A puzzle piece epidemic

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A PUZZLE EPIDEMIC
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"Most parents don't know how it feels...and I hope you never do
To have a child that is special and to have all your dreams taken from you.

I had the same dreams, of ball games, driving, and first dates
But plans now have to change at a very fast rate.

Our lives now different, doctors, therapy, special schools, and tests
it is hard and scary but I love my child so I do my best.

When I go out in public with him just to have some fun
all the stares and comments sometimes I just want to run.

For some of us we just can not bare all the tantrums
then some people think that we just don’t care.

I hope the workers will treat him as they should
my child can not talk please treat him good.

I sit at home and he is on my mind
what is he thinking does he wonder why I left him behind.

I am not trying to be picky, I just want the best
He is a person, he deserves the best and so do all the rest.

I know when I complain, I make some people ill
Please don’t take it out on him if it was your child how would you feel.

When I am at home and I have to trust in what you do
Please just think, what if it wasn’t him in that body, but you.”

Jake's Mom
Susan Hobbs
There was a little boy named Kyle that smiled all the time until he was about one year old. Around one year old, he stopped smiling and started becoming more anti-social. He did not speak, he did not make eye contact, and he spent much of his time alone. He parents began to think that they were doing nothing wrong and were not loving him enough. They decided it was time to research. They searched and searched on the web and in books, but could find no concrete answers for what was wrong with Kyle. They started calling doctors, therapists, psychiatrist, and went to many appointment and took many tests. Finally after much stressful work, Kyle and his family learned that he had autism. After the diagnosis he began many programs and treatments that took up much of his and his parents time. After a couple years in these programs, Kyle is speaking, showing affection, and proves that autistic children can function normally with the proper treatment.

Many other families face the challenge of diagnosis. Every 20 minutes another child is being diagnosed with Autism and it is becoming an increasing epidemic. Autism is a "neurodevelopment disorder that manifests itself in markedly abnormal social interaction, communication ability, patterns of interests, and patterns of behavior." (Children’s Hospital of Boston) Autistic children act, learn, and sense things differently making their placement in the world very difficult. There is an increasing number of parents that do not know the warning signs and miss opportunities for early intervention. More people need to be warned.

Once a child is diagnosed with Autism, the child and family meets with doctors and psychologists to form an Individualized Education Plan (IEP) for the child. This plan will help the child by This is a plan that defines goals, techniques, treatments, and services that is unique to each child. These components of an autistic program are the puzzle pieces in a puzzle. Specific pieces fit together to make one out coming puzzle.
1. Auditory Integration Training (AIT): A technique used to relieve hearing dysfunctions by “retraining” the ear to hear in a more balanced fashion.

2. Autism: a neurodevelopment disorder that manifests itself in markedly abnormal social interaction, communication ability, patterns of interests, and patterns of behavior.

3. Autism Behavior Checklist (ABC): A checklist containing a list of behaviors capable of measuring the level of autistic behaviors in individuals.

4. Early Childhood Intervention (ECI): A program designed to identify and treat developmental problems or other disabilities as early as possible.

5. Individualized Education Plan (IEP): A plan that identifies the student's specific learning expectations and outlines how the school will address these expectations through appropriate special education programs and services.

6. Occupational Therapy (OT): A therapy that assists in the individual’s development of fine motor skills that aid in daily living.

7. Relationship Development Intervention (RDI): A parent-based intervention program where parents are provided the tools to effectively teach Dynamic Intelligence skills and motivation to their child.

8. Sensory Integration (SI): The way the brain processes sensory stimulation or sensation from the body and then translates that information into specific, planned, coordinated motor activity.
Children with autism view the physical world differently than the average person. They have difficulty expressing needs, mixing with others, and responding to normal teaching methods. The inability to understand their immediate environment and control surrounding events directly effects their mental development. Specific treatments and teaching methods are used to help advance the autistic child for kindergarten.

In order to design a constructive autistic center, the building must be designed to accommodate the children's diagnosis, treatments, therapies, and education. For the autistic children to get full use of the building, the architecture itself should offer support to the program that each child uses daily. Past studies have shown that the physical environment affects a children's learning and development, relationships, and program's ability to promote advancement. A well designed building would support "exploration and a sense of control" and "promote a sense of security" that leads to the ability to form relationships. Most importantly, appropriately articulated classrooms encourage "active engagement, extended play, and pro-social interaction." This leads to a positive learning environment that will support teachers to child interaction.

"If a child cannot learn in the way we teach we must teach in a way the child can learn"
~Dr. O. Ivar Lovaas
Architectural developments like sensory design allow for such interactions to occur. There are four sensory categories that structure how we relate to a room; the visual, the tactile, the aural, and the haptic. Using these senses to design the building will help make the children interact with the architecture while learning. The therapies and teaching techniques could combine with architecture and become one method. This can happen in a couple of ways. For example, rather than having the vision therapy as a device on a wall, the whole wall is a vision device. Another example is using different materials to categorize areas. For example, after practice an autistic child would know he was in the therapy headquarters of the center by the brick walls. The different feeling, look, and sound of the brick will generate a memory that will help the autistic child concentrate. It is important that an autistic center is positive and generates the child's development that organizes their world. In order for this to work, the children, teacher, and building need to work as one.

"With intense therapy, practice, and schooling some children can improve their social and other skills to the point where they can fully participate in mainstream education and social events”
~Austin Society
The program of an autistic center is also a set of crucial components that properly placed together will be developed into a learning instrument. The components of an autistic center are very much based upon the steps a family takes for diagnosis and treating a child with autism.

First is child goes through steps to be diagnosed autistic. Both physicians and psychologists have a series of tests important for diagnosis. Physicians test the child on language, sensory, movement, social response, emotional response, amusement, self care, sleep and domestic skills in private examining rooms. Psychologists test the child on intellectual, social, and language development.

After the initial diagnosis of autism, an Individualized Education Plan (IEP) is done with the physicians, psychologists, specialized teachers, and the parents. This plan then specifies what treatments are necessary to promote the child’s success. A combination of treatments unique to the autistic child will present what rooms of the program will be utilized. Possible Treatments are behavior modification, dietary intervention, vitamins and supplements, sensory integration, occupational therapy, physical therapy, speech therapy, music therapy, vision therapy, canine companions, relationship development intervention (RDI), and/or hyperbaric oxygen therapy. Specialists of each of these treatments are available to assist the child. To guarantee success, teacher’s aids are assigned to each class. Annual IEP meetings and observation ensures precision in the treatment and progress of the child.
This center also has features for the parents and families of the autistic children. Another important factor of this program is counseling for both the child and their family. This process can be mentally straining on both parties. Counselors and group counseling sessions will allow parents to express themselves. There will also be training facilities to teach parents and other family members of the treatments, teaching methods, and other behavioral methods. The parents and family involvement is very important in the child’s success.

Beside the amenities that crucial to autistic diagnosis and training, there are the normal program units. Recreation will be provided in both physical and learning activities. Art workshops, music rooms, fitness rooms, greenhouse, theatre, and multipurpose playgrounds will all be available to the children.
**Programatic Goals**

**Goals of Treatment:** (pg. 44-45, Gutstein)

- Family and Professional Education
- Increased Organization of Self and Objects in the Environment
- Increased Awareness of others in the Environment
- Increased Contextual Awareness
- Increased Interpersonal Skills
- Increased Emotional Skills
- Adaptation to Change, Transition and Ambiguity
The classroom is the most important factor in a school and should be considered first in programming so that proper classrooms are designed to encourage productive learning.

**Principles in the classroom:** *(pg. 52, Gutstein)*

- Incorporate the RDA analysis of obstacles and modifications into the IEP as teaching modifications to create a more "user friendly" classroom functioning

- Distinguish between short-term compensations, long-term remediation and co-occurring disorders

- Develop plans for gradually fading out compensation services as remediation is successful

- Don't place the child into overwhelming situations where he will be incompetent or rejected

- Make sure that students treat each other with courtes, friendliness and respect. But don't ask other children to take all of the responsibility for making encounters successful

- Provide education, support and consultations to parents who are trying to develop their RDI programs
"Play areas are arranged around sociodramatic, functional constructive and manipulation-sensory play materials while also including space for art, music, games, and sets of theme-based materials" ~Wolfberg

The physical nature of the play area impacts how children play and socialize. Many different factors are taken into consideration when designing a play area. Acoustics, lighting, colors, placement of furniture and materials and the overall aesthetics of space affect how children feel, move, explore, interrelate and organize themselves for play. The following variables are considered when designing a play space: (Wolfberg)

- **Size restriction and spatial density**: A medium size space will keep children interacting while allowing for space to move freely.

- **Clearly defined boundaries**: Partitions on at least three sides; sturdy toys are good dividers

- **Explicit Organization**: Organize spaces by materials and pictures that are easily accessible to children

- **Limited Distractions**: Try to keep focus on activity but not overcrowding space

- **Activity and Theme-based Arrangements**: furniture and play materials are grouped in sections based on activities.
When programming a building, effective settings to teach and treat an autistic child must be considered. These therapeutic settings can help design spaces that will be specific to autistic children.

**Characteristics of Therapeutic Educational Settings:** (pg. 56, Gutstein)

1. **The primary objective is to teach independent thinking skills**
   a. Objectives target competence in normal systems

2. **Appropriate modifications are made in the physical environment**
   a. Unnecessary noise is reduced
   b. Boundaries are clearly demarcated
   c. All tasks provide clear visual integration of instructions with materials

3. **Useful communication systems are developed for students and teacher**
   a. New information is presented in one-to-one instruction
   b. Joint attentional demands are removed during instruction

4. **Modifications are created to increase independent functioning**
   a. Reliance on verbal prompts is eliminated

5. **Negative behavior is analyzed prior to intervention**
   a. Negative behavior is assumed to be due to confusion or skill deficit
   b. Physical structure and teaching objectives are modified to reduce negative behavior

*See Appendix P*
Therapeutic elements are essential in the classroom to encourage autistic children's education. These elements are also important in creating a Therapeutic educational setting.

**Essential Elements of a Therapeutic Classroom:** (pg. 57, Gutstein)

1. Specific physical areas are created that have clear visual boundaries
2. Tasks have clear, visually presented sequential components
3. Routine and flexibility are taught and incorporated into plans
4. Tasks are organized around their goal state
5. Materials are structured and modified to help the child independently understand the task
6. Transitions join tasks together in a natural way
7. Communication is used to foster independence, not reliance on an adult interpreter
8. Specific work systems are set up
9. Teachers view themselves as facilitators and engineers not managers

*See Appendix P*
In order to create effective settings, it is always good to identify ineffective settings that could negatively affect the teaching in the classrooms.

Characteristics of ineffective settings: (pg. 58, Gutstein)

1. Passive compliance is more important than competence
   a. Objectives are about complying, sitting quietly, following instructions
   b. There is not enough emphasis on independent functioning, checking your own schedule, staring and completing your own tasks

2. Limited modification of the physical environment
   a. The room is over-stimulating
   b. Boundary areas are not clearly marked
   c. Materials are not integrated and user friendly with visual communication

3. Over-reliance on verbal communication

4. Modifications increase dependent functioning
   a. Rigid routines are developed with no attempt to teach adaptation to change
   b. Lack of routine leaves the student confused and dependent

5. Negative behaviors reacted to immediately with consequences
   a. Students receive consequences before behavior is analyzed and it is determined if the cause is confusion, over-stimulation, miscommunication distraction compulsion, need for closure or manipulation.

*See Appendix P
In past studies, it has shown that some materials enhance concentration, focus, and interaction among autistic children. The following are factors considered for picking materials in a room or for play space.

**Materials:** (pg 73, Wolfberg)

- High motivational value
- Developmentally/age appropriate
- High social interactive potential
- High imaginative potential
- Reflecting diversity of culture, ethnicity, gender roles, abilities
- Nonviolent
- Safe and durable
The entrance to the childhood center should be designed for maximum light and comfort. The entrance gives the first impression to occupants and should relay the same themes that the architecture itself relays.

<table>
<thead>
<tr>
<th>Room</th>
<th>Quantity</th>
<th>Sq. ft</th>
<th>Total Sq. ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lobby</td>
<td>1</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Reception</td>
<td>1</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Director</td>
<td>1</td>
<td>180</td>
<td>180</td>
</tr>
<tr>
<td>Assistant Director</td>
<td>1</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>960 sq. ft</strong></td>
</tr>
</tbody>
</table>

Scale: 1'0" = 1/64"
Diagram of the child is crucial in a proper IEP plan and future treatments. The right combination of rooms with proper dimensions are important to a successful diagnosis.

Scale: 1'0" = 1/64"
**Treatment**

<table>
<thead>
<tr>
<th>Room</th>
<th>Quantity</th>
<th>Sq. feet</th>
<th>Total sq. feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audiology Therapy</td>
<td>1</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Physical Therapy</td>
<td>1</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Behavior Therapy</td>
<td>1</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Speech Pathology</td>
<td>1</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Occupational Therapy Room</td>
<td>1</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Sensory Room</td>
<td>1</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Classroom</td>
<td>21</td>
<td>780</td>
<td>16,380</td>
</tr>
<tr>
<td>Training Room</td>
<td>2</td>
<td>250</td>
<td>500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>18,880 sq. feet</td>
</tr>
</tbody>
</table>

Treatment is very important in the future success of a child. These rooms are where the children will be spending most of their time so they must be accurate in size, orientation, and design.

Scale: 1'0"=1/64"
### STAFF

<table>
<thead>
<tr>
<th>Room</th>
<th>Quantity</th>
<th>Sq. feet</th>
<th>Total sq. feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dietician Office</td>
<td>1</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>Nutritionist Office</td>
<td>1</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>Social Worker Office</td>
<td>20</td>
<td>160</td>
<td>3200</td>
</tr>
<tr>
<td>Teachers Aid Office</td>
<td>20</td>
<td>160</td>
<td>3200</td>
</tr>
<tr>
<td>ESL Office</td>
<td>2</td>
<td>160</td>
<td>320</td>
</tr>
<tr>
<td>Teacher Conference Room</td>
<td>5</td>
<td>300</td>
<td>1500</td>
</tr>
<tr>
<td>Teacher Lounge</td>
<td>1</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>8,940 sq. feet</strong></td>
</tr>
</tbody>
</table>

Even though majority of the architectural efforts are considered with the ability of the child, the staff is a crucial component that needs to be considered as well. Adequate teacher's lounge and offices are important for them to be at their highest potential.
Beside the treatment and traditional classroom activities. Amenities are available to give children activities that are separate from their daily routine.

<table>
<thead>
<tr>
<th>Room</th>
<th>Quantity</th>
<th>Sq. feet</th>
<th>Total sq. feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art Workshop</td>
<td>1</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Music room</td>
<td>1</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Library</td>
<td>1</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Multipurpose Room</td>
<td>1</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>Kitchen</td>
<td>1</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Indoor play space</td>
<td>3</td>
<td>800</td>
<td>2400</td>
</tr>
<tr>
<td>Outdoor play space</td>
<td>1</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>6,300 sq. feet</strong></td>
</tr>
</tbody>
</table>

Scale: 1'0"=1/64"
## TOTAL PROGRAM

### Room Total (sq. feet)
- **Reception**: 960
- **Evaluation**: 2,020
- **Treatment**: 18,880
- **Staff**: 8,940
- **Amenities**: 6,300
- **Bathroom**: 900

<table>
<thead>
<tr>
<th>Room</th>
<th>Total sq. feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception</td>
<td>960</td>
</tr>
<tr>
<td>Evaluation</td>
<td>2,020</td>
</tr>
<tr>
<td>Treatment</td>
<td>18,880</td>
</tr>
<tr>
<td>Staff</td>
<td>8,940</td>
</tr>
<tr>
<td>Amenities</td>
<td>6,300</td>
</tr>
<tr>
<td>Bathroom</td>
<td>900</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td><strong>38,000 sq. feet</strong></td>
</tr>
<tr>
<td>Maintenance x10%</td>
<td><strong>3,800 sq. feet</strong></td>
</tr>
<tr>
<td>Circulation x15%</td>
<td><strong>6,270 sq. feet</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>48,070 sq. feet</strong></td>
</tr>
</tbody>
</table>

**TOTAL SQ. FOOTAGE: 48,070 SQ. FEET**
<table>
<thead>
<tr>
<th>Position</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>Director</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Director</td>
<td>1</td>
</tr>
<tr>
<td>Receptionist</td>
<td>1</td>
</tr>
<tr>
<td>Physician</td>
<td>1</td>
</tr>
<tr>
<td>Psychologist</td>
<td>1</td>
</tr>
<tr>
<td>Audiology Therapist</td>
<td>1</td>
</tr>
<tr>
<td>Physical Therapist</td>
<td>1</td>
</tr>
<tr>
<td>Behavior Therapist</td>
<td>1</td>
</tr>
<tr>
<td>Speech Pathologist</td>
<td>1</td>
</tr>
<tr>
<td>Occupational Therapist</td>
<td>1</td>
</tr>
<tr>
<td>Teachers</td>
<td>21</td>
</tr>
<tr>
<td>Teacher aid</td>
<td>21</td>
</tr>
<tr>
<td>Nutritionist</td>
<td>1</td>
</tr>
<tr>
<td>Dietician</td>
<td>1</td>
</tr>
<tr>
<td>ESL Teacher</td>
<td>2</td>
</tr>
<tr>
<td>Librarian</td>
<td>1</td>
</tr>
<tr>
<td>Art teacher</td>
<td>1</td>
</tr>
<tr>
<td>Music teacher</td>
<td>1</td>
</tr>
<tr>
<td>Social workers</td>
<td>21</td>
</tr>
</tbody>
</table>

| Total                             | 80 Staff Members |
PUlitan ethics molded a stable and structured society
- Puritans founded America's first public school in 1653 and America's first college in 1636
- "Hard work, moral uprightness, and an emphasis on education remain part of Boston's culture."

British attempted to exert control on the thirteen colonies during the 1770's. This initiated events such as the American Revolution, Boston Tea Party and

- Boston was become chartered as a city in 1822
- During 1900's, Boston was one of the largest manufacturing centers
- Boston flourished culturally during the late nineteenth century and become known for its artistic and literary culture
In 2002, Boston Public Schools were ranked the best city school system in the country by Forbes Magazine with a graduation rate of 82%.

The Massachusetts Bay Transportation Authority (MBTA) operated the nation's first underground transit system.

Demographics:

- 589,141 people, 239,528 households, and 115,212 families residing in the city.
- There were 239,528 households out of which 22.7% had children under the age of 18.

Education:

- Boston Public Schools are the oldest public school system in the U.S.
- In 2002, Boston Public Schools were ranked the best city school system in the country by Forbes Magazine with a graduation rate of 82%.

Transportation:

- Boston is connected to the Mass Pike (I-90) and I-95.
- Amtrak operates through the city.
• Department of Neurology at Children's Hospital Boston is the oldest, largest and best-known program in child neurology in the world.

• We have a tradition of evaluating and treating the whole child with a neurological problem. Moreover, we pay close attention to the impact of the disorder on the entire family. Our department provides complete neurological evaluation, accurate diagnosis, modern treatment and careful follow-through; we aim to provide the very latest forms of therapy for all pediatric neurological disorders.

• With ten locations throughout Eastern Massachusetts, Children's brings its standard of excellence to you. The Children's Hospital Network, in collaboration with leading community hospitals, provides convenient access to pediatric medical care and the expertise of Children's specialists. Your child's health conditions, from the common to the complex, can be treated close to home. No matter where you live, great pediatric care has never been easier to get to.

(The Children's Hospital of Boston Website)

The Children’s Hospital of Boston carries the same morals that I which to portray in my autism center. This will help carry the theme of full family help that I fell is essential in the process of properly treating a child with autism. Also, the many branches around the Boston location give my program the ability to expand out to other cities with Children's Hospital of Boston locations. Most importantly, having a location near the Children's Hospital of Boston allows for routine checkups and other appointments during their day at the center.
In order to have a complete project, the site must also portray the concepts that are associated within the problem intentions. The site in Greater Roxbury was chosen due to an accumulation of the following concerns:

- Connecting to the research and efforts towards neurology issues
- Having a location near the Children's Hospital of Boston allows for routine checkups and other appointments during the day at the center
- City context makes center available to all races and class levels
- Easy accessible by public transit and artery highways
- Located in school district
- Near public parks for recreation
- Available green space on site
- Pedestrian friendly area
- Safe neighborhood
- Well developed and landscaped area
- Site that associates with the hospital, but separates itself with daily program
- Unique architectural context
Taking the proposed concerns into consideration, the site in Greater Roxbury, Massachusetts was chosen for the following reasons:

• Northeastern part of America strives in Autistic research, Boston is a main city that focuses research on neurology and Autism

• The site is approximately 1.3 miles from the hospital with a travel time of two minutes from the site to the hospital

• Located in school zone, neighboring Madison Park high school and RCC (Roxbury Community College), and other primary schools are with five minutes traveling time

• Renaissance and Southwest Corridor Park are within walking distance

• Located in Roxbury, a borough of Boston, Massachusetts

• A terminus of the Mass Pike (I-90) and I-93 runs through the city

• Bus and Train station within walking distance of site

• Site is overgrown green space

• Site surrounded by sidewalks and intersections have proper pedestrian crossing

• Site is across from a Boston Police station

• Architecture of Boston is seen from site
Roxbury, Massachusetts

Roxbury is in the center of other Boroughs of Boston. This allows everyone equidistant and easy access to the center.

Surrounding Boroughs: (clockwise)

South End
North Dorchester
South Dorchester
Jamaica Plains
Fenway/Kenmore
The selected site is currently fenced off and overgrown. The surrounding context is well designed and architecturally updated. Designing these parcels would contribute to the evergrowing context of Roxbury.

Total Square Feet: Approximately 114,500 sq. ft

Wasted Space

Historic architecture around site

Overgrown Site

View of surrounding architecture
The site has many amenities surrounding it that make it a desirable location for a childcare center.
Roxbury Strategic Master Plan

"The plan focuses on four key elements: quality of life, housing, economic development and transportation. The goal is to produce a strategic planning framework to guide future development in this vital urban neighborhood. As a component of the plan, detailed land use and urban design guidelines are being developed for specific priority sites and focus areas."

(Stull and Lee, Inc.)
Recreation and Green Space

A. Baseball and Track Fields
B. Southwest Corridor Park
C. Open Green Space
School Zone

A. Madison Park High School
B. New England College of Optometry
C. James P Timilty Middle School
D. Roxbury Community College
E. Maurice J Tobin School
F. Massachusetts College of Pharmacology

School Zone
Bordering Schools
Secondary Schools
Tertiary Schools

A PUZZLE PIECE EPIDEMIC

ANALYSIS CONTINUED
The following codes are from the International Building codes 2006:

303.1 Assembly group A. A-3: Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A including, but not limited to community halls, indoor swimming pool, and libraries.

507.6 Group A-3 buildings. The area of a one-story, Group A-3 building used as a place of community hall, lecture hall, and indoor swimming pool of Type II construction shall not be limited when the building shall be surrounded and adjoined by public ways or yards not less than 60 feet in width.

305.1 Educational Group E. Day Care: The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than five children older than 2 1/2 years of age, shall be classified as a Group E occupancy.

507.9 Group E buildings. The area of a one story Group E building of Type II, IIIA, or IV construction shall not be limited when each classroom shall not have less than two means of egress, with one of the means of egress being a direct exit to the outside of the building, and the building is surrounded and adjoined by public ways or yards not less than 60 feet in width.

308.1 Institutional Group I. 308.5 Group I-4. day care facilities. This group shall include building and structures occupied by persons of any age who receive custodial care for less than 24 hours by individuals other than parents or guardians, relatives of blood, marriage or adoption and in a place other than the home of the person cared for.

*See Appendix C
The following codes are from the International Building codes 2006:

504.1 General. The height permitted by table 503 shall be increased in accordance with this section:

<table>
<thead>
<tr>
<th>Occupancy</th>
<th>Height Limitation (feet)</th>
<th>Building Area (stories)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-3</td>
<td>UL</td>
<td>UL</td>
</tr>
<tr>
<td>E</td>
<td>UL</td>
<td>UL</td>
</tr>
<tr>
<td>I-4</td>
<td>UL</td>
<td>UL</td>
</tr>
</tbody>
</table>

508.3.3.4 Separation. Table 508.3.3 Required Separation of Occupancies: No separation requirement between Occupancy A, E and I.

1016.1 Travel Distance Limitations. Table 1016.1 Exit Access Travel Distance:

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>WITHOUT SPRINKLER SYSTEM (feet)</th>
<th>WITH SPRINKLER SYSTEM (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, E</td>
<td>200</td>
<td>250</td>
</tr>
<tr>
<td>I-4</td>
<td>150</td>
<td>200</td>
</tr>
</tbody>
</table>

Table 1004.1.1 Maximum Floor Area Allowances per Occupant:

<table>
<thead>
<tr>
<th>Day care</th>
<th>35 net</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational</td>
<td></td>
</tr>
<tr>
<td>Classroom area</td>
<td>20 net</td>
</tr>
<tr>
<td>Shops and other vocational areas</td>
<td>50 net</td>
</tr>
</tbody>
</table>

*See Appendix C
The following codes are from the International Building codes 2006:

**Table 601** Fire-Resistance Rating Requirements for Building Elements:

<table>
<thead>
<tr>
<th>Building Element</th>
<th>Type I-(A) (hours)</th>
<th>Type II-(A) (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural frame</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Bearing walls:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Interior</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Nonbearing walls</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Floor construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Including supporting Beams and joists</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Roof construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Including supporting Beams and joists</td>
<td>1.5</td>
<td>1</td>
</tr>
</tbody>
</table>

*See Appendix C*
The following zones are from the Boston Redevelopment Authority:

SECTION 50-1. Statement of Purpose, Goals, and Objectives. The goals and objectives of this Article and the Roxbury Neighborhood Plan are to promote and expand neighborhood educational and cultural facilities; to promote the viable neighborhood economy and provide for new economies and expansion of job opportunities; to preserve, enhance, and create open space; to protect the environment and improve the quality of life; to promote the most desirable use of land; and to promote the public safety, health, and welfare of the people of Roxbury.

SECTION 50-8. Greater Roxbury EDA. A focal point for economic development activity is the Greater Roxbury Economic Development Area ("EDA"), an area which has historically been referred to as the Southwest Corridor. This area has been the location of major development and economic activity in the past. Because of the central nature of the location and access to public transportation and major arteries, the Greater Roxbury EDA should be a location for major economic growth in the future. The Greater Roxbury EDA provides opportunities for significant economic development projects on publicly owned land which links Roxbury to the downtown economy.

SECTION 50-10. Use Regulations Applicable in EDAs. Within the Greater Roxbury EDA of the Roxbury Neighborhood District, the uses identified in Table A of this Article
The following zones are from the Boston Redevelopment Authority:

**SECTION 50-39. Design Guidelines for the Roxbury Neighborhood District.** This Section 50-39 establishes the following design guidelines for the Roxbury Neighborhood District:

1. Site planning, including location of buildings, open space, and vehicular access and parking areas, shall be designed to enhance the street frontage and surrounding Buildings and spaces.

2. Vehicular access and egress to a site shall provide safe visual access for drivers and pedestrians.

3. When possible, parking shall not be located in front of Buildings.

4. Design features of a Proposed Project for residential or commercial uses shall take into consideration any special characteristics of the site and its location and shall enhance and reinforce any historic qualities of existing Structures.

5. Setbacks, corner treatments, and other design details shall be used to minimize the sense of bulk of Structures, and ornamental and decorative elements appropriate to the urban context are encouraged.

6. Roofs of buildings shall be designed to minimize the visibility of roof structures.

*See Appendix Z*
The following zones are from the Boston Redevelopment Authority:

TABLE C
Roxbury Neighborhood District
Dimensional Regulations in Economic Development Areas

<table>
<thead>
<tr>
<th></th>
<th>Dudley Square EDA</th>
<th>Greater Roxbury EDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Floor Area Ratio</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Maximum Building Height</td>
<td>55(^1)</td>
<td>65(^1)</td>
</tr>
<tr>
<td>Minimum Lot Size</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Minimum Usable Open Space</td>
<td>none</td>
<td>50</td>
</tr>
<tr>
<td>(Square Feet per Dwelling Unit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Lot Width</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Minimum Lot Frontage</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Minimum Front Yard(^3)</td>
<td>none(^2)</td>
<td>none(^2)</td>
</tr>
<tr>
<td>Minimum Side Yard</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Minimum Rear Yard</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

*See Appendix Z
The following zones are from the Boston Redevelopment Authority:

### TABLE H

**Roxbury Neighborhood District**

**Off-Street Parking Requirements**

<table>
<thead>
<tr>
<th>General Uses</th>
<th>Spaces Per 1,000 Square Feet of Gross Floor Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day Care Center</td>
<td>0.7</td>
</tr>
<tr>
<td>Other Community Uses</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Educational Uses</strong></td>
<td></td>
</tr>
<tr>
<td>Elementary School</td>
<td>0.7</td>
</tr>
<tr>
<td>Junior High School (through 10th Grade)</td>
<td>0.7</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>0.7</td>
</tr>
<tr>
<td>Other Educational Uses</td>
<td>1.0</td>
</tr>
<tr>
<td>Health Care Uses</td>
<td>1.0</td>
</tr>
</tbody>
</table>

*See Appendix Z*
Architect: Steven Ehrlich  
Location: Culver City, CA  
Completion year: 1995  
Building Area: 9,000 sq. feet  
Inhabitants: 100 children

- Located across from Sony Picture Studios  
- Features a diversity of spaces incorporating stimulating tactile surfaces and textures, recycled materials and spatial qualities

"The undulating roof embraces the children beneath as if to cradle them in mothers arms."
PLAN:

- Circulation spine runs length of building
- Spine separates serving areas and classrooms
- The rear becomes more porous towards the back of the building
- Classrooms open seamlessly into the enclosed playard

SITE:

- Colored steel gates set in the stucco wall present a welcoming face to the street while discreetly providing security
- Wall perimeters site
- Two means of entry onto site
- Parking on site
SONY PICTURES ENTERTAINMENT CHILD CARE

PROPERTIES:

- Streetside facade has a private, almost windowless masonry facade, Garden facade is open
- The entrance facade is a weave of a variety of colorful clay structural bricks
- Weave pattern expressed in both the exterior and interior of entrance wall
- 10 feet ceiling heights
- Designed to be responsive to environmental issues
- Openness of plan is perpendicular to prevailing winds
- Cooled by cross ventilation 95% of the time
- Space between the convex walls and waving roof forms constantly changes

A PUZZLE PIECE EPIDEMIC
Properties Continued

- Rainbow-hued steel support columns and brightly colored glass express that this is a place to learn and have fun.

- Ehrlich underscores the metamorphosing geometric character of the space decoratively: a long colonnade of pipe columns is painted in the chromatic gradient of the rainbow.

- Colored glass windows waft over the block windows like clouds of free-form color.

- "The nursery school is simultaneously energetic and serene."
Structure

- Semi-helix curvature roof

- 25 laminated wood roof beams, 6' apart, rest on a progression of steel support columns

- Since the tallest columns at the front of the building are opposite the shortest in the rear, and vice versa, progressions of oppositely angled roof beams converge at the center of the structure
SONY PICTURES ENTERTAINMENT CHILD CARE

PRECEDENT INFLUENCE:

- Approximate scale
- Enclosed site still feels open
- Different facades for different usage
- Create a playful, imaginative space
- Use structure as decorative mechanism
- Symbolic architecture

A PUZZLE PIECE EPIDEMIC
KNOWLTON HALL

*Architect:* Mack Scogin and Merrill Elam
*Location:* Columbus, Ohio
*Completion Year:* 2004
*Site:* 1.91 acres
*Building Area:* 175,386 sq. feet
*Inhabitants:* 982 People
ASPIRATIONS:

- “Make a building that brings an encyclopedic approach to space, spatial relationship, light, materials, and means, and methods of construction”

- Make a structure that aspires to:
  - Privilege the individual in the collective;
  - Balance the collective effort and individual effort;
  - Sponsor freedom of exposure and freedom to absorption;
  - Make a condition that allows individuals to find their own place and path
  - Address the relationship between the pedagogy and the physicality
  - Create a nonhierarchical spatial condition that promotes connectivity among departments, individuals, spaces, and ideas;
  - Use the dynamics of the sight and context to merge the architecture program and the public realm
  - Make a place of possibility that is open ended - a provocation rather than an answer

Ultimately design a building that encourages speculation and discovery on the part of the students within the program and promotes community among the three disciples and user body at large
CONCEPTS:

-Drew lines recording the studied influences on the site

-Lines started regulating the building

-All lines came from existing conditions on site, no arbitrary conditions added

DESIGN DEVELOPMENT:

-Introduces a perimeter skylight

-Irregularity of mullions forces the eye through the pane of glazing instead of stopping at the mullion pattern

-This also prohibits the inhabitants from feeling of containment or kept out

-Economy of construction necessitated a limited palette of standardized systems of building materials and techniques
SCHEME C (MODIFIED BOX):

- Noticed interesting condition: the actual shape of the site

- "We were confident that this very simple site perimeter extrusion would result in something unexpected."

- Lines act as modular for the project-make you step away from regular grids of the campus

- Grid would be wrong approach because site has existing organizing systems: roads & paths

- Generating lines have a systematic quality within the building wanted multiple systems-the generating lines, inclined planes, the skins

- Use dynamics of context and the constraints of the problem to create many different spaces

- The extruded site form becomes the wall. The cuts and the recessed surfaces resist the extrusion and the wall
INCLINED PLANE SYSTEM:

-Negotiating issues of accessibility, sponsoring community, affording visual connectivity, resisting the big building problem of the disjuncture of program elements, challenging the mechanical mindlessness of the elevator; mediating the thickness of the plan and making public and dancelike the negotiation of the buildings vertical aspect.

Statistics:
- 1,2804’ linear feet
- 8,712 square feet
- 8’0” and 16’0” wide
- 1’0” thick
- vertical rise: 60’0”

-The inclined plane is a linear tentacle rising and flowing, joining solids and voids, people, program, and projects - a mixing apparatus
**SITE:**

- Located at a large intersection across from a large stadium and business school complex
- Site acts as a gateway to campus; front door to the campus
- Pedestrian Traffic is generated by the Millikan walk that connects the site to cafes and bookstores to the south
- Dynamic circulation of cars and people coming to and from campus each day
- Studied: (For example)
  - What does the circulation do?
  - How many people?
  - How many cars?
  - What is the sun's orientation?
- Studies influenced relationship between the edges of adjacent buildings and the actual and perceived site

---

A PUZZLE PIECE EPIDEMIC
KOWLTON HALL

SITE CONTINUED:

- To increase the power of the landscape, they reconfigured the street, introducing a median and making landforms out of the strips left between building, street, and median

- Landforms transform intersection

- Placed a bosque of trees to the east

- Contain space and resonate between the action of the street, sidewalks, and building

- Tree trunks, light poles, and building columns form a composite landscape of vertical elements though which entry sequences into the building are formed
KNOWLTON HALL

SECTIONS:

- As one travels up through building, one encounters numerous ways to get back outside, culminating in the roof garden.

- Cuts in the building are crucial to experience.

- They take that extruded shape and effectively turn it into different buildings.

- Moved the auditorium from the west end, by entrance, to the west end.

- Draw people through the building.

- Engage people in the experience of section.
MATERIALS:

- Columns, floors, and inclined planes: post tensioned, cast in place concrete
- Load-bearing walls: cast in place concrete
- Non load bearing walls: steel stud framing
- Windows: aluminum glazing system on structural steel frames
- Enclosure: white marble panels in rain screen shingle system
**PRECEDENT INFLUENCE:**

- City Context
- School District
- Corner site
- Use site context as inspiration
- Draw lines from existing context as a start
- Bring site into building through sections
ARCHITECT: Aldo Van Eyck
LOCATION: Amsterdam, Netherlands
COMPLETION YEAR: 1961

AMSTERDAM ORPHANAGE
**SITE:**

- North Side (street side) is primarily closed
- Building opens toward the public road
- Administration wing reaches out toward the street and hooks the public realm
- The hook defines a front court that reaches into the building
- Court is considered part of the public realm
- The building invites children into the court from the surrounding
- At the same time, it creates an enclosure
AMSTERDAM ORPHANAGE

PROGRAM ORGANIZATION:

-One side of the court opens to the reception area with adjacent offices for the director and the staff

-Two internal streets branch off diagonally

-The streets pass by internal and external patio spaces

-Form gives shape to function, but does not determine it
AMSTERDAM ORPHANAGE

**STRUCTURAL GRID:**

- Regular repeating geometrical order
- Contemporary version of *classical orders*
- Domes form a grid that extends across the building that is felt from every point

**STRUCTURE:**

- "Architraves" rest on columns and are crowned with domes.
- The architraves are concrete beams that are lightened by a horizontal slot in the middle of each beam
- The columns are made of concrete cylinders
- The walls are red paving bricks

*Architraves
Red Paving Brick Walls*
DOMES:

- 328 Domes

- Repetition of domes makes the exterior of the building look dynamic

- Inside the domes create a continual changing spatial rhythm

The interior of the domes unit the spaces while articulating the diverse spaces

"Our house must be a friendly house in every respect, both inside and outside. It must be a home, home for children who for a shorter or longer time—for years, maybe—will not be living with their parents, who will miss their home. It’s up to us to try to make up for that deficiency. On approaching our house, the child must enter it gladly; its outward appearance should ooze friendliness, beckoning the child, at it were, to enter."

~ Also Van Eyck
AMSTERDAM ORPHANAGE

COLLECTIVE SPACE:

- Circle symbolizes celebration of collection
- These are spaces for children to be together
- Makes spaces for children to do be individual and be collective
- Internal streets are also used as community space outside the housing areas
PRECEDE NT INFLUENCE:

- Corner site
- Individual and Collective Space
- Interior/ Outdoor Spaces
- Street Protection
- Inviting entrance
- Create a repetitive structure with dynamic facade
- Using structure to define space
- Natural lighting
An autistic center will be like no other child care center. Although it will have some of the same programmatic features, the building will be unique to the autistic children and their therapies. In order to design a successful autistic center, the focus must be on the children and what can better their abilities in learning and every-day life. By focusing on the needs of autistic children, one will design buildings based on the daily routines of the children. The program is clearly based on the diagnosis and treatment of the child, but what happens daily, in what order does each child attend each treatment department, and which treatment should be near each other. Discussing these essentials concerns derives that the building must be designed to enhance the child's ability to understand the building and better yet encourage their focus and learning. The main objective of the building will be to better their learning environment and better their ability to perform to normality.

In order to design these spaces, environments are a big factor and need to be specific to autistic teaching and treatment styles. Multi-sensory and interactive architecture will highly help because of the autistic children’s learning techniques. Movement and touch sensitive architectural elements can now be a teaching and focusing device for the children and faculty. A wall is not just a wall anymore, it is now a color that identify the child’s location in the building, it is a texture that associates with a activity the child is about to perform, and it is a device that will help focus the child before he gets ready to learn. This is where materials play a big role in the designing of the building. Materials can be associated with wings and as well as can be used as therapy on the way to the wings. For example, MEDIATE is a hexagonal space that has many interactive elements like floors that react to footsteps and walls that react to pressure and emit vibration. These elements are used to encourage children to have fun and play with other children. Due to the fact, that some autistic children can be socially deprived, increasing the child’s interaction with other children and people is very important. Conceptual themes of the individual vs. the collective from Aldo Van Eyck’s Amsterdam Orphanage are integral in designing for both topics. Since the average autistic child prefers to be alone over with a group, a place for both individuality and yet a place where they know they can go to be with other children must be apparent throughout the building.
In order to reach these goals, a couple of concerns need to be taken into consideration. First, the environment needs to have a sense of control. The outside environment is very complex and therefore the autistic children will have difficulty understanding why things happen and why they should do certain things. By setting clear interactive settings, the children generally get a feeling of control over the area. When this is achieved, the child generally feels more comfortable and animated by the environment. Also, an autistic child is assumed to have less repetitive behavior when this is achieved. Repetitive actions and attitudes generally isolates the child from their environment and furthermore their world and should try to be maintained. Second, each child’s autism is different and unique to them so in order for these design elements to work, they have to be adaptable to each child.

Although this is generally a place for autistic children, parents and families will be coming here to learn how to interact and help their child succeed. Therefore the family members need to feel comfortable and be encouraged as well. Environmental Psychology will play a major role in designing spaces that encourage people. These spaces must be cheerful and encourage people to learn and invest their time. The treatment of an autistic child requires a lot of time from their daily schedule and the building must be aesthetically pleasing and enjoyable so that people want to be there.
CONCEPT

Hug (n.): *To embrace or hold closely*

A hug is the common symbol of affection. The hug is a physical way to express that fondness of another being and is a natural way to say welcome into a new atmosphere. Autistic children and their families need to understand that this program is designed in their best interest and welcomes them into the new community. A hug is the best way to signify this.

The concept of crisscrossing arms starts to create natural boundaries that keep the children enclosed and safe. The arms of the hug also allow for a continuous street front although it is not directly parallel with the street.

"*A hug is a handshake from the heart.*"
~Author Unknown

"*Hugs are the universal medicine.*"
~Author Unknown
The orientation of the building places the entrance at the corner of Columbus Avenue and Cabot Street. Due to the fact that Columbus Avenue is a four lane highly trafficked street, the main entrance could not be directly on that street. Therefore people would have to enter from the Cabot Street side. I wanted people to have the feeling that they were in the main street, but have a safer entrance. Also, the opposing Ruggles Street brings people from the train station to my site.
By using the hug as a concept, I create a street facade, that relates to the Boston Police building, with the two crossing arms without keeping one arm parallel to the street.

Program Key
- Reception
- Evaluation
- Treatment
- Classrooms
- Staff

Office/Evaluation Wing Detail
Classroom Wing Detail
First Floor Plan

A PUZZLE PIECE EPIDEMIC
Section C-C cuts through the classrooms as well as the area designated for the teachers. In this section teacher offices are held on both the first and second floor, on the third floor is the patio that is connected to the teachers lounge. The curtain wall accentuates the placement and importance of the ramp. This also allows for more light to enter into interior windows.

Diagram showing program stacking
Section D-D cuts through the main circulation of the building. This consists of the ramp, that connects the classroom wing to the rest of the building, and the staircase circulation. Each form of circulation has a landing and a void to create two story spaces and get more light into the building. The void spaces are accentuated by glass roofs to help light enter into the lobby.

Diagram showing circulation with landing
ENCLOSURE

With the busy context of the Roxbury Site enclosure was a very important quality to obtain. The arms of the hug were utilized as natural barriers and therefore created a safe place for the children to play in.

OUTDOOR PLAY SPACE

Safety was a major concern of the design in the Roxbury location. By raising the play space up one level, the children are elevated from the street level and are naturally safer without using utility fences. This also allows for the ability to have covered parking.

A PUZZLE PIECE EPIDEMIC
TEACHER VS STUDENT
With the busy context of the Roxbury Site enclosure was a very important quality to obtain. The arms of the hug were utilized as natural barriers and therefore created a safe place for the children to play in.

CIRCULATION
Circulation occurs where the two arms meet and twist. The large amount of circulation is used as Physical Therapy for the autistic children.
The structure is based on a 24’ by 15’ grid system.

Where the right wing of the classroom radiates out is the same grid but rotated 15 degrees.
The ramp system is the main element of the design. Using walking as an added physical therapy the ramp will always be acting as a therapy element. This element is crucial for helping the children focus before participating in an activity.
Characteristics of Therapeutic Educational Settings: (pg. 56, Gutstein)

1. The primary objective is to teach independent thinking skills
   a. Objectives target competence in normal systems
   b. Objectives target independent thinking and problem solving
2. Appropriate modifications are made in the physical environment
   a. Unnecessary noise is reduced
   b. Information is simplified through visual presentation
   c. Boundaries are clearly demarcated
   d. All tasks provide clear visual integration of instructions with materials
3. Useful communication systems are developed for students and teacher
   a. The format facilitates the understanding of directions and instructions
   b. New information is presented in one-to-one instruction
   c. Joint attentional demands are removed during instruction
   d. Methods are developed to facilitate communication about understanding and confusion
4. Modifications are created to increase independent functioning
   a. Reliance on verbal prompts is eliminated
   b. Students are provided methods for determining where they should be and what they should be doing without adult cues
   c. Predictable daily ritual is balanced with graduated variation
   d. Regularly increased independence is expected from each student
5. Negative behavior is analyzed prior to intervention to determine its source
   a. Negative behavior is assumed to be due to confusion or skill deficit
   b. Perceptual, cognitive, communication or social causes of negative behavior are determined through functional analysis
   c. Physical structure and teaching objectives are modified to reduce negative behavior
**APPENDIX P**

*Essential Elements of a Therapeutic Classroom: (pg. 57, Gutstein)*

1. **Specific physical areas are created that have clear visual boundaries**
   a. A single functional system is created within the boundaries of each area—for example, the independent work, getting help, play, computer, transition and group areas.

2. **Tasks have clear, visually presented sequential components**
   a. When possible, tasks are staged in the same left-to-right visual manner and sequenced so that the student plans, sets up, works, finishes and puts materials away.

3. **Routine and flexibility are taught and incorporated into plans**
   a. Variations in tasks are taught systematically within the essential tasks “system” so that the child does not become overwhelmed. Tasks are carefully ported into new settings while maintaining the essential elements of the work setting.

4. **Tasks are organized around their goal state**
   a. Clear visual information is presented so that the meaning of being finished is clear to the child before the task is begun.

5. **Materials are structured and modified to help the child independently understand the task**
   a. The relationship of task elements to each other and the end point is clear.

6. **Transitions join tasks together in a natural way**
   a. Specific transitional elements link tasks together into multi-task systems. Before the child begins with what’s now, what’s next and how to get there, have been visually presented and understood.

7. **Communication is used to foster independence, not reliance on an adult interpreter**
   a. Systems are designed so that communication takes place as much as possible, without adult presence and dependence.

8. **Specific work systems are set up**
   a. Communication materials, physical space and common goals are linked together into a single entity.

9. **Teachers view themselves as facilitators and engineers not managers**
Characteristics of Ineffective Settings: (pg. 58, Gutstein)

1. Passive compliance is more important than competence
   a. Objectives are about complying, sitting quietly, following instructions
   b. There is not enough emphasis on independent functioning, checking your own schedule, staring and completing your own tasks

2. Limited modification of the physical environment
   a. The room is over-stimulating
   b. Worksheets are very noisy
   c. Boundary areas are not clearly marked
   d. Materials are not integrated and user friendly with visual communication
   e. Students cannot independently determine where they should be

3. Over-reliance on verbal communication
   a. Instruction and directions are presented orally
   b. Information is presented through class lecture or group discussion
   c. Students are expected to engage in joint attention, instruction during task work
   d. It is expected that students will verbally communicate their misunderstanding

4. Modifications increase dependent functioning
   a. Students receive frequent verbal prompts
   b. Student is not expected to start and finish task independently
   c. Students must wait for adults to tell them where to go and what to do
   d. Objectives are considered met even though adult prompting is required
   e. Rigid routines are developed with no attempt to teach adaptation to change
   f. Lack of routine leaves the student confused and dependent

5. Negative behaviors reacted to immediately with consequences
   a. Students receive consequences before behavior is analyzed and it is determined if the cause is confusion, over-stimulation, miscommunication distraction compulsion, need for closure or manipulation.
The following codes are from the International Building codes 2006:

303.1 Assembly group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption; or awaiting transportation.

Assembly occupancies shall include the following:

A-3: Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A including, but not limited to:

- Community halls
- Indoor swimming pool
- Libraries

305.1 Educational Group E. Educational Group E occupancy includes among others, the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through 12th grade.

305.2 Day care. The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than five children older than 2 ½ years of age, shall be classified as a Group E occupancy.
The following codes are from the International Building codes 2006:

308.1 Institutional Group I. Institutional Group I occupancy includes, among others, the use of a building or structure, or a portion thereof, in which people are cared for or live in a supervised environment, having physical limitations because of health or age are harbored for medical treatment or other care or treatment, or in which people are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. Institutional occupancies shall be classified as Group I-1, I-2, I-3, or I-4.

308.5 Group I-4. day care facilities. This group shall include building and structures occupied by persons of any age who receive custodial care for less than 24 hours by individuals other than parents or guardians, relatives of blood, marriage or adoption and in a place other than the home of the person cared for.

308.5.2 Child care facility. A facility that provides supervision and personal care on less than a 24-hour basis for more than five children 2 ½ years of age or less shall be classified as Group I-4.
The following codes are from the International Building codes 2006:

504.1 General. The height permitted by table 503 shall be increased in accordance with this section:

<table>
<thead>
<tr>
<th>Occupancy</th>
<th>Height Limitation (feet)</th>
<th>Building Area (stories)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-3</td>
<td>UL</td>
<td>UL</td>
</tr>
<tr>
<td>E</td>
<td>UL</td>
<td>UL</td>
</tr>
<tr>
<td>I-4</td>
<td>UL</td>
<td>UL</td>
</tr>
</tbody>
</table>

508.3.3.4 Separation. Individual occupancies shall be separated from adjacent occupancies in accordance with table 508.3.3

Table 508.3.3 Required Separation of Occupancies. No separation requirement between Occupancy A, E and I
507.6 Group A-3 buildings. The area of a one-story, Group A-3 building used as a place of religious worship, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor swimming pool or tennis court of Type II construction shall not be limited when all of the following criteria are met:

1. The building shall not have a stage other than a platform.
2. The building shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. The building shall be surrounded and adjoined by public ways or yards not less than 60 feet in width.

507.9 Group E buildings. The area of a one story Group E building of Type II, IIIA, or IV construction shall not be limited when the following criteria are met:

1. Each classroom shall not have less than two means of egress, with one of the means of egress being a direct exit to the outside of the building complying with Section 1018.
2. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. The building is surrounded and adjoined by public ways or yards not less than 60 feet in width.
The following codes are from the International Building codes 2006:

Table 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS

<table>
<thead>
<tr>
<th>Building Element</th>
<th>Type I-(A) (hours)</th>
<th>Type II-(A) (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural frame</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Bearing walls:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Interior</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Nonbearing walls</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Floor construction</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Including supporting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beams and joists</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roof construction</td>
<td>1.5</td>
<td>1</td>
</tr>
<tr>
<td>Including supporting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beams and joists</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The following codes are from the International Building codes 2006:

**TABLE 1004.1.1**
**MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Allowance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessory storage areas, mechanical equipment room</td>
<td>300 gross</td>
</tr>
<tr>
<td>Assembly without fixed seats</td>
<td></td>
</tr>
<tr>
<td>Concentrated (chairs only-not fixed)</td>
<td>7 net</td>
</tr>
<tr>
<td>Standing Space</td>
<td>5 net</td>
</tr>
<tr>
<td>Unconcentrated (tables and chairs)</td>
<td>15 net</td>
</tr>
<tr>
<td>Day care</td>
<td>35 net</td>
</tr>
<tr>
<td>Educational</td>
<td></td>
</tr>
<tr>
<td>Classroom area</td>
<td>20 net</td>
</tr>
<tr>
<td>Shops and other vocational areas</td>
<td>50 net</td>
</tr>
<tr>
<td>Institutional areas</td>
<td></td>
</tr>
<tr>
<td>Inpatient treatment areas</td>
<td>240 gross</td>
</tr>
<tr>
<td>Outpatient areas</td>
<td>100 gross</td>
</tr>
<tr>
<td>Sleeping areas</td>
<td>120 gross</td>
</tr>
<tr>
<td>Kitchens</td>
<td>200 gross</td>
</tr>
<tr>
<td>Library</td>
<td></td>
</tr>
<tr>
<td>Reading rooms</td>
<td>50 net</td>
</tr>
<tr>
<td>Stack area</td>
<td>100 gross</td>
</tr>
<tr>
<td>Swimming Pools</td>
<td>50 net</td>
</tr>
</tbody>
</table>
The following codes are from the International Building codes 2006:

1016.1 Travel distance limitations. Exits shall be located on each story such that the maximum length of the exit access travel, measured from the most remote point within a story to the entrance to an exit along the natural and unobstructed path of egress travel, shall not exceed the distances given in table 1016.1.

**TABLE 1016.1**
**EXIT ACCESS TRAVEL DISTANCE**

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>WITHOUT SPRINKLER SYSTEM (feet)</th>
<th>WITH SPRINKLER SYSTEM (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, E</td>
<td>200</td>
<td>250</td>
</tr>
<tr>
<td>I-4</td>
<td>150</td>
<td>200</td>
</tr>
</tbody>
</table>

Where the path of exit access includes unenclosed stairways or ramps within the exit access or includes unenclosed exit ramps or stairways as permitted in Section 1020.1, the distance of travel on such means of egress components shall also be included in the travel distance measurement. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of stairway.
The following zones are from the Boston Redevelopment Authority:

SECTION 50-1. Statement of Purpose, Goals, and Objectives. The purpose of this Article is to establish the zoning regulations for the comprehensive plan for the Roxbury Neighborhood District as required by the provisions of the Roxbury Interim Planning Overlay District, Article 27E of this Code. The goals and objectives of this Article and the Roxbury Neighborhood Plan are to provide for affordable and market rate housing for individuals and families; to promote and expand neighborhood educational and cultural facilities; to promote the viable neighborhood economy and provide for new economies and expansion of job opportunities; to preserve, enhance, and create open space; to protect the environment and improve the quality of life; to promote the most desirable use of land; and to promote the public safety, health, and welfare of the people of Roxbury.

SECTION 50-7. Establishment of Economic Development Areas. This Section establishes two economic development areas ("EDAs") within Roxbury: the Greater Roxbury EDA and the Dudley Square EDA. These EDAs are established to encourage economic growth and commercial activity in a manner which is sensitive to the needs and interests of the community and to provide for economic development that is of a quality and scale appropriate to the surrounding neighborhood. They are established to encourage the diversification and expansion of Boston's and Roxbury's economy, the creation and retention of job opportunities, and the provision of additional economic benefits to the Roxbury Neighborhood District. The EDAs are designated "EDA" on the maps establishing the Roxbury Neighborhood District.

SECTION 50-8. Greater Roxbury EDA. A focal point for economic development activity is the Greater Roxbury Economic Development Area ("EDA"), an area which has historically been referred to as the Southwest Corridor. This area has been the location of major development and economic activity in the past. Because of the central nature of the location and access to public transportation and major arteries, the Greater Roxbury EDA should be a location for major economic growth in the future. The Greater Roxbury EDA provides opportunities for significant economic development projects on publicly owned land which links Roxbury to the downtown.
The following zones are from the Boston Redevelopment Authority:

SECTION 50-10. Use Regulations Applicable in EDAs. Within the Greater Roxbury EDA and the Dudley Square EDA of the Roxbury Neighborhood District, the uses identified in Table A of this Article and described in greater detail in Article 2A are allowed, conditional, or forbidden as set forth in said Table A. No land or Structure in said subdistricts shall be erected, used, or arranged or designed to be used, in whole or in part, unless, for the proposed location of such use, the use is identified as "A" (allowed), or subject to the provisions of Article 6, such use is identified as "C" (conditional). Any use identified as "F" (forbidden) in Table A for the proposed location of such use is forbidden in such location. Any use not included in Table A is forbidden in the EDAs.

SECTION 50-11. Dimensional Regulations Applicable in EDAs. Within the Greater Roxbury EDA, the maximum allowed Building Height is sixty-five (65) feet and the maximum allowed Floor Area Ratio is two (2). Within the Dudley Square EDA, the maximum allowed Building Height is fifty-five (55) feet and the maximum allowed Floor Area Ratio is two (2). The minimum allowed Lot Size, Lot Width, Lot Frontage, Front Yard, Side Yard, Rear Yard, and Usable Open Space are set forth in Table C of this Article.

SECTION 50-12. Establishment of Area Within Which Planned Development Areas May be Permitted. Within the Greater Roxbury EDA and the Dudley Square EDA, Planned Development Areas ("PDAs"), may be permitted on the following parcels:

Parcels Upon Which PDA Development May Be Permitted

- Location Parcel
- Northeastern Garage
- Ruggles Center
- Parcel 22
- Greater Roxbury EDA Douglass Plaza
- School Athletic Track Facility
- Parcel 3
BIBLIOGRAPHY

Book Sources:

BIBLIOGRAPHY

Internet Sources: