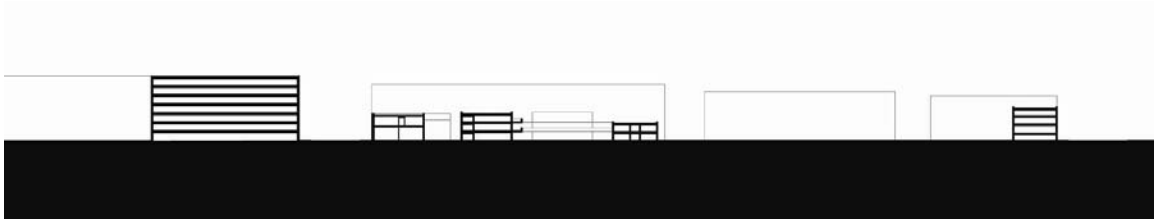

Fig. 74 – East-West Section Through New School Site: Partí One

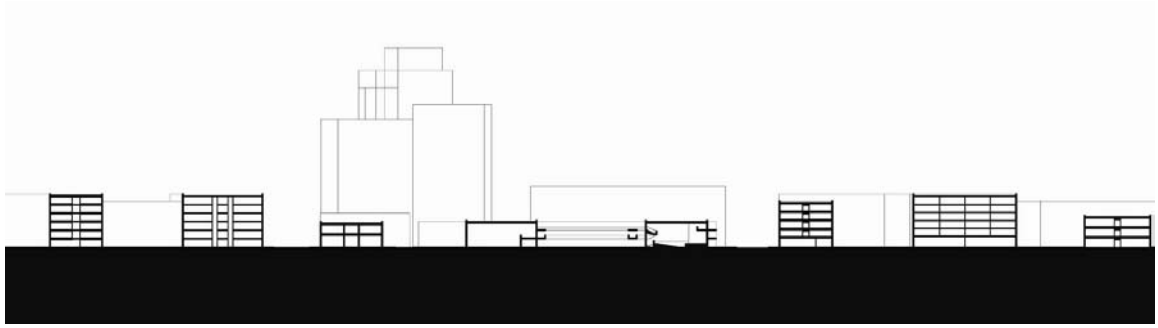

Fig. 75 – North-South Section Through New School Site: Partí One

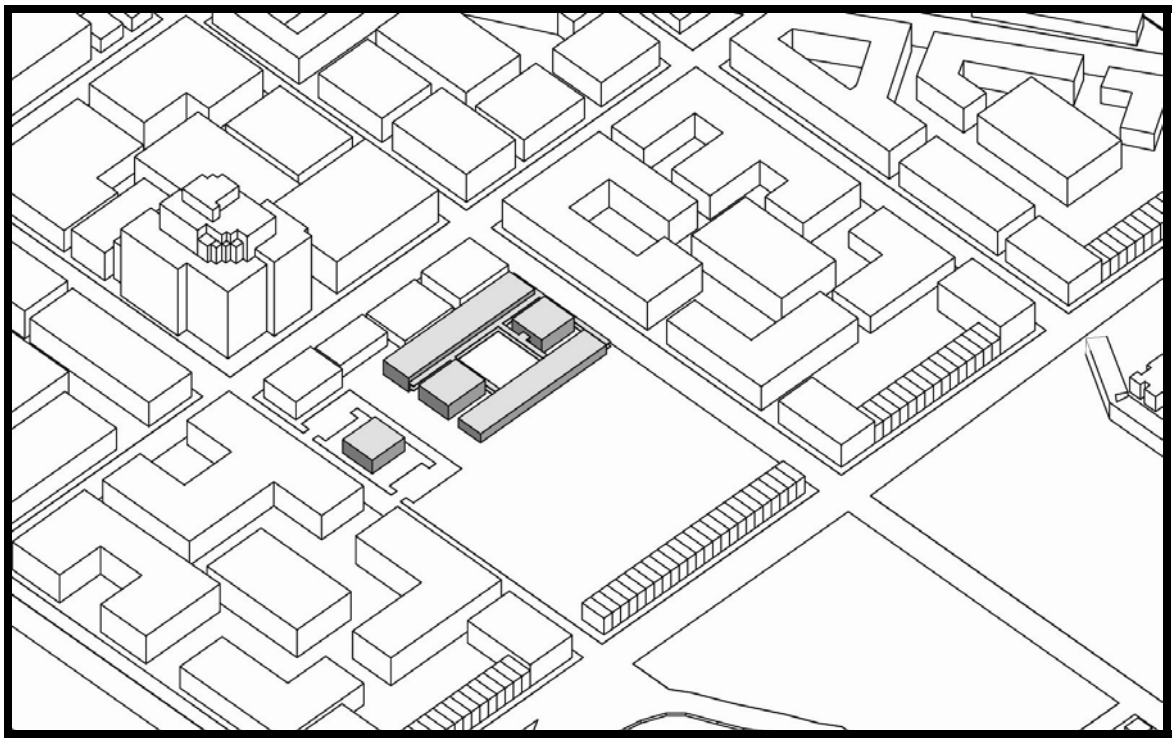

Fig. 76 – Axonometric view of New School Site: Partí One

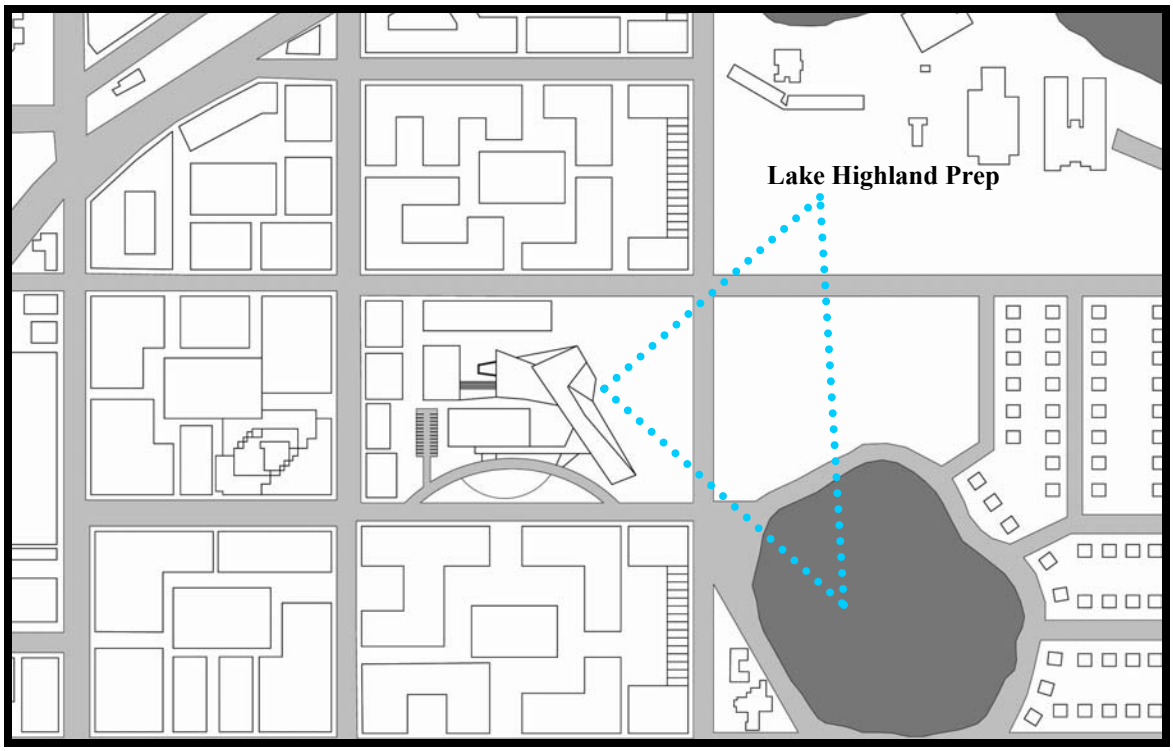

Fig. 77 – Site Plan for Partí Two

Partí Two

Based off of Michael Maltzan's Kidspace Children's Museum, this partí combines regular rectilinear buildings with a complex organic form in order to create an energized interior court. The curving nature of the object building also helps pull together the surrounding green spaces of The New School's fields, Lake Highland Prep's fields, Park Lake, and the new park located adjacent to the lake.

The rectilinear building directly off the circular drive would hold a Gymnasium and Auditorium. The Organically formed building would hold all of the New School's creative courses: art, music, dance, drama, woodshop, etc., while the rectangular buildings that complete the courtyard would house the more traditional course classrooms (i.e., english, math, science, etc.).

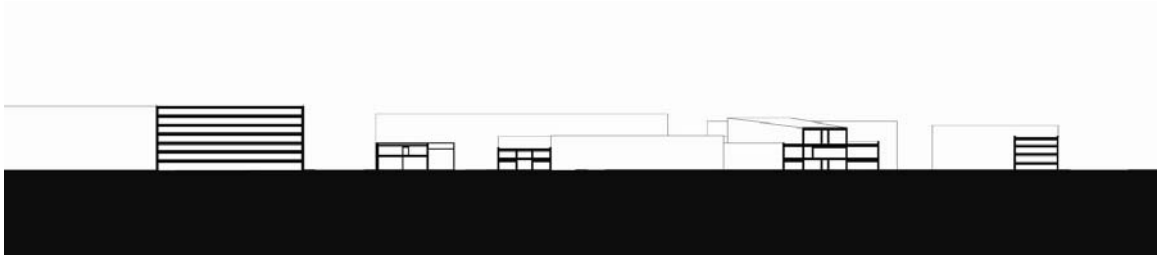

Fig. 78 – East-West Section Through New School Site: Partí Two

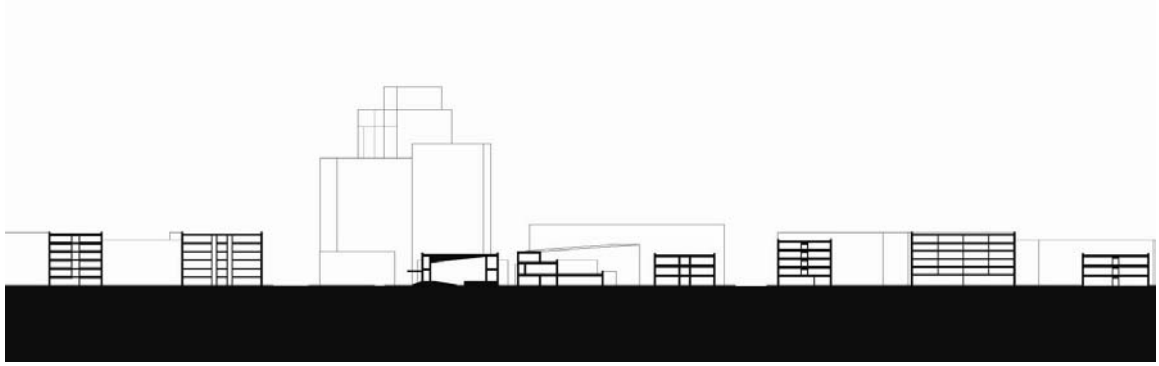

Fig. 79 – North-South Section Through New School Site: Partí Two

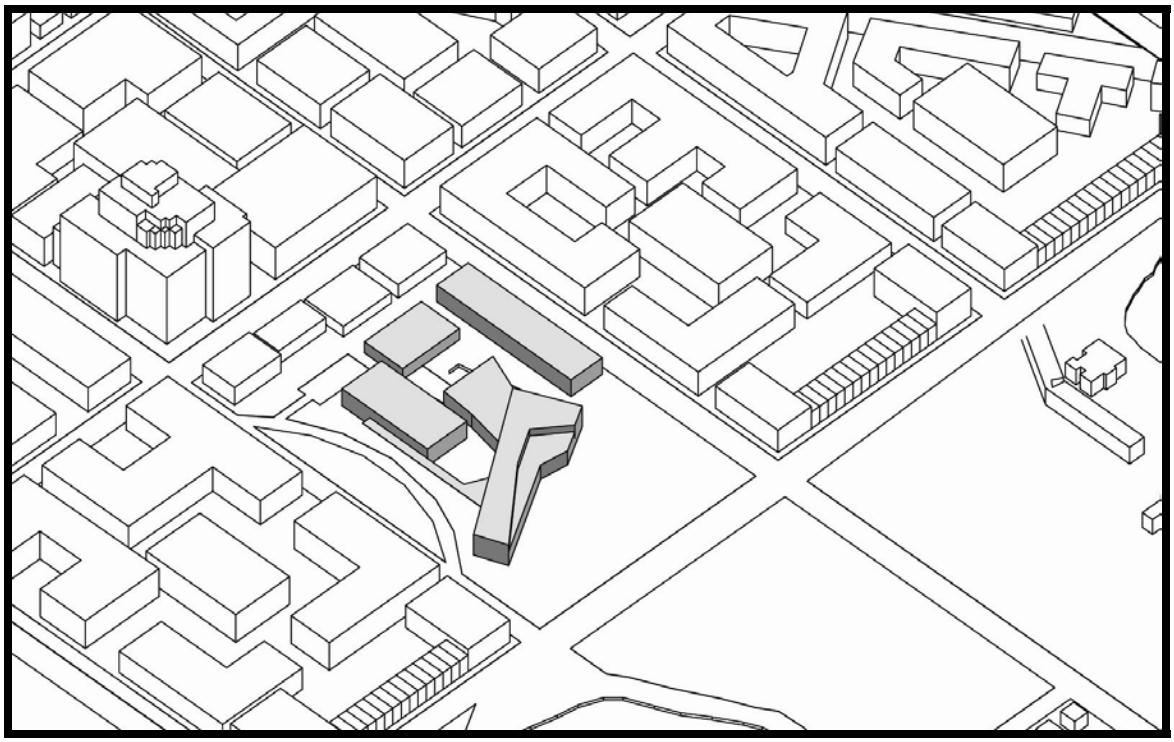

Fig. 80 – Axonometric view of New School Site: Partí Two

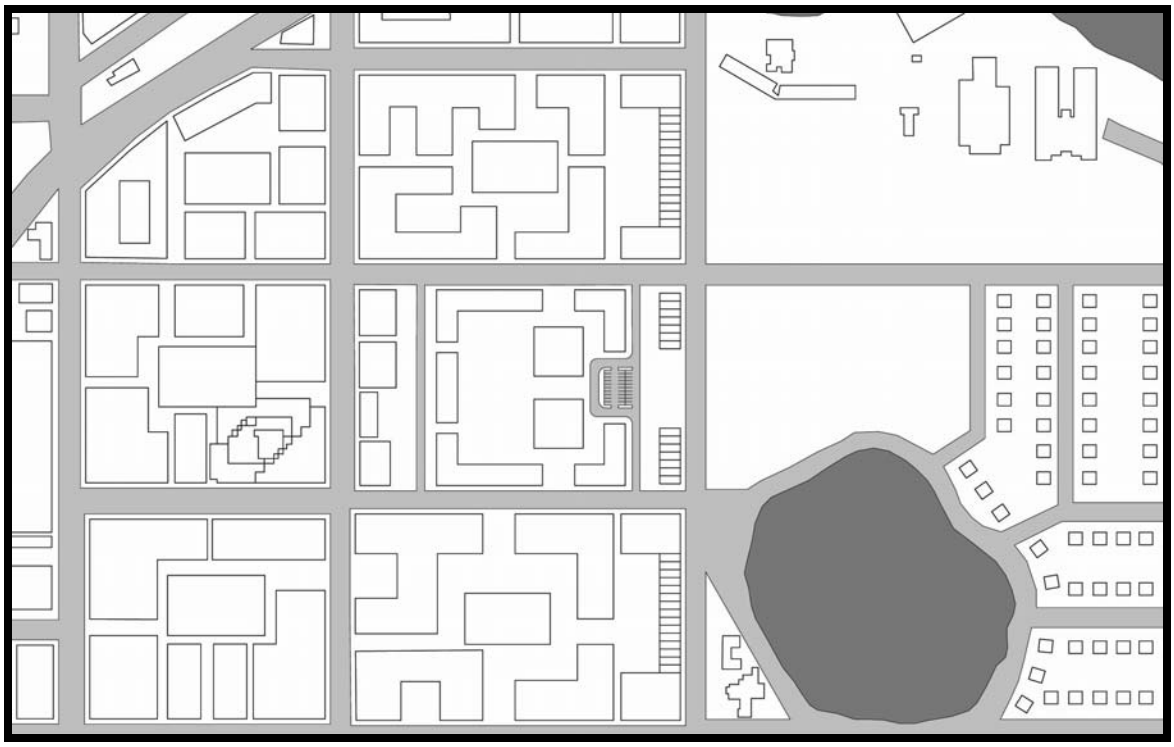

Fig. 81 – Site Plan for Partí Tree

Partí Three

This scheme creates a closed off campus that fills the entire site. As such, its overall height would be lower. Nonetheless, this scheme completely holds the street edge along Park Lake St. and East Marks Street, while also creating a strong axial relationship between itself and the new park next to Park Lake.

The two square buildings would house an auditorium and a gymnasium, while the L-shaped buildings along the periphery would house the classrooms. The rectilinear building that closes off the axis to the park would be the administrative building, and fields would fill the open interior space.

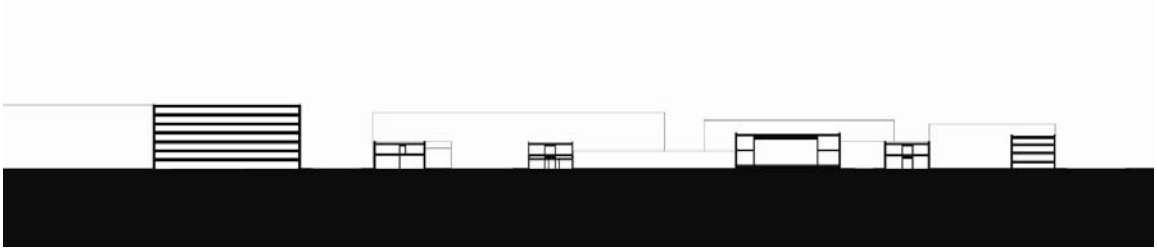

Fig. 82 – East-West Section Through New School Site: Partí Three

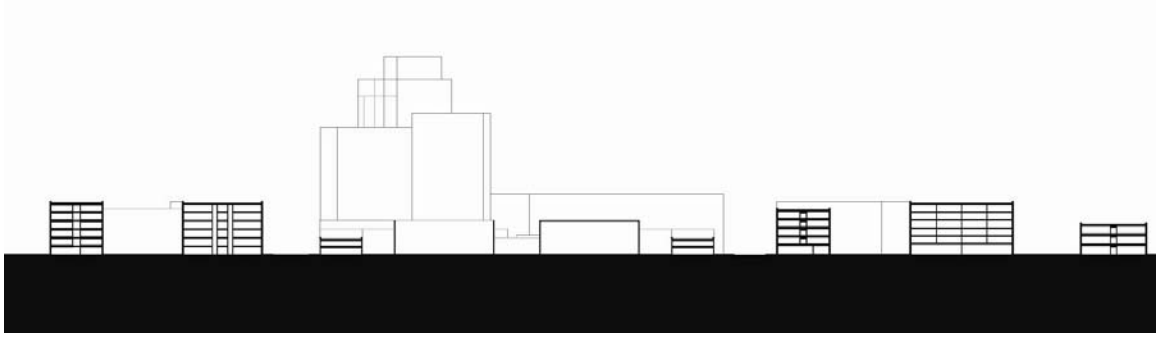

Fig. 83 – North-South Section Through New School Site: Partí Three

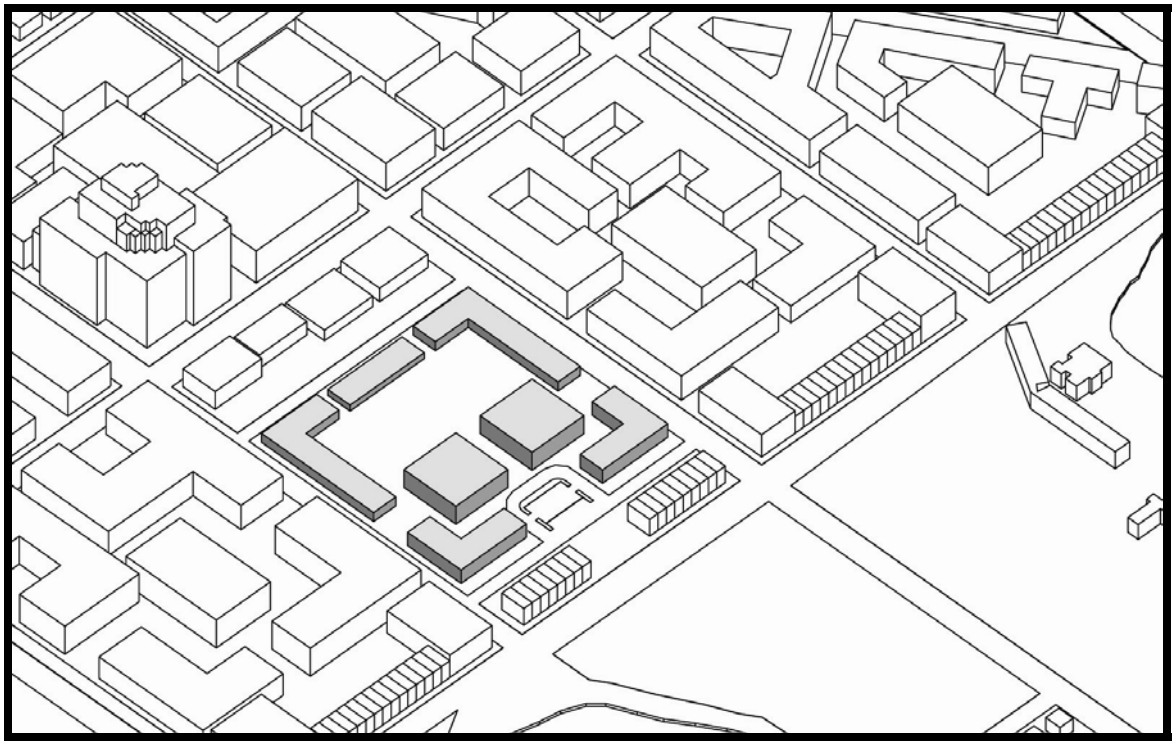

Fig. 84 – Axonometric view of New School Site: Partí Three

CHAPTER 11

Final Design for the New School of Orlando

The process of taking the New School design from a parti stage to a schematic design stage required a reassessment of the site diagram. To that point much had been diagramed in regard to the larger site including the surrounding blocks, but little had been done to understand the specific lot of land now dedicated for use by the New School itself.

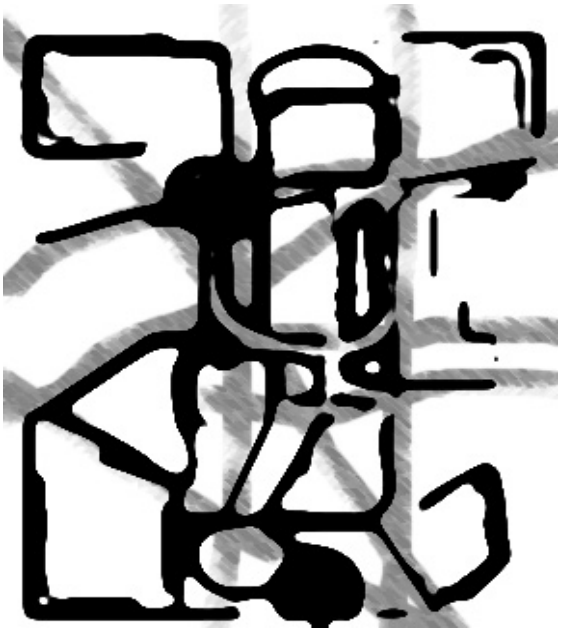

Fig 85 – Initial Sketch of New School Site

Seen on the top right is one of the early diagrams that began to sort out the site based on a series of axes, nodes, and corner conditions. In Figure 86, a trial mass has been developed for the purpose of testing a series of vertical circulation nodes. The mass itself (seen more clearly in figure 87) was then assigned open and closed faces in an effort to better understand the resulting void spaces or courtyards. While these two diagrams did begin to realize the need for dominating the edges of the site to maintain the previously designed urban fabric, the open field space created on the east side of the site (Between the two corner buildings and the connecting bar) is counter productive when juxtaposed with the adjacent park space.

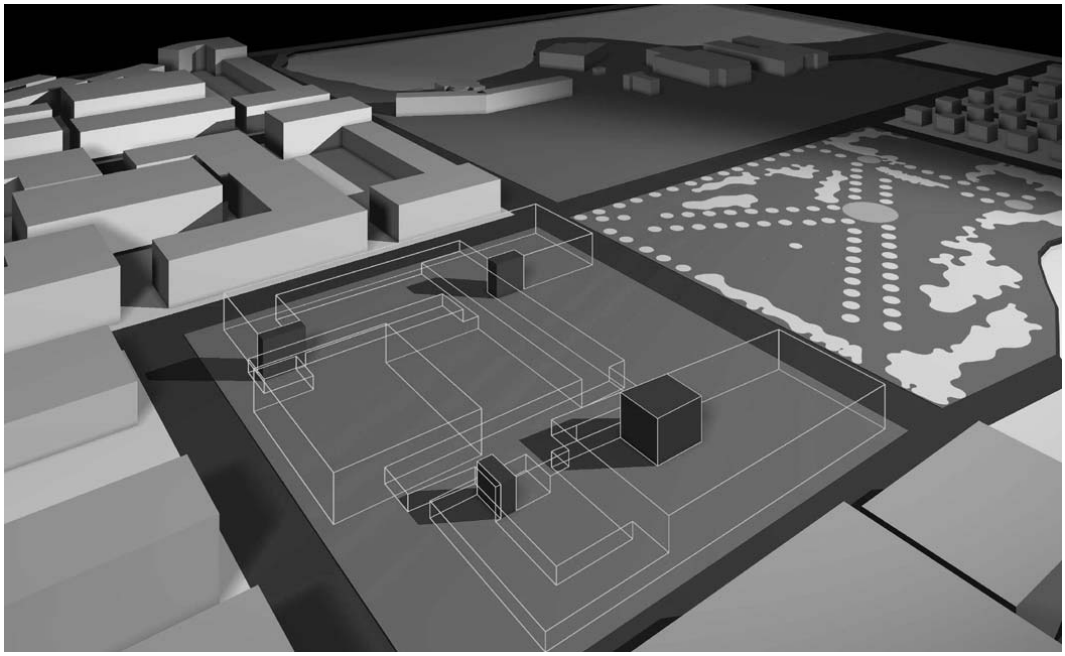

Fig. 86 – Circulation Node Diagram

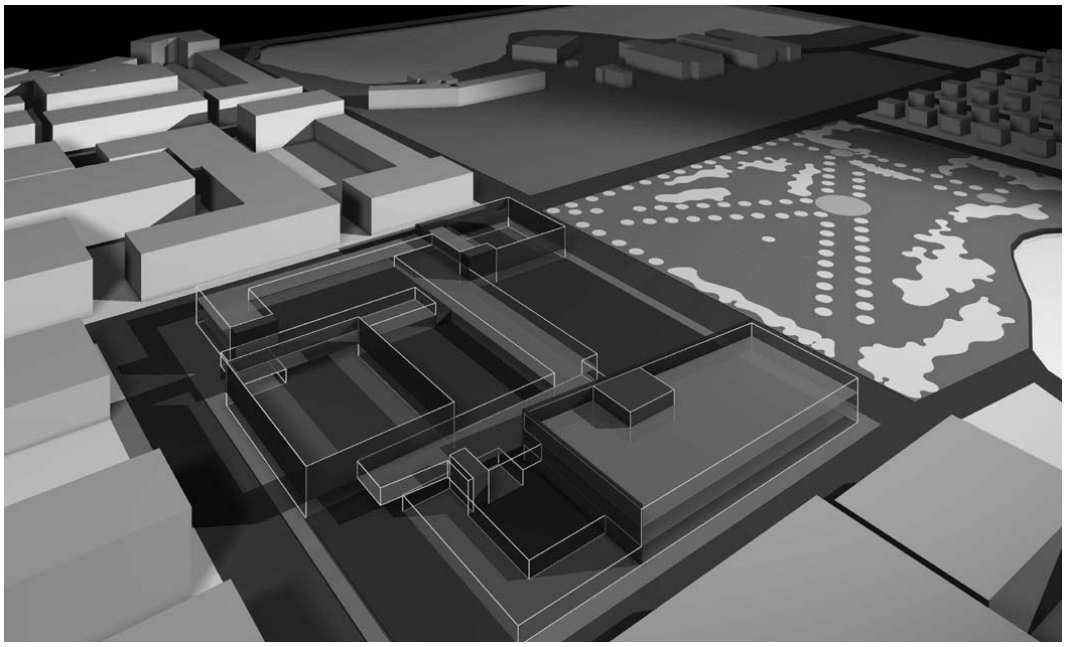

Fig. 87 – Potential Massing Distribution Across Site

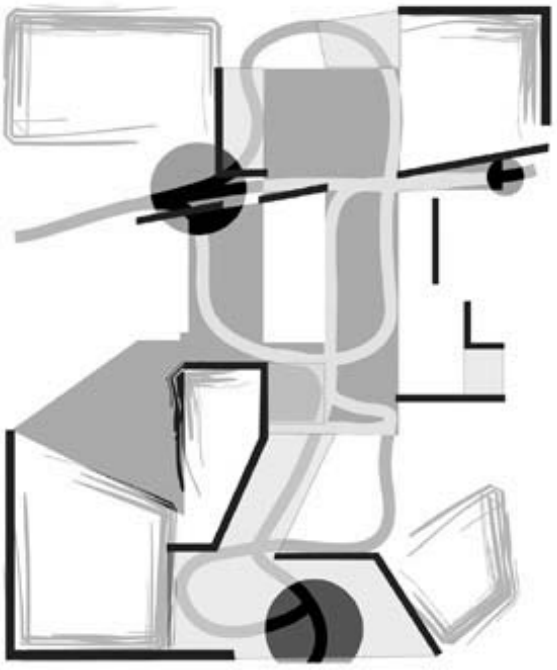

Fig. 88 – Combination Diagram – Illustrates Relationships Between Entrance Nodes, Circulation Patterns, Green Spaces, Social Nodes, Mural Walls, and Openings.

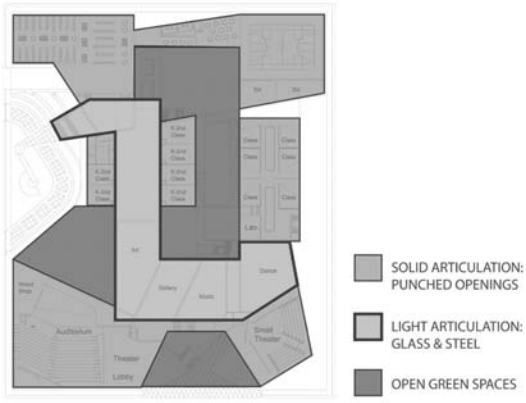

Fig. 89 – Distribution of Building Density and Open Spaces Across Site

Not until arriving at the diagram to the left (fig. 88) did the New School design begin to solidify. At this point a clear stance has been taken regarding the Southwest, Northwest and Northeast corners of the site. They are to hold the corners of the urban fabric both in orientation and in scale. The Southeast corner then serves as a playful variation of the other three as it turns and reorients itself with the park across the street.

A network of mural walls is established that shall be painted by the older students of the School on an annual basis. These murals (illustrated at thick black lines in the diagram) act as both destination markers as well as indicators of change and transition between two destination points. The open green spaces are then contained more toward the center of the block in a series of connected courtyards while the whole system is connected by an open circulation system.

The final design for the New School campus (Figures 90-109) is a continuation of this last diagram – forming itself across the site as a container of linked places and an arrangement of separate (though connected) buildings. Just as Multiple Intelligence Theory breaks the learning strengths and the aspects of the mind into separate ahierarchical elements, the design for the new school divides the school into different masses forming a campus. Dance, Theater, Gym, Art, etc all have their own place – recognizable to some extent as separate buildings. At the same time, no building stands completely alone. Shared walls, stacked spaces, connecting roof structures – all unite the elements together as a single element. In this way, too, the design shares elements with Howard Gardner's Theory. Gardner strongly states that none of the 8 intelligences can work independently of one another. The mind is constantly flowing between several of the intelligences at once to help us understand our environment, and our own thoughts.

Fig. 90 – Aerial Perspective of Proposed New School of Orlando Campus

Fig. 91 – Aerial Perspective of Proposed New School of Orlando Campus

During the exploration of possible designs for the campus, the idea of having a system of completely open and undefined spaces was raised. The concept behind this would be that since a child uses the multiple intelligences together interchangeably, spaces should not be labeled in support of a single intelligence. Furthermore, the child's own imagination along with the interaction with the rest of the class would be all that would be necessary to define the space given the lesson at hand. After a number of parti's exploring these ideas, it became quite clear that while the theory behind the idea was rich in nature, the resulting environments where far from practical. The truth is children need some definition. But more than that, it takes more imagination to transform a defined space into something it isn't than to take an undefined space and define it. Giving a child a conventional classroom and encouraging him to change it into a different environment gets that child to think outside the box.

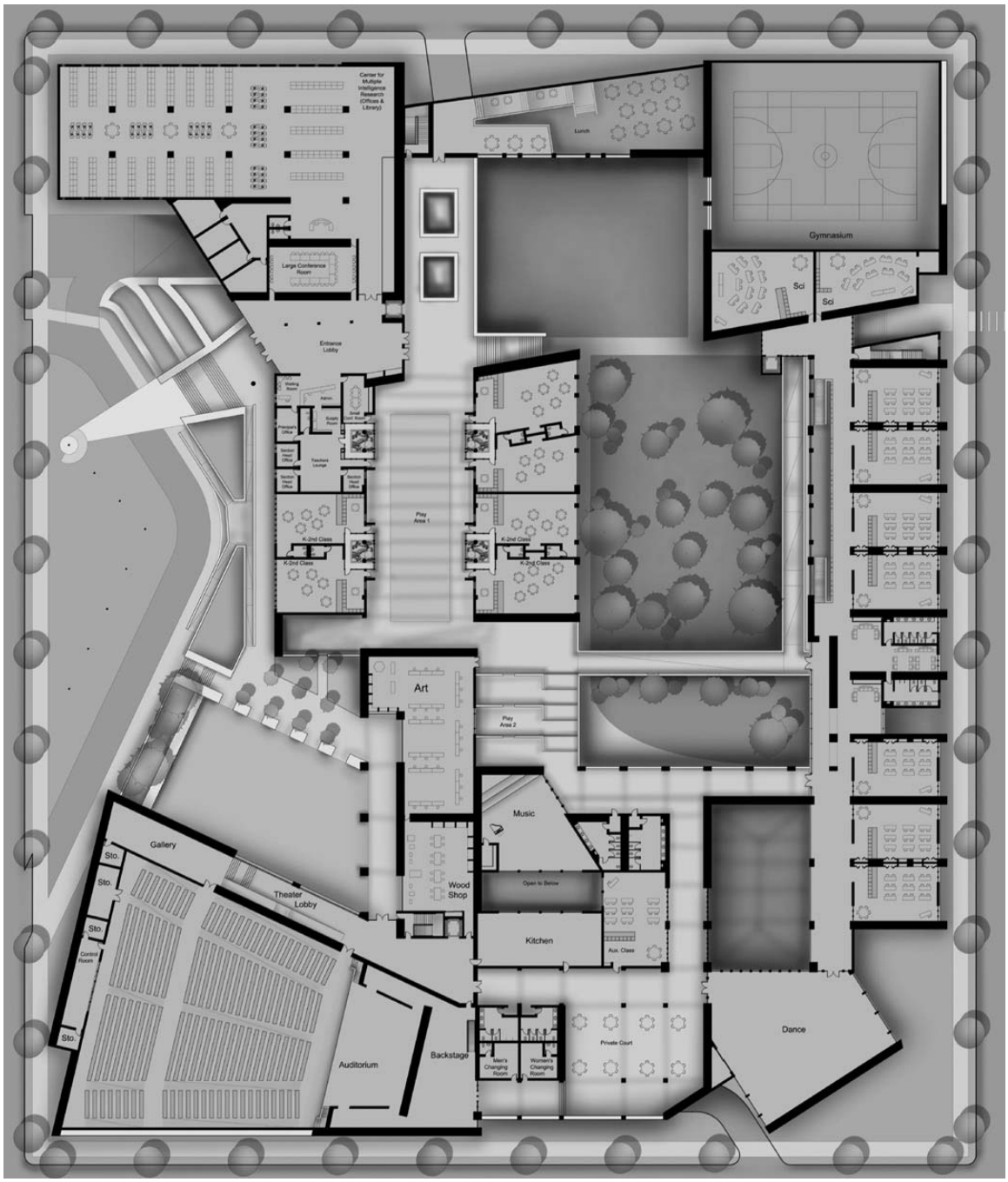

Fig. 92 – Main Floor of Proposed New School of Orlando Campus

The resulting design for The New School is a system of defined rooms and undefined outdoor and connecting spaces. Teachers are free to leave their classrooms as they see fit and inhabit these courtyards and play spaces.

Gardner teaches that the mere awareness of the multiple intelligences is the simplest way to begin to develop the individual's weaker intelligences. How can you get better at spatial perception and understanding if you are unaware that such a thing exists? This concept was one of the largest driving forces for the "defined spaces" approach to the New School's design. Rather than the third graders having a set space to call their own, and having the teachers move in and out - bringing different lessons and projects to them - bridging all of the intelligences, it is crucial that the students move from space to space. The physical act of movement becomes a logical cue to the child, that the current intelligence hierarchy is shifting and a new intelligence will replace the old as the focus for the current activity. It is then up to the teachers to make sure that their lessons cover not only the chief intelligence that is supported by their subject, but also a variety of other intelligences.

Fig. 93 – View of Quiet Reading Court in Proposed New School of Orlando Campus

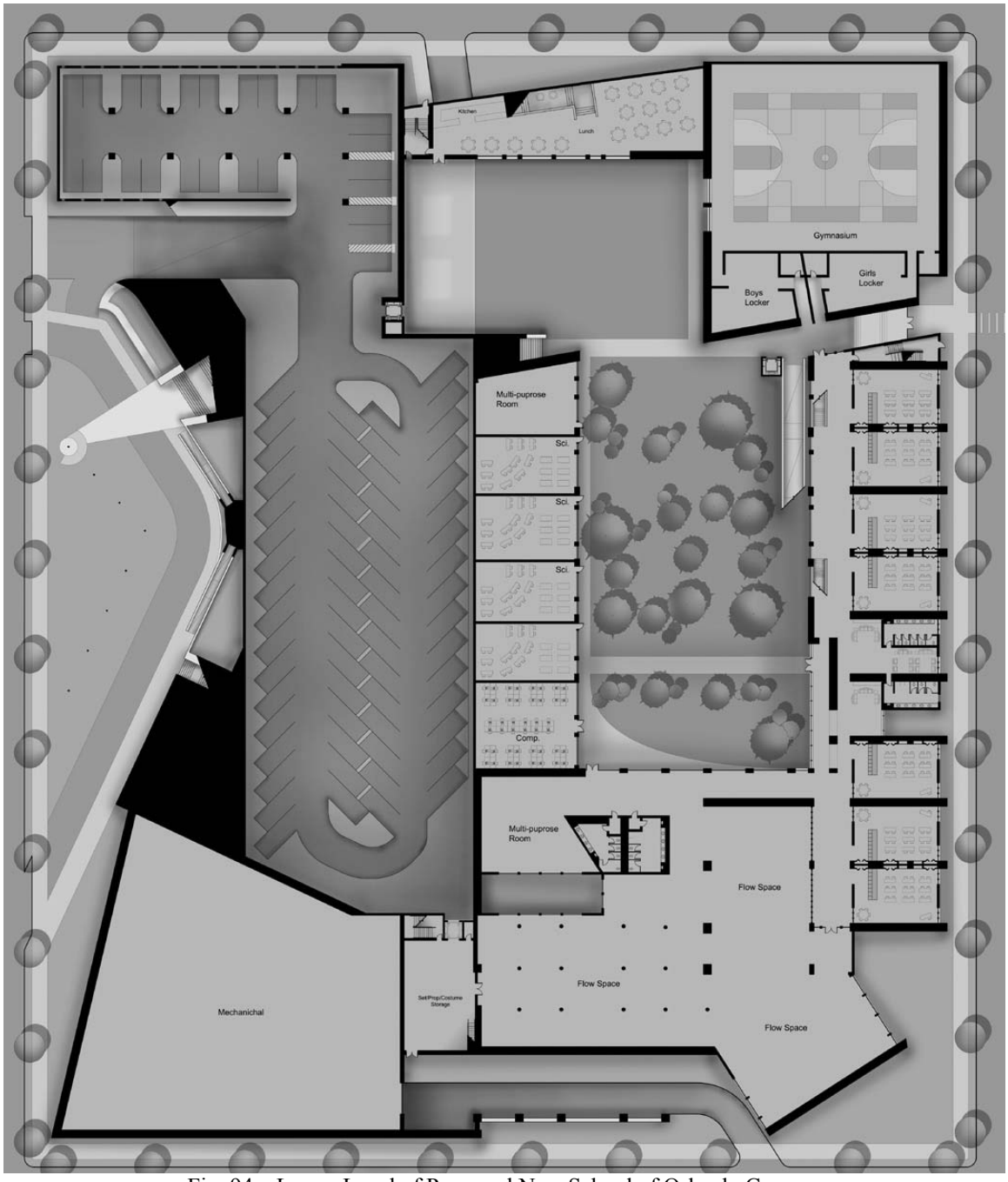

Fig. 94 – Lower Level of Proposed New School of Orlando Campus

Fig. 95 – View of Entrance to Proposed New School of Orlando Campus


Fig. 96 – View of Minor Play Area and Bridge to Upper Level Classes in Proposed New School of Orlando Campus

Fig. 97 – View of Theater Entrance in Proposed New School of Orlando Campus

Fig. 98 – View of Private Courtyard Behind Theater in Proposed New School of Orlando Campus

Fig. 99 – View of Small Playing Field and Tree Grove in Proposed New School of Orlando Campus

Fig. 100 – Interior View of Upper Level Classroom in Proposed New School of Orlando Campus

Fig. 101 – West Elevation of Proposed New School of Orlando Campus

Fig. 102 – South Elevation of Proposed New School of Orlando Campus

Fig. 103 – East Elevation of Proposed New School of Orlando Campus

Fig. 104 – North Elevation of Proposed New School of Orlando Campus

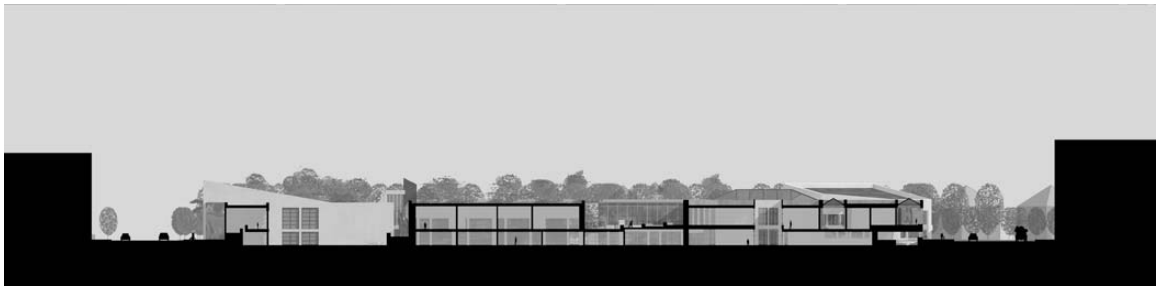

Fig. 105 – Site Section Facing East in Proposed New School of Orlando Campus

Fig. 106 – Site Section Facing North in Proposed New School of Orlando Campus

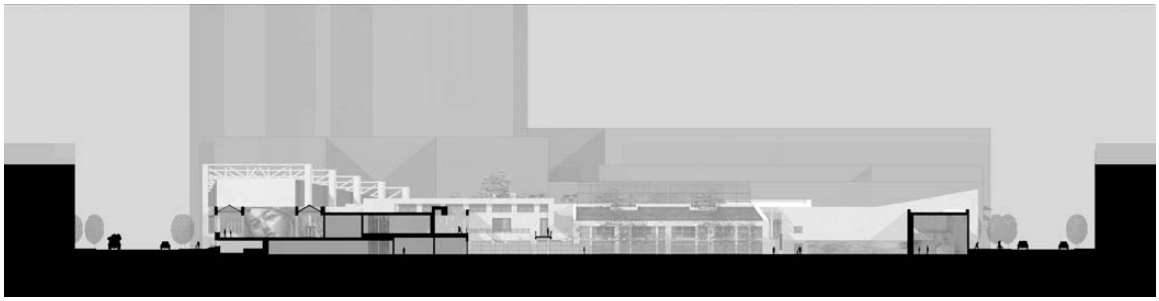

Fig. 107 – Site Section Facing West in Proposed New School of Orlando Campus

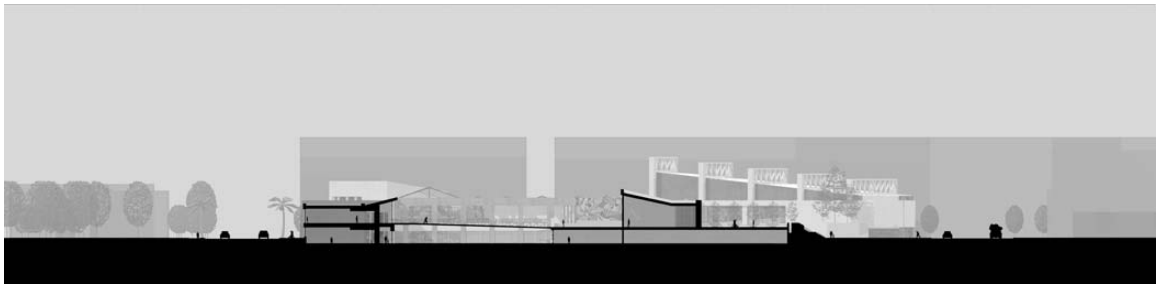

Fig. 108 – Site Section Facing North in Proposed New School of Orlando Campus

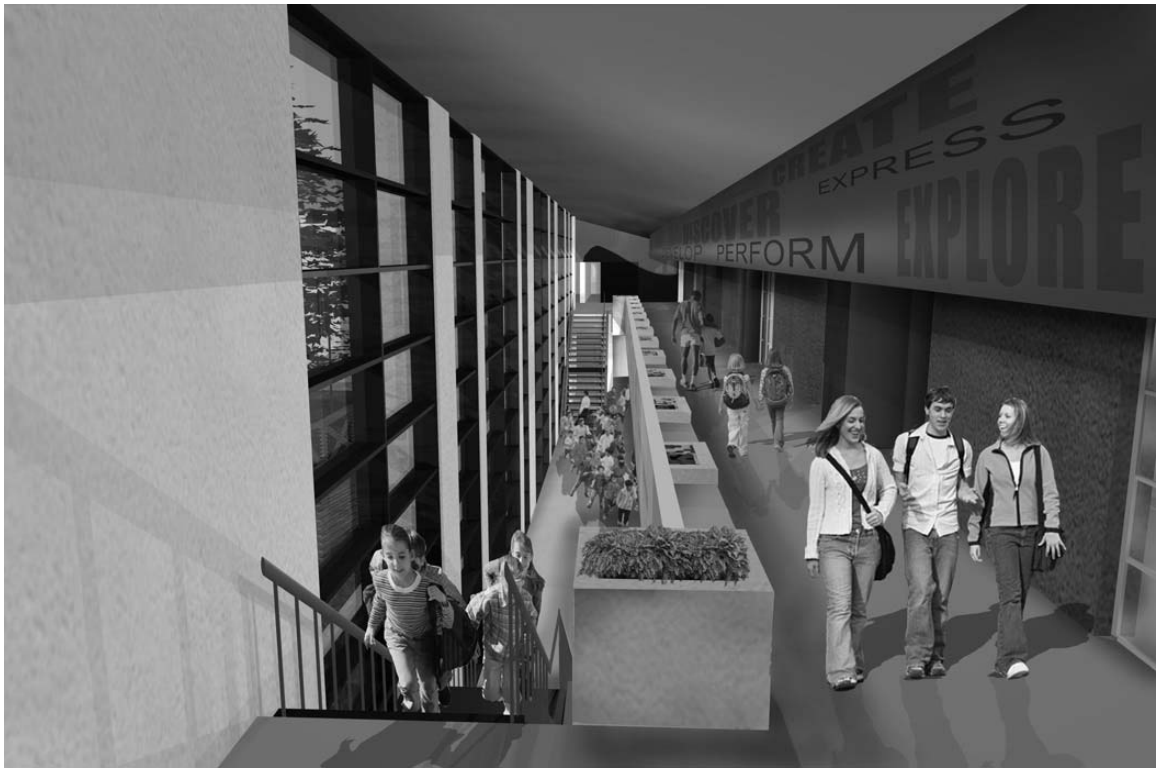

Fig. 109 – View of Hallway in Upper Level Classes Wing in Proposed New School of Orlando Campus

Concluding Thoughts

While the overall organization of spaces and rooms for the New School of Orlando is consistent with Gardner's theories, and the school, in its current state of design, would meet (if not exceed) the needs and desires of the actual New School's teachers and students, the design cannot be said to be complete. While the diagonal walls and surprise spaces bring up ideas of discovery and unexpected encounter, there is an overall lack of a rational order to the project. Had a rigid order been applied to the campus as a whole, these moments of discovery would be that much more engaging. The diagonal surfaces breaking away from an orthogonal whole would become crucial moments in the project whereas no they simply exist in a whimsical manner.

Fig. 110 – Aldo van Eyck

Fig. 111 – Girl Playing with small pool of water made from rain falling into a concave basin formed into the ground at the Amsterdam Orphanage

Secondly, there is an entire layer of detail that would need to be designed into the project to get it to reach an ideal state. Currently, the visual, spatial and kinesthetic intelligences are engaged actively through the forms, relationships and colors of the buildings. However a lesson could be learned from the more simplistic designs of Aldo van Eyck (Fig. 110, 111), who uses the tactile as the main form of discovery in his Amsterdam Orphanage. Though it would be a complete design project on its own, The New School design would highly benefit from an investigation of the tactile possibilities for discovery throughout the campus.

BIBLIOGRAPHY

Bernard Tschumi Architects 10 May 2004 <http://www.tschumi.com>

Gardner, Howard Frames of Mind: The Theory of Multiple Intelligences Basic Books, 10th Edition. 1993

King, Stephen Pixcentrix 22 April 2004 <http://www.pixcentrix.co.uk/>

Kliment, Stephen Building Type Basics for Elementary and Secondary Schools John Wiley & Sons, Inc. New York 2001

LEARN North Carolina: Beginning Teacher Handbook "Physical Environment" 20 April 2004 <http://oops.learn.unc.edu/ newlnc/carepak.nsf/doc/arrange2>

McLeod, Michael "Sesame Street Meets Puccini" Orlando Sentinel; 29 Dec. 2003; pg. E.1

McLeod, John Urban Schools in Europe: A Study Tour of Five Cities New York, Educational Facilities Laboratories, 1968

Michael Maltzan Architecture Kidspace Children's Museum. arcspace. 10 May 2004 <http://www.arcspace.com/architects/maltzan/Kidspace/>

Microsoft® Encarta® Online Encyclopedia 2001 "Orlando: History" 12 February 2004 <http://encarta.msn.com>

National Weather Service and the National Oceanic and Atmospheric Administration 13 February 2004 <http://www.nws.noaa.gov>

New School of Orlando Prep Karen Sorin. 12 May 2004 <http://www.newschoolorlando.com/>

Reverberant | Sound Art | Projects 22 April 2004 <http://www.reverberant.com>

Roth, Alfred The New Schoolhouse Frederick A. Praeger, Inc. Publishers. New York 1958

Sorin, Karen. Personal Interview. January 6, 2004

Sorin, Morris. Personal Interview. January 6, 2004

Veenema, Shirley The Project Zero Classroom: New Approaches to Thinking and Understanding Project Zero 1997

Weston, Richard School of Thought: Hampshire Architecture 1974 – 1991 Hampshire County Council 1991