Inner City Junction: Public High School as a Multifaceted/Flex Structure

Daniel Chang

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INNER CITY JUNCTION
public high school as a multifaceted/flex structure

primary advisor . susanne cowan
secondary advisor . brett snyder
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Education in the United States has become a nationwide problem. Statistics on the 2009 PISA report shows that out of 34 OECD countries, the US ranks 14th in reading skills, 17th in science and 25th in mathematics. As one of the most industrialized and wealthiest nations in the world, how is it that the United States falls significantly behind other nations in terms of education?

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1 PISA (Programme for International Studies) is a 3 year survey of knowledge on 15-year olds in industrialized countries in the format of a two hour test. The program works with the OECD (Organization for Economic Co-operation and Development) to draw educational comparisons between countries.
2009 PISA COUNTRY RANKING BASED OFF READING, MATH AND SCIENCE AVERAGE

USA RANK: 28

WHAT DOES THIS MEAN FOR OUR FUTURE?

USA TOTAL AVERAGE SCORE: 496

ALL COUNTRIES TOTAL AVERAGE SCORE: 497

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2 In the study, China is represented by three cities, Shanghai, Hong Kong and Macau
1.1 | CRISIS?

The Suburban/Urban Performance Gap

<table>
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<th>SUBURBAN DISTRICTS</th>
<th>PCT. PT. GAP BETWEEN RATES</th>
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Source: Editorial Projects in Education Research Center, "Cities in Crisis 2009: Closing the Graduation Gap"
If we hope to attain a 90% high school graduation rate by 2020, our urban public school systems must close the achievement gap that exists.³

In America’s cities, the public education system graduates only slightly more than half of their student body. These urban public school systems suffer from the bottom up, where students are going into high school at a significantly lower level of education.

What accounts for our ranking is due in large part to our public school education system, in which 90% of students are enrolled in. Looking at our public school system, it is clear that a division exists among the suburban and urban districts, where the average graduation rate difference is 18%.

Conditions at some schools are so poor that 60% or less of the senior class remains from freshman year. Half of the student drop out population comes from schools termed ‘dropout factories’, primarily located in urban environments where poverty is high and the majority student body is of a minority population.⁴ There are 1,700 ‘Dropout Factories’, making up 12% of the total public school system in the United States.⁵

If we hope to attain a 90% high school graduation rate by 2020, our urban public school systems must close the achievement gap that exists.⁶

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³ This mark was set by the United Way of Anchorage (UWA) in collaboration with the United Way. The class of 2020 is currently in 4th grade.
⁴ The term ‘Drop Out Factory’ was created by Robert Balfanz, a Josh Hopkins University research scientist for the Center for Social Organization of Schools.
⁶ This mark was set by the United Way of Anchorage (UWA) in collaboration with the United Way. The class of 2020 is currently in 4th grade.
In our American cities, the public education system graduates only slightly more than half of their student body. The effects of poor education on the surrounding community and neighborhoods are significant, particularly in the post-industrial city. Due to high dropout rates and low out coming productivity, communities suffer from economic losses and instability in the form of crime and poverty. High school dropouts account for more than 61% of the prison population and are twice as likely to commit a crime and live in poverty. This inhibited growth results in lower local tax revenues that could go towards school improvements, creating a negative growth cycle that are all too common in inner cities.

“Those schools sent some very clear messages to the community. They told the children that we didn’t take education seriously. They told neighborhood residents ‘The schools don’t maintain their property. Why should you maintain yours?’….I firmly believe that a good quality education is the answer to all social ills of big cities-crime, poverty, unemployment, economic decline, and middle-class flight”

Chicago Mayor Richard Daley on public schools

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7 Data taken from 90by2020.org

By understanding these factors and implications of the urban public educational institution, does architecture have a role in reversing the public education crisis? Can school design foster educational techniques that counteract learning deficiencies? Looking at the negative symbiotic relationship between the post-industrial inner city school and its surrounding community, can the design of a school reverse the cycle towards a more positive relationship?
1.3 | TYPICAL PUBLIC SCHOOL MODEL

Public schools operate in a seven hour time frame typically between 8-3. Within this time frame, programmatic usage of the building is broken up into individual rooms and spaces for a specified purpose, such as classrooms for learning, cafeteria for eating, gymnasium for sports and an auditorium for gathering/shows. Support programs such as a library, computer lab, art studios and music rooms may also exist for student use depending on the quality of the public school. The design and layout of these program elements are often restricted for student and teacher use only. With the exception of athletics, the building is rarely used by the public outside of its scheduled time period.
In terms of the building itself, the average public school structure is 52 years old, where an estimated 25,000 schools need a major repair or outright replacement, more than 25% of the total public school system. The layout of the classrooms is often in a cell structure where the teacher instructs in the front and the students sit and listen in rows. Flexibility of program within the spaces of the school is limited with the exception of large open spaces of the auditorium and gymnasium. In terms of the building's spatial qualities, some urban schools suffer from overcrowding/crowded classrooms whereas others struggle to maintain student enrollment resulting in underutilized space. Due to their age, these outdated structures require constant maintenance and often cannot support the basic infrastructure of 21st century technology (nearly half of all schools in the U.S. lack the basic electrical wiring to support computer and communication technology).\(^9\) These fundamental problems within the building structure can ultimately inhibit a student’s educational experience.

\(^9\) OWP/P Architects, VS Furniture, and Bruce Mau Design. pp 5-6.
Within its surrounding context, the existing public school model often acts as a separate and autonomous unit. The program within school buildings are diverse but are too private in their design and layout to be of beneficial use to an outside user group due to safety concerns. Can this model be rethought to allow for more community integration? Can a school become a multifaceted junction in which education takes place through local or outside community factions?
CAN THESE TYPICAL SCHOOL PROGRAMS BE SHARED?
Schools and communities are often understood as entities that work synergistically in social and economic traditions. This synergy can be manifested into an architectural framework that promotes a positive learning experience through educational intimacy and programmatic flexibility. This notion of flexibility can transcribe into our 21st century education, where the ‘digital age’ allows for learning to become more fluid and versatile than ever before. Schools are judged not by their aesthetics, form or design but by their student academic performance. Ultimately, architecture alone cannot improve academic performance, but it can stimulate a sense of student comfort, which is a vital principle for successful learning. Through this malleable space and education, a school can transform into a multifaceted communal center, engaging multiple user groups and becoming a symbolic neighborhood anchor.
The idea of an integrated school that serves a communal function an effort to revitalize the neighborhood is not a new concept. A comprehensive structure can arise from community programs and partnerships that locate themselves within a school site. Through this community junction, many economic, social, educational and physical needs are addressed that have the potential to support and revitalize a broken community. The relationship between the public educational facility and the surrounding neighborhood is a complex relationship that offers new urban design opportunities. This is echoed by Anthony Vidler, Dean of the Irwin S. Chanin School of Architecture at The Cooper Union, where he states...

“Architecture is not simply concerned with the technical details of planning and construction but, most important, with the relations between the envisioned curriculum and the space in which it is put into practice. The architect plays a crucial role in the consideration of the complex relations between a large institution and its neighborhood, of the careful responses in scale and spatial layout to the needs of teachers and children, of the very materials out of which a good learning environment is built...the architect can serve as a catalyst and collaborator, conscience and coordinator.”

Expanding beyond the program of the classroom, the entire school itself offers programmatic versatility that can benefit multiple user groups outside of students. Programs offered in a school typology are generally reflected in larger institutions specializing in that particular program used by the general public. For example, the program of library is found in the typical school, but is also understood as its own separate community building. Can the consolidation of these programs bring a more efficiently run community?

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This idea of the versatile school has been rooted in the early colonial schoolhouse of the 1800s. Throughout this period, the idea of schooling was confined to the bible and apprenticeship towards the family trade/craft in a home school or one-room country schoolhouse format. The small village typology was dominant in early America, consisting of small clusters of homes and public structures (meeting hall, school, church) around a public meeting square. Within the one-room schoolhouse, children of all ages attended classes where the size was dependent on the village population. In terms of the schoolhouse and its relationship to the community, it often acted as the main social center that housed events such as public gatherings such as town meetings, voting, celebrations and festivals.\footnote{Walden, Rotraut. Schools for the Future: Design Proposals from Architectural Psychology. Cambridge, MA: Hogrefe, 2009. Print. p21.}
The idea is has also been extended into the early 1900s, particularly in Chicago, where architect Dwight H. Perkins believed that the urban public school should act as a community center that extends its usage beyond the final class time period. Thus, the location and design of programmatic elements such as the gymnasium and auditorium were of special interest to Perkins. During his tenure as the architect of the Chicago Board of Education from 1905 to 1910, Perkins is credited with 40 new schools and additions. Unfortunately, the idea of a community based school was never truly manifested within the city.\(^\text{12}\)

Within this same time period, the idea of the neighborhood unit by Clarence Perry was influencing town and city planning. Among one of his principles was the central location of neighborhood institutions such as schools, church and community centers, located within a 5 minute walking radius. Thus, the school was seen as a central element to the community much like the one-room school house had represented.\(^\text{13}\)


neighborhood unit concept in practice
Our contemporary urban schools should take advantage of this ideal; we should no longer think about the public school as a separate, autonomous unit within the city fabric, but rather, as a structure that works to enhance, support and nurture its surroundings. Modern school design in an urban typology can reflect this fundamental idea of community integration. Through program consolidation that engages multiple users, the school starts to become more than just an educational institute, it becomes a community junction. Learning through community interaction has been studied by Roy Strickland, where the public school uses its urban surrounding as a means for education (such as trips to museums).\textsuperscript{14} Can the urban surroundings be brought into the school instead?

In an urban environment, structures lend themselves more to the sidewalk than in a suburban setting, allowing for more transparency among public and private space. Thus, it is an urban characteristic that structures engage outsider users whether intentionally or subliminally. Public schools in the urban fabric offer a type of engagement and integration that suburban schools simply cannot offer due to their different typological settings. Urban conditions offer Why not take advantage of this?

\textsuperscript{14} Strickland’s study on Patterson, NJ was based on the ‘City of Learning’ strategy for school design in which student contribution to community life is returned through community resources contributing to education. Ideas of abandoned downtown structures being re-used as a vertical-mixed use school and integration of new program with old structures were common. This collaboration between education reform and urban design generates a communal identity that has become a model for post-industrial cities. Tatom, Jacqueline, and Jennifer Stauber. Making the Metropolitan Landscape: Standing Firm on Middle Ground. New York, NY: Routledge, 2009. Print. Pp 131-150.
typical community programs networked into the multifaceted structure
In the urban city, new school development and construction is often limited due to spatial constraints. Thus, as cities grow in population, schools are forced to accommodate the growing student enrollment, often leading to overcrowding. However, in struggling public high schools, where student retention rates from freshman year into senior year is almost 50%, there remains empty and underutilized space that is either wasted or rented out to charter schools.

In terms of the large overcrowded school in the urban setting, a student can feel anonymous and disconnected from the themes of the school. Within the large and rigid school structure, social relationships are organized in hierarchical ways in which student-teacher relationships become more strained. In regards to classroom size and density, studies show that more high density rooms lead to a decrease in social interaction while increasing aggression.\(^\text{15}\)

Looking at the internal curriculum structure, what is being taught and how it’s being taught is often in a comprehensive manner (a liberal arts approach of teaching multiple subjects) reflective of the early 19th century education, where the idea of the public school catered to a diverse range of students who could take an array of courses. Many public schools use the ‘tracking system’ as a way to guide the progress and development of students, where some are promoted towards honors classes and others to basic. However, this system has often led to a divided nature, where students who are of a lower economic class are less likely to take or choose an AP course.\footnote{Lee, Valerie E., and Douglas D. Ready. Schools within Schools: Possibilities and Pitfalls of High School Reform. New York: Teachers College, 2007. Print. pp 10-11.}
Trends to alleviate overcrowding conditions and improve educational conditions have been experimented in the smaller learning community typology. Generated in the 1990s, the study towards smaller school design was intended to foster stronger social bonds between student and teacher in which the student would remain a relevant figure throughout his education. Studies show that smaller school design increase participation, academics community involvement and overall satisfaction while decreasing illicit behavior in the form of disciplinary problems, drug use and most importantly dropout rates.\textsuperscript{17}

Smaller school design as a means of stronger educational qualities is rooted in private schools and prep schools, where it enables a strong student culture and close environment with the teachers. The hallmarks of smaller school design allow for each student to be visible and allow for each teacher to be a part of a diverse educational community. These qualities are often lost in the large, comprehensive and impersonal school, yet remain the hegemonic typology of school design.\textsuperscript{18}

\textsuperscript{17} Walden, Rotraut. 31
\textsuperscript{18} Eizenberg, Koning. Architecture for Education New School Designs from the Chicago Competition. Chicago, IL: Business and Professional People for the Public Interest, 2002. Print. Book 3 Policies and Principles. The Promise and Politics of Small Schools by Susan Klonsky. Klonsky states how good architecture is not enough to make a good school, but rather how good design can foster greater student performance through a variety of factors. These include community integration, personal learning spaces and private moments, safety, simplicity, and permeable relationships with its surroundings.
Smaller learning communities not only offer more educational intimacy, but also allow for more architectural opportunities in regards to design and layout. Thus, by taking the typical high school model (1000+ students) and breaking it down into smaller and more focused subunits (300-400 students), we can potentially increase the educational qualities and intimacies associated with smaller schooling that is often overlooked in a large public school.\(^{19}\)

“I used to cut a lot, didn’t come to school sometimes or when I did come, I would just come for lunch and then leave. Nobody knew you, nobody cared, that’s just the way it was. It’s different now...you can learn more because you don’t have to cakewalk in the hallway. I think that now it is more like, not necessarily family, but it’s more like everybody knows everybody, so you know if you do something, your teacher will know, a lot of people will know what you did because you are in the subunit.”

-student attending a school undergoing small school reform\(^{20}\)


\(^{20}\) Lee, Valerie E., and Douglas D. Ready
2.3 | PROGRAMMATIC AND EDUCATIONAL FLEXIBILITY
The layout of a classroom often tells us how a curriculum is being taught, embodying a meaning dubbed as the ‘built pedagogy’. For example, desks aligned in rows communicate ideals of uniformity and discipline whereas an open room layout can convey ideas of freedom and non-conformity. As stated before, our modern classroom structure and curriculum is of the disciplinary nature, modeled after a 19th century system. As the industrial revolution emerged in the United States in the early 1800s, shifts in social and economic lifestyles manifested themselves in the form of factories and warehouses in the urban environment versus the early traditional rural and agricultural village societies. Specialty occupations stemming from divisions of labor allowed for accelerated rates of development and production. The idea of division extended beyond the workforce but to society in general, where segregation of program among different user groups was taking shape (schools catered to the young, nursing home to the elderly, hospitals to the sick, prisons to the criminals and offices/factories for the workers).

Thus began the era of the public school, created to assimilate the masses and provide an economic workforce for the industrial sector. However, social division also took form in the newly created public school system. Thus, the early public school system adopted a hierarchical structure, dividing students based on performance levels, separating those who would become successful in the industry against those who would not.

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22 This would ultimately culminate in ideas of the tracking system. Walden, Rotraut 22
Attempts have been made that question and challenge the typical layout. John Dewey promoted ideas such as multi-functional spaces and individuality that has been manifested in his Chicago Laboratory School, where the curriculum integrated ideas such as intellectual, developmental and social skills.

Throughout the post war era, the 1960s open education movement generated in the UK influenced US school designs, where the open classroom floor plan design was intended to foster more educational opportunities, freedom and self-responsibility. However, the basic form of cellular classrooms along a corridor with scattered specialty programs (library, auditorium) remains dominant in modern US society.

23 The open plans were considered a failure due to noise and visual distraction. Coupled with that was the fact that the teachers never embraced the changes regarding an open plan teaching curriculum and resorted back to their traditional means.
“Schools become steeped in history in the past in static knowledge and fail to capture the here and now.”

Dr. Cream Wright (Global Chief of Unicef for Education)²⁴

The here and now is a digital age, where information can be readily accessed in an open and fluid manner that is not confined just in a cell structure. Thus, our classrooms need to reflect this idea of fluidity through an open flexible design layout that can situate multiple teaching methodologies through the use of technology. 87% of U.S. teens aged 12-17 use the internet, where internet usage at school has grown 45% since 2000.²⁵ It can be understood that there is a digital divide between the curriculum of a high school and a typical university, where almost every student has a laptop. It would be irresponsible to continue the creation of schools under the assumption of traditional teaching materials and tactics.

This idea of flexibility can extend beyond the classroom and into other school programs such as the gymnasium and cafeteria. Do these programmatic spaces offer enough versatility to embody other types of functions?

²⁴ http://edupln.ning.com/video/has-education-changed-since
²⁵ OWP/P Architects, VS Furniture, and Bruce Mau Design. pp 220-221
“There is no better example of architecture seen as largely a question of exteriors than schools”

Herman Hertzberger

Why has the interior condition and design of the typical public school remained so stagnant? The primary concern of architects with regards to school design has historically been rooted in the design of the façade, where it has historically reflected the ideals of its time, acting as a type of sign. Throughout history, our school structure has reflected the educational philosophies and predominant lifestyles that attempt to elicit a communal belief. From its early conception, the idea of the schoolhouse was a symbol of the village community, where its simple form and construction reflected the rural countryside environment.

Externally, the early public school house structure itself held a defined architectural language that often imposed a hierarchical order and served as a symbol for progression. In the UK, the newly established London Board Schools acted as a visual metaphor towards a brighter future, referenced by Sherlock Holmes in the Case of the Stolen Naval Treaty...

“Lighthouses my boy! Beacons of the future! Capsules, with hundreds of bright little seeds in each, out of which will spring the wiser, better England of the future.”

---

Similarly, the City Beautiful Movement of the early 1900s reflected ideals of virtue and harmony in society in their robust facades, promoting greater care and health within our communal fabric. Ideals of democracy, equality, virtue and civic life have been communicated through the ordered exterior language of our school structures.28

The post-war modern movement stressed ideals of openness, hygiene and transparency, manifested through lighter construction and glass. However, despite the aesthetic change on the exterior level, the inner teachings have remained true to the traditional style of students sitting on benches looking towards the teacher in a cellular structure.29 Hertzberger further states...

“Architecture has unfailingly approached the designing of schools from a less than critical position. All the while, it seems architects meekly followed their beliefs and were mainly concerned with formal aspects of the exterior without busying themselves with the spatial opportunities that might lead to better education, and with the role they themselves might fulfill there.”30

Thus, the architecture of schools seemed to always focus on the aesthetics from the outside rather than question teaching methodologies and layouts on the inside, which could explain the reason why the curriculum has remained so stagnant.

28 Haar, Sharon 3
29 Hertzberger, Herman 13
30 Hertzberger, Herman 11
In the 1950s and 1960s, the architecture of schools, internally and externally has reflected anonymity and has taken an almost introverted approach which is reflected still in our schools. Design is sacrificed for cost and what is left are box-like masses. Thus, our current school typology reflects a rigid teaching curriculum within an expressionless exterior. Umbert Eco talks discusses how the discourse of architecture is catered towards mass appeal, where design is a culmination of acceptable ‘arguments’ predicated on established principles. The newly created form is brought to the attention of society, where it is judged and scrutinized, eliciting a certain type of consent. Has the architecture of schools lost this type of consent, where it has become neutralized to the sense of nothingness? If schools have historically embodied the ideals of its time period in an exterior facade, what is the exterior language of today’s society and culture?
multiple user groups ranging from the high school student to college students, community resident, families and elderly

public high school is understood as a symbolic community structure due to its multifaceted nature that invites public usage

the versatility and flexibility of space that can accommodate a multitude of program that caters to students and community

school program takes on the level of smaller design to promote intimacy and stronger commitment to education
The city of Newark, the largest city in New Jersey has followed the same fate of so many post-industrial cities that have experienced economic decline following WWII. The flight of middle and upper class residents and businesses coupled with the influx of African Americans from the Great Migration has significantly transformed the urban landscape from a thriving industrial identity to a city struggling for economic development. More than a quarter of the population lives in poverty, with 15% unemployed.

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32 The demographics are 52.6% African American, 26.3% white and 33.3% of Hispanic or Latino origin. http://quickfacts.census.gov/qfd/states/34/3451000.html
**1940s Newark**

- 450,000 population
- Industrial business fosters growth
- Majority of white middle class and upper class residents and businesses leave for suburbs

**Modern Newark**

- 277,000 population
- Small financial sector
- Recent developments and growth
- Influx of African American population due to Second Great Migration from the South

- Unemployment and Poverty rampant
- Newark goes into a state of decline
Newark is located on the eastern end of New Jersey, and is considered a part of the Gateway Region. Its climate is considered humid subtropical, although its location next to the ocean means slightly warmer temperatures than other cities along its latitude line.
Newark is in close proximity to New York City, Jersey City and Hoboken. Commutes between these three cities are done through the path and rail lines. The city is approximately 24 square miles.
white 26.3%
black 52.6%
hispanic 33.3%
asian <1%
TRANSPORTATION

subway

train

car

TRANSPORTATION
INDUSTRIAL LAND USE
3.1 | REVITALIZATION?

Newark has been considered an untapped resource in terms of economic growth and development. It has the second largest-sea port in the United States with regards to the value of goods shipped, the 10th busiest airport in Newark Liberty International and has two commuter train stations, a freight rail network in its industrial district and a path train station that connects to downtown Manhattan in 20 minutes. The city is also home to 6 colleges, bringing in a stable density into the downtown district. However, despite these infrastructural assets, the city has generally underperformed with regards to commercial business.

Notoriously known as a city struggling with crime and poverty, Newark has commissioned multiple revitalization initiatives to counteract this belief, such as the NJPAC, Prudential Center and an upcoming revitalization project along the riverfront. The population has actually increased for the first time in three decades in 2011, sparking hope and future growth for the city. However, many residents feel that these revitalization efforts were catering more towards future investors and less towards them. In order to give the residents a revitalization of their own, I believe that the school is the first place to start. By focusing on the improvement of educational qualities in Newark, it can help fulfill the potential that Newark has.

33 Taken from Newark’s Ground Breaking Year 2011 Magazine
36 Tuttle, Brad R., 282
'this redevelopment of the downtown district is amazing, but how are the residents benefiting from this?'
The city of Newark benefits from its strong infrastructure. Newark is within a close proximity to New York City, with cheaper rent. Thus, these are strong city aspects that Newark takes advantage of.

High School dropouts, prevalent in Newark, often lead to delinquent lifestyles. This behavior often leads to jail cells or homeless shelters. The perception of fear is often displayed through these actions in the media.

The public sees this fear and it dominates over the assets of Newark. Through this fear, the city only realizes a fraction of its untapped potential.
High school graduates often have more life opportunities away from crime. These opportunities can give rise to stronger jobs and more money. Graduates may become home owners within Newark and support families.

The public sees this the stability of Newark and can begin to invest into the city that already has strong assets. Newark can begin to fulfill its true potential.
Newark has one of the most defunct public education systems within the state and in the nation where the dropout rate is near 50%. Seven high schools rank within the bottom 10% of state wide rankings, where 20% of students pass high school examination tests. These old structures suffer from internal and external deterioration and issues ranging from student overcrowding to wasteful underutilization of space create negative learning environments. The negative impact of public schooling often leads to instability within the community in the form of crime and poverty. Data taken from the 2007 Associated Press on Dropout Factories’ show that out of the 13 dropout factories located in New Jersey, 3 of them are in Newark (Malcolm X Shabazz High, West Side High, Weequahic). 

Within Newark, this trend is compounded by the fact that only 32% of students are being raised in a two adult house-hold. Research into family structures show that students in a single parent house hold are more likely to fail school and partake in a lifestyle of violence than students in a two parent house hold. 60% of students are growing up without a father and of families living below the poverty line, 83% are comprised of single parents. Thus, the idea of the stay at home parent who looks after the kids after school is a lifestyle that most Newark students do not have. Our modern schools in cities such as Newark have an opportunity to become more than just a learning center, they can become a haven for students. 

### Average Newark Public School Structure Age: 92 Years

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<th>School Name</th>
<th>Grades</th>
<th>Building Capacity</th>
<th>2004-05 Enrollment</th>
<th>HA Size (sq ft)</th>
<th>HA Gross Sq Ft</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Arts High</td>
<td>9-12</td>
<td>817</td>
<td>285</td>
<td>1.15</td>
<td>200,000</td>
<td>1931</td>
</tr>
<tr>
<td>Banana High</td>
<td>9-12</td>
<td>1,650</td>
<td>1,316</td>
<td>5.98</td>
<td>265,650</td>
<td>1964</td>
</tr>
<tr>
<td>Central High</td>
<td>9-12</td>
<td>1,202</td>
<td>1,043</td>
<td>1.51</td>
<td>207,365</td>
<td>1911</td>
</tr>
<tr>
<td>East Side High</td>
<td>9-12</td>
<td>1,477</td>
<td>1,548</td>
<td>1.69</td>
<td>225,500</td>
<td>1912</td>
</tr>
<tr>
<td>Malcolm X Shabazz High</td>
<td>9-12</td>
<td>1,423</td>
<td>1,411</td>
<td>4.36</td>
<td>329,650</td>
<td>1914</td>
</tr>
<tr>
<td>Academy of Vocational Careers</td>
<td>9-12</td>
<td>357</td>
<td>211</td>
<td>2.80</td>
<td>115,465</td>
<td>1985</td>
</tr>
<tr>
<td>Renaissance Academy (at Various Locations)</td>
<td>6-12</td>
<td>451</td>
<td>451</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science High (LEASED)</td>
<td>9-12</td>
<td>446</td>
<td>229</td>
<td>60,000</td>
<td></td>
<td>1910</td>
</tr>
<tr>
<td>Technology High</td>
<td>9-12</td>
<td>715</td>
<td>281</td>
<td>2.50</td>
<td>143,620</td>
<td>1920</td>
</tr>
<tr>
<td>University High</td>
<td>7-12</td>
<td>364</td>
<td>256</td>
<td>3.00</td>
<td>140,015</td>
<td>1957</td>
</tr>
<tr>
<td>Weequahic High</td>
<td>9-12</td>
<td>768</td>
<td>1,045</td>
<td>2.00</td>
<td>186,125</td>
<td>1933</td>
</tr>
<tr>
<td>Weequahic Vocational</td>
<td>9-12</td>
<td>625</td>
<td>53</td>
<td>4.26</td>
<td>157,300</td>
<td>1957</td>
</tr>
<tr>
<td>West Side High</td>
<td>9-12</td>
<td>268</td>
<td>1,186</td>
<td>5.18</td>
<td>162,256</td>
<td>1926</td>
</tr>
<tr>
<td><strong>SLT III TOTALS</strong></td>
<td></td>
<td><strong>11,235</strong></td>
<td><strong>11,258</strong></td>
<td></td>
<td><strong>2,381,555</strong></td>
<td></td>
</tr>
</tbody>
</table>

---

37 The Newark Public School System has been state run since 1995
When you step into this building, there are hazards in this building. That correlates with the quality of education that people go to.

The problem with the implementation once a barrier is we don’t have art classrooms in the majority of our schools. We don’t have computer rooms. We don’t have libraries. So you can’t even implement a whole-hearted, well-rounded curriculum in Newark public schools because at Dayton Street they may have an art room but they don’t have a computer room. And then at Ridge Street they don’t have a library and you have an art teacher carrying art supplies in a book bag and there’s no music classes or there’s no this.

Went to one school, there was no toilet paper in the bathroom. There were rats. At school, the rats had names. Seriously.

More weekend with parents, for the parents to attend. Because right now 6:00 or 7:00 at night, like most of our parents are getting home from work. But if you had, I think, something on a Saturday, every other Sunday, and make sure that you have bilingual interpreters.

So we need to teach out of the box while following the guidelines in the rules, but teach outside the box. Teach to the student.

In 2010, on the set of the Oprah Winfrey Show with the Mayor of Newark, Cory Booker, and Governor of New Jersey, Chris Christie, Mark Zuckerberg donated 100 million dollars to the Newark Public education system. One million was spent on a Newark survey detailing public school perception, problems and possible solutions.40

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40 Survey was done by Rutgers University http://media.nj.com/ledgerupdates_impact/other/PENewark%20finalreport5%206%2011.pdf
### 3.4 | SCHOOL PROFILES: SCIENCE PARK HIG

<table>
<thead>
<tr>
<th>PUBLIC SCHOOL RANKING</th>
<th>69</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE BUILT</td>
<td>2006</td>
</tr>
<tr>
<td>GRADES SERVED</td>
<td>7</td>
</tr>
<tr>
<td>TEACHERS</td>
<td>57</td>
</tr>
<tr>
<td>ENROLLMENT</td>
<td>902</td>
</tr>
<tr>
<td>white</td>
<td>179</td>
</tr>
<tr>
<td>black</td>
<td>354</td>
</tr>
<tr>
<td>hispanic</td>
<td>328</td>
</tr>
<tr>
<td>asian</td>
<td>34</td>
</tr>
<tr>
<td>TEACHER/STUDENT RATIO</td>
<td>15.82</td>
</tr>
</tbody>
</table>

magnet school

must be admitted
Science Park High School is geared towards an education in Science, Technology, Engineering and Mathematics, and utilizes modern technology within its classrooms (multimedia rooms, CAD software). Located in close proximity to University Heights, the high school takes advantage of interdisciplinary teaching through partnerships with the surrounding colleges. The building utilizes several sustainable technologies, such as solar panel roofing, geothermal wells and utilization of natural daylight. The school is recognized as a top school in New Jersey, earning a Blue Ribbon Award in 2009 as well as making the top 100 High Schools in America by US News.
<table>
<thead>
<tr>
<th>PUBLIC SCHOOL RANKING</th>
<th>131</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE BUILT</td>
<td>1957</td>
</tr>
<tr>
<td>GRADES SERVED</td>
<td>7 8 9 10 11 12</td>
</tr>
<tr>
<td>TEACHERS</td>
<td>35</td>
</tr>
<tr>
<td>ENROLLMENT</td>
<td>521</td>
</tr>
<tr>
<td>white</td>
<td>10</td>
</tr>
<tr>
<td>black</td>
<td>433</td>
</tr>
<tr>
<td>hispanic</td>
<td>72</td>
</tr>
<tr>
<td>asian</td>
<td>6</td>
</tr>
<tr>
<td>TEACHER/STUDENT RATIO</td>
<td>14.89</td>
</tr>
</tbody>
</table>

![Map of University High School]
University High School emphasizes student participation within the arts and athletics in addition to outstanding academic achievement. The high school was originally conceived as a School within a School model in 1969 and was housed within another high school. Along with Science Park, University High School was recognized as a top public high school in the country in 2010 by US News. Admissions within the high school are highly competitive where only 130 freshmen students are accepted.
<table>
<thead>
<tr>
<th>PUBLIC SCHOOL RANKING</th>
<th>131</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE BUILT</td>
<td>1920 with a 1960 addition</td>
</tr>
<tr>
<td>GRADES SERVED</td>
<td>9 10 11 12</td>
</tr>
<tr>
<td>TEACHERS</td>
<td>39</td>
</tr>
<tr>
<td>ENROLLMENT</td>
<td>474</td>
</tr>
<tr>
<td>white</td>
<td>33</td>
</tr>
<tr>
<td>black</td>
<td>164</td>
</tr>
<tr>
<td>hispanic</td>
<td>267</td>
</tr>
<tr>
<td>asian</td>
<td>9</td>
</tr>
<tr>
<td>TEACHER/STUDENT RATIO</td>
<td>12.15</td>
</tr>
</tbody>
</table>
Technology High School is a magnet school for Engineering, Applied Science and Technology. The structure is composed of two connected buildings, previously home to Newark State Teacher’s College and the Center for Occupational and Educational Development. The school has established partnerships with the surrounding colleges such as NJIT, Rutgers, Essex County College and others, where college professors offer AP courses and internship programs to the students. Partnerships also extend to the corporate world with PSE&G and ADP, where technical competitions are held such as the FIRST (First Inspiration for Recognition in Science and Technology) Robotic competition for the pre engineering program.
ARTS HIGH SCHOOL

PUBLIC SCHOOL RANKING  205
DATE BUILT  1931 with a 1996 addition
GRADES SERVED  9 10 11 12
TEACHERS  48
ENROLLMENT  559
white  40
black  313
hispanic  204
asian  2
TEACHER/STUDENT RATIO  11.65
The Arts High School was the first visual and performing arts high school in the United States in 1931. Programs offered are dance, art, drama, music and TV production. Like Technology High School, the structure is understood as two buildings, an art deco style of the 1930s and an addition on the southern wing in 1996. Students must apply for admission into the high school.
CENTRAL HIGH SCI

PUBLIC SCHOOL RANKING  274
DATE BUILT  2008
GRADES SERVED  9 10 11 12
TEACHERS  55
ENROLLMENT  862
   white  1
   black  792
   hispanic  65
   asian  4
TEACHER/STUDENT RATIO  15.67
When Central High School was rebuilt in 2008 as a modernized school, it can be characterized as a symbol of gentrification in Newark. Although its built surroundings are of middle and upper class establishments, the student body remains to be from disadvantaged neighborhoods. The school embodies ideals of community growth through a childcare center, public park and track, as well as having their cafeteria, auditorium and gymnasium acting as a hub of activity for community meetings and public forums.
### East Side High Sc

<table>
<thead>
<tr>
<th>Public School Ranking</th>
<th>293</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Built</td>
<td>1912 with three additions in 1926, 1955 and 1982</td>
</tr>
<tr>
<td>Grades Served</td>
<td>9 10 11 12</td>
</tr>
<tr>
<td>Teachers</td>
<td>82</td>
</tr>
<tr>
<td>Enrollment</td>
<td>1,143</td>
</tr>
</tbody>
</table>

- White: 462
- Black: 222
- Hispanic: 738
- Asian: 21

| Teacher/Student Ratio | 17.60 |
East Side High school prides itself on its student body diversity, and considers itself to be a ‘large comprehensive high school with a magnet touch’. The structure of the school is broken down into 3 smaller semi-autonomous units that serve all the grades. These subunits each have a prescribed educational theme associated with them, which are Business and Technology, Communications and Law and Science and Health Studies. The school has gone through 3 additive phases since its construction in 1912, and is evident in its form and exterior language.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBLIC SCHOOL RANKING</td>
<td>304</td>
</tr>
<tr>
<td>DATE BUILT</td>
<td>1957</td>
</tr>
<tr>
<td>GRADES SERVED</td>
<td>9 10 11 12</td>
</tr>
<tr>
<td>TEACHERS</td>
<td>17</td>
</tr>
<tr>
<td>ENROLLMENT</td>
<td>253</td>
</tr>
<tr>
<td>white</td>
<td>1</td>
</tr>
<tr>
<td>black</td>
<td>218</td>
</tr>
<tr>
<td>hispanic</td>
<td>34</td>
</tr>
<tr>
<td>asian</td>
<td>0</td>
</tr>
<tr>
<td>TEACHER/STUDENT RATIO</td>
<td>14.88</td>
</tr>
</tbody>
</table>
Newark Vocational High School mantra is to prepare students for a post-secondary education, apprenticeships or immediate employment in their chosen field. Through collaborations with industry related fields in Newark, students are provided with the opportunity to engage hands on with their designated craft or trade. The idea of the vocational school caters more to those who can think with their hands and is seen as an alternative to the typical high school education model. Under the shared campus plan, the high school shares their building with Newark Leadership Academy, a product of Youth Build Newark. The academy is catered towards low income youths to help complete their secondary education.
WEEQUAHIC HIGH

PUBLIC SCHOOL RANKING 310
DATE BUILT 1933 with 1976 addition
GRADES SERVED 9 10 11 12
TEACHERS 58
ENROLLMENT 759

white 1
black 746
hispanic 12
asian 0

TEACHER/STUDENT RATIO 13.09

dropout factory
Similar to East Side High School, Weequahic also offers an academy learning structure where students can choose a line of study. The Freshmen Academy is designed to assist the incoming freshmen class in their transition to high school, where as the other students choose a pathway of either Allied Health, Fine Arts and Business or Law Academy.
<table>
<thead>
<tr>
<th>BARRINGER HIGH SCHOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBLIC SCHOOL RANKING</td>
</tr>
<tr>
<td>DATE BUILT</td>
</tr>
<tr>
<td>GRADES SERVED</td>
</tr>
<tr>
<td>TEACHERS</td>
</tr>
<tr>
<td>ENROLLMENT</td>
</tr>
<tr>
<td>white</td>
</tr>
<tr>
<td>black</td>
</tr>
<tr>
<td>hispanic</td>
</tr>
<tr>
<td>asian</td>
</tr>
<tr>
<td>TEACHER/STUDENT RATIO</td>
</tr>
</tbody>
</table>
Established in 1838, Barringer High School is one of the oldest public schools in Newark. The school employs a typical comprehensive curriculum where it students are tracked into programs that are standard college, honors and advanced placement level, where placement in the later two are dependent on maintaining an academic minimum and department recommendations. The school also employs four academies: aerospace and technology, law and international studies, visual arts and graphic design and 9th grade academy. These academies offer a different curriculum where it is more theme focused.
MALCOLM X SHAB HIGH SCHOOL

PUBLIC SCHOOL RANKING: 314
DATE BUILT: 1914 with 1976 addition
GRADES SERVED: 9 10 11 12
TEACHERS: 75
ENROLLMENT: 942
- white: 1
- black: 870
- hispanic: 71
- asian: 0
TEACHER/STUDENT RATIO: 12.56

MAP OF MALCOLM X SHAB HIGH SCHOOL AREA
Malcolm X Shabazz is a typical comprehensive high school. The school offers an Automotive Technology course as a three year course option, a Video Production course as well as a JROTC program. The building is understood as two units, a 1914 structure with a 1976 addition. The style between these two units is contrasting in regards to form and façade.
WEST SIDE HIGH SC

PUBLIC SCHOOL RANKING 319
DATE BUILT 1926 with 1962 addition
GRADES SERVED 9 10 11 12
TEACHERS 77
ENROLLMENT 1,276
  white 0
  black 1,228
  hispanic 44
  asian 4
TEACHER/STUDENT RATIO 16.57
West Side High School is designated as a School Improvement Grant (SIG) school, where extra funds (awarded 6 million dollars) are utilized to promote educational gains within the system. The grant allows for the school to run from 8:10-4:05, and allows for collaborations with outside community agencies such as Urban League, Big Brothers and Big Sisters of America, Newark Alliance and a host of others. A new West Side High School is planned for construction in 2013 as the school is running at an over capacity.
# Overview: Public High School Ranking (out of 322)

## Newark High School

<table>
<thead>
<tr>
<th>School</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Park</td>
<td>69</td>
</tr>
<tr>
<td>University</td>
<td>131</td>
</tr>
<tr>
<td>Technology University</td>
<td>156</td>
</tr>
<tr>
<td>Arts</td>
<td>205</td>
</tr>
<tr>
<td>Central</td>
<td>274</td>
</tr>
<tr>
<td>East Side</td>
<td>293</td>
</tr>
<tr>
<td>Newark Vocational</td>
<td>304</td>
</tr>
<tr>
<td>Weequahic</td>
<td>310</td>
</tr>
<tr>
<td>Barringer</td>
<td>311</td>
</tr>
<tr>
<td>Malcolm X Shabazz</td>
<td>314</td>
</tr>
<tr>
<td>West Side</td>
<td>319</td>
</tr>
</tbody>
</table>

**Bottom 10% of New Jersey**

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41. [http://njmonthly.com/articles/towns_and_schools/highschoolrankings/top-high-schools-2010.html](http://njmonthly.com/articles/towns_and_schools/highschoolrankings/top-high-schools-2010.html)
In cities where public education is of a substandard level, charter schools are created as an alternative option for students.

“Charter schools are publicly funded elementary or secondary schools that have been freed from some of the rules, regulations, and statutes that apply to other public schools, in exchange for some type of accountability for producing certain results, which are set forth in each charter school’s charter.”\(^\text{42}\)

Thus, the success of these schools is based off ideas of intimacy, growth and personal relationships. As a result from this teaching methodology, at a high school level, students of charter schools often receive better marks than students of public schools. Thus, charter schools are becoming an increasingly popular option for Newark residents.

\(^\text{42}\) http://www.nea.org/home/16332.htm
However, due to the spatial constraints of an urban typology, charter schools often struggle to find a place of their own, and often have to share space with an existing underutilized public school. This has sparked massive outcry from public school parents, believing that it creates a segregated learning environment between those who have (the charter school students) and those who have not (public school students). However, there are some that believe that the structural sharing of a building can promote a sense of transparency in the school system. This debate has been an ongoing problem in cities such as New York, Los Angeles and in Newark, where this idea of a shared campus plan is under constant assault.

It is evident that smaller school design and intimate student teacher relations can improve the educational qualities within a student as is seen in charter schools. However, the existing model of retrofitting a charter school within a public school structure raises architectural issues of transparency, public versus private and programmatic usage specific to certain users. My thesis in Newark aims to challenge these issues within my contention.
The first two case studies examine a building typology that takes on multiple programs and becomes a multifaceted structure. The initial purpose of these structures has often transformed over time, reasserting a new identity that caters to the surrounding community. The next three case studies examines the school typology and how it relates to the idea of user groups and smaller learning communities.
The initial conception of the YMCA in the mid 1800s envisioned

“The improvement of the spiritual condition of young men engaged in the drapery and other trades... if young men could be religiously converted, improvement in their behavior and morals would inevitably follow.”

Thus its program initially consisted of furnished reading rooms, a library and general classrooms.

---

However, as the building evolved to take a more communal and civic purpose, it embodied and combined multiple facets reflected in the YMCA building on 23rd street and 4th avenue in New York City.

"The edifice which was to rise upon that spot was not an eleemosynary institution; it was not a charity, not a hospital, not a college, not a church and yet it combined almost all the ideals which were represented by such buildings. It was not to be a hotel or a clubhouse; but it was a building that would represent before the public the social element of religion."

It was clear that the YMCA building was envisioned as a structure that could not be readily/easily identified as a singular typology, but rather, as a mix of ideas that conveyed a sense of religion. Multiple programs are situated through five floors of interlocking volumes connected through staircases.
The program has expanded beyond the idea of individual enlightenment to include gymnasiums, ground level stores and large lecture halls and studios that could integrate with the community. In the same way that school programs try to steer students away from crime and juvenile behavior, the YMCA of the past offered unique programs such as billiards to keep young men away from pool rooms, which were seen as areas that promoted deviant behavior.

The Brooklyn Branch YMCA, dubbed ‘The Big Y’, was 13 stories tall and included multiple community programs as well, with the inclusion of dormitories. Thus, young men often stayed in these dormitories and were employed through the Boys’ Work program. However, the mix of young adults with elderly members was seen as a conflict of interests, where sometimes, a separate facility was built just for the younger users. However, most YMCAs isolated adults from the boys through different floor usage. Thus, the YMCA separated different user groups through a vertical notion. Can this separation of users be architecturally designed that allows for chance encounters and promote shared usage?
“The transformation of the YMCA building between 1890 and 1915 represented a major change in the organization. Responding to the city beautiful movement and the rise of mass culture, YMCA architecture evolved from its Victorian origins as a Christian clubhouse, a respectable male space with parlors and gymnasiums to a more secularized service role, providing leisure, education, and housing to its members.”

These organizational changes are still reflected in today’s YMCA, where it is understood as an athletics community center. Throughout its history, the YMCA has constantly rebranded and re-identified itself in order to become relevant in society. Thus, programs were constantly shuffled and refurbished, such as the transition of the revival hall to the gymnasium. In the end, the YMCA has become a community anchor that residents can identify with through membership and usage. I believe that schools can adopt this idea of transformative identity, becoming more appealing to the masses through programmatic activity and intensity. Programs that have been situated in the YMCA, whether it be the library, foyer, lounge, gymnasium, etc... are programs that are already located within a public school, or are programs that can lend themselves well to that model.
The modern mall typology has been considered the icon of American capitalism. It has represented a consumer culture that has bypassed the typical downtown mom and pop shops towards a more branded identity. As for the building itself, it is often built in the periphery of the city or suburb as an introverted box-like structure that denies its surroundings and requires an automobile to access. However, the supposed father of the mall typology, Austrian born architect, Victor Gruen, envisioned a different outcome from his intended architecture.
Southdale shopping center was opened to the public in 1956 in the suburb of Edina, Minnesota, taking up a total of 84 acres and catering to over 210,000 visitors. As the country’s first indoor shopping center made for Dayton’s department store of Minneapolis, the Southdale Shopping Center was intended to be a community center for suburban residents to use, embodying not only shops, but also offices, schools, medical facilities and even apartments.

The mall originally consisted of 72 stores on two floors with two full-size department stores and the Garden Court, a five story high void space for gatherings. Programs such as a petting zoo, stages, restaurants and art galleries were inserted throughout the Garden Court, creating an almost carnival atmosphere. Thus, visitors flocked to the Southdale Center not only for shopping, but also for an entertainment experience.46

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“Gruen also called upon his childhood memories of Vienna’s rich urban life and attempted to endow his projects with the feeling of a social townscape. Proportion, dimension, and open space based on build precedent, as well as the inclusion of such civic amenities as post office, community rooms, and facilities for events—all were part of Gruen’s concerted effort to will into being the activities and tenor of Main Street.”

In Gruen’s eyes, the idea of the mall expanded beyond the idea of shopping. However, the idea of the mall becoming this community hub, an urban space of city wide interest, was never fully realized and ultimately transformed into the shopping centers that we see today. If the initial mall typology could be accessed by foot and was integrated into the urban fabric, how could that change our understanding of its use? If we replace the shops with classrooms in the old mall design intention, what opportunities does this present us with?
4.3 | Apollo Schools

Designed by Herman Hertzberger in 1980, the Apollo Schools in Amsterdam are two similar looking schools (Willemspark and Montessori) with different pedagogical approaches to education. The two structures are offset 90 degrees from one another, allowing for an open play space that is shared by all students.
This idea of community between the two different school curriculums can be paralleled with regards to charter school and public school students in Newark. Through design, integration and interaction among the user groups can help blur the segregated notion of ‘have’ and ‘have nots’. Thus, designing spaces that offer opportunities for engagement like this square has can be influential.

Ideas of the versatile space and programmatic flexibility are manifested within the school through double use functions. Elements such as the central staircase in the structure serves as a circulation route as well as an assembly space for gatherings where it serves as seats. This idea of duel function is echoed throughout the structure, where windowsills become desks and corridors become balconies and smaller work areas.

The stairs are the main focus point of the structure as it is the main community space for the children. The central atrium allows views from above to the central point. The stairs allow for an array of activities for children.
Hayball Architects were commissioned to tackle the problem of the large school in the Dandenong district of Australia, considered to be one of the most disadvantaged areas. The design was of seven school within school buildings that housed 2,000 students on one single campus, with the intention of having the student feel more 'at home' with his surroundings.
The seven school within school buildings are situated in such a way that allows for central open student space area. Each building’s northern end allows for outdoor recreation and educational spaces.
Within each two story learning unit, classrooms are organized around a central ‘common’ room program. Within this open space, programs can be situated openly and fluidly such as informal gathering areas, study spaces and media spaces. Thus, the idea of flexibility is manifested through the ‘common’ space. This space is extended to the second floor, where programs such as auditoriums and cafeterias are situated in.
Similar to the Apollo Schools, these seven buildings have the opportunity to link and establish a sense of community through their open campus plan. Although the central space is of an open landscaped condition, can it be programmed to promote interactivity among not only students but also with the surrounding community?
east and south elevation
The Thomas Deacon Academy designed by Foster + Partners is located in Peterborough, UK, is a state of the art school that caters to 2,200 students in the format of 6 smaller learning colleges all under one roof. Thus, the idea of smaller learning communities can be understood as a campus unit or as a single structure. By breaking down the interior scale of the building into these smaller learning units, social enclaves are created and the idea of public and private are blurred through the central program and its relation to the classrooms. The academy was designed to ensure community collaborations through after school programs and educational facilities.
The curriculum is divided into lessons that are supplemented by lectures, seminars and tutorials, where math and science are of special dominance. The academy is a three story structure divided into two ribbons containing the classroom spaces and communal areas, where each node is dedicated to a specific college. The central space contains more open and public program such as the library and auditorium. Support programs such as the auditorium and lounge spaces are located in the eastern wing.

The roof structure acts as a visual anchor within the academy, where its unique curvaceous form instills a sense of awe and pride. The flood of natural daylight that enters the structure through the roof and through the classrooms helps nurture a more comfortable learning environment, where studies show that natural daylight helps increase concentration and learning.

Thus, since the climate of Newark favors slightly colder winters, this idea of smaller learning communities within a single structure makes sense in the city.
smaller school cluster zones
By understanding the context of the site through different scales, different types of program can begin to situate itself within the school that fosters this multifaceted identity. What types of program can work with a school that creates this new identity? New school construction within Newark has been an ongoing project dating back to 2005 with the ‘Long Range Facilities Plan’\(^\text{48}\), where public school surveys, projections and possible construction sites have been discussed and implemented. I plan to work with the context of this plan to situate the new public high school. The following are possible programmatic identities that the school can juxtapose itself with.

The Newark Public School system is broken down into separate districts, each with its designated schools. Some specialized high schools such as Science Park, Technology and Arts, require testing for admission and are not bound by districts. This map shows the location of the other ‘comprehensive’ high schools that require no testing and a 1 mile radius ring.
If the downtowns represent the vitality of the city, a beacon of hope for inner cities yearning for development and economic growth, what do their surroundings speak of? Are the downtowns of our cities catered for our residents, or are designed to portray a sense of stability and utopian ideal?

Downtowns are typically gathering spaces of the commercial district that pride itself on history, culture, shopping, eating and entertainment. If we take these ideals and situate them within a smaller scale, a building level, can we ‘package’ the downtown program into surrounding residential districts? By taking this downtown programmatic package and incorporating it within the typical high school model, what can this do? With this model, the idea of the downtown package can become understood as a residential agent and attraction.
The downtown programs of Newark are diverse yet typical. By consolidating the program into a type of unit and transplanting it within the public school, it becomes a community center for residents. The programs within a school lend themselves to be used by the ‘package’, such as the school library, auditorium and gymnasium. However, new relationships can be made between the school and other packaged programs such as park, museum, and galleries.
University Heights is considered the college town district in Newark, where University of Medicine and Dentistry (UMDNJ), New Jersey Institute of Technology (NJIT), Rutgers and Essex County College reside in. Together, the four colleges have created the Council for Higher Education in Newark (CHEN) in the 1970s, an informal association. Its goal was improve the surrounding communities through greater education and collaboration with students and residents.

One of CHEN’s projects was the revitalization of the University Heights region through the development of Science Park, which included new homes, commercial facilities and fresh economic development through private industries. Science Park High School was also created through this movement and benefits from the surrounding colleges through advanced classes taught by college professors and internship opportunities.
CAN THIS COLLEGE COLLABORATION WORK WITH THE NEW HIGH SCHOOL AS WELL?
proposed school site from 2005 'Long Range Facilities Plan'
school district boundaries
convenience store
community garden/farmer’s market
supermarket (1/2 mile radius)
Overweight and obesity are problems that have been plaguing the United States for years. With regards to Newark children, the rates are higher compared to the average United States student in every age group. What accounts for this is a variety of factors involving the urban environment and surroundings. Many inner cities suffer from the problem of ‘food deserts’, where fresh and healthy foods are scarce and difficult to obtain due to supermarket locations.

Thus, fast food and convenience stores are dominant in these areas, promoting an unhealthy diet and lifestyle. These convenience stores are typically mini marts or delis and do not typically sell fresh produce or fruits.

Can the redesigned public school help combat the health problems in our cities? Can it promote ideals of healthy eating and fitness through program? Newark has taken many initiatives to provide fresh and healthy food for its residents, one of which is the creation of the Newark Fresh Foods Program. The program’s goals are to bring new supermarkets into Newark, increase the number of farmer markets and provide fresh produce and grants to existing grocery stores to support them.

In Newark, the organization Brick City Urban Farm and Greater Newark Conservancy are dedicated to providing fresh produce to local residents and businesses. Realizing the need for healthy food in an urban environment, the organization situates ‘earthboxes’ within empty lots and grow vegetables to sell to locals. Their goal is to have this urban farm within one of Newark’s wards. The space for growth does not have to be confined to the lot, but can also take place along empty roofs. Can the school become a type of urban farm hub? Can this affect what students eat at lunch? What kind of user groups will this bring? The idea of food can also be extended to the program of a farmer’s market.
proposed school site from 2005 ‘Long Range Facilities Plan’

school district boundaries

park

exercise facility
In terms of physical activity, statistics show that 70% of Newark students are not physically active for 60 minutes everyday. Within an urban typology, park space is always a constant problem in regards to proximity to residents. In Newark, it is evident that there are not enough recreation centers that promote physical activities among the younger population. If schools can open their gymnasiums up to the public, what opportunities does this offer the city?

In an effort to promote a healthier lifestyle, the Let’s Move! Newark program was created in 2010 to curb obesity. The idea was for high schools to partake in a competition to see whose students could move for the most minutes.

If we take this idea of movement and translate it within the school, can that change the way students learn? Physical Education is mandated within the high school curriculum, but can it go beyond the typical exercises and jogging around the track? If the newly designed high school is to meet the demands of the 21st century, how is that translated into physical fitness?

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49 This recommendation is based off the U.S. Department of Health and Human Services for Physical Activity Guidelines
A survey done by the Department of Health and Human Services in 2006 highlighted several community needs expressed by residents...

- recreation programs to distract students
- public gymnasiums / recreational facilities to increase family time
- health education workshops regarding sex and STDs
- parent centered health education and parenting classes
- increased police
- shelter facilities for homeless
- job training for ex convicts

Focusing on the recreation programs, one of the main problems within the city of Newark is the fact that students are growing up without their fathers as previously stated. Thus, a majority of Newark students do not have the guidance or stable family structure that many suburban high school students have. The time window between 3pm to 6pm, from after school to before traditional dinner hour, is the peak hours for delinquent behavior such as crime and drug use. After school programs are offered to curb these lifestyles and promote an environment to distract students away from these behaviors and more towards educational values and personal development, a safe haven from the city crime life. Can we bring these after school programs into the school as an integrated unit? There are many successful after school programs in Newark such as the Dr. Marion A. Bolden Student Center, Boys and Girls Club, and After School Youth Development Programs that keep Newark Students off the streets and into a more positive lifestyle.

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http://www.afterschoolalliance.org/documents/a4a/afterschool_all_brochure_pdf.pdf

Newark student painting mural at Dr. marion A. Bolden Student Center
The school can also cater to the other community needs, such as providing space for parent education regarding health and family service, or participating in the Newark Prisoner Reentry Initiative. More than 1,700 Newarkers are released each year from the state prison, with an additional 1,400 being released from the local jail, Essex county Correctional Facility. However, research indicates that an estimated 62% will recidivate back into their criminal behavior and will be re-incarcerated within three years of release. These have detrimental effects on communities and cities yearning for economic stability, as the cycle of arresting, incarcerating and re-arresting often lead to consistent unemployment and broken family structures.\footnote{http://manhattan-institute.net/html/cci_moving_men_into_the_mainstream.htm}

In 2008, the United States Department of Labor has awarded a grant to Newark to develop the Newark Prisoner Reentry Initiative, a program that helps ex-convicts immediately find employment. The program helps sponsor programs such as Opportunity Reconnect, Newark Comprehensive Center for Fathers, and Clean and Green job promotions. The program has 1,340 participants and holds a recidivism rate of below 10%, where 76% still maintain their job after 9 months. In addition to employment, these programs assist in the attainment of documents and obtain a GED, as many of these ex-convicts have not graduated high school.

Can the high school also help in the education of our ex-convicts? Can a type of collaboration exist between at risk students, who are growing up in fatherless homes and ex-convicts, looking for another chance in life? I believe that an interesting partnership can become synthesized from these relationships that can benefit the surrounding community.
With the school within school model, subunits are created that possess a certain theme or curricular direction such as an arts, vocational or communications. Students have the freedom of choice to pursue what subunit they wish to belong to and allow them to match their academic level to the required expectation. For example, if a student is more hands on and crafty oriented, a vocational or arts subunit may cater to his skills better than a technology path. The goal of these subunits is to attract a diverse student group that caters to their interests. Despite the differentiated curriculums, subunits are still understood to be under the same school system.

These subunits work similarly to the idea of magnet schools, where they attract students based on interests that can go beyond their district boundary. The magnet schools in Newark offer vocational, technology, arts and college prep designed curriculums. By understanding what programs exist within the city, and what programs can be utilized in Newark, a high school that is broken down into subunits of health, business and community can be highly collaborative for educational and neighborhood purposes. These three subunits along with the charter school unit create a diverse learning environment with potential for interdisciplinary teaching and exchange of information.
Each of these subunits can form partnerships with surrounding programs, particularly the Universities in Newark. UMDNJ holds free medical clinics and checkups for residents at their campus. Collaboration between high school health students focusing on medical related studies and UMDNJ can exchange knowledge and offer lectures and seminars. In exchange, the school can offer offices for UMDNJ to allow for more free clinics.

This college collaboration can also extend itself into the business subunit with the strong presence of Newark Business School at Rutgers.

The Community School, which caters more toward leadership and community service, can work together with various other organizations throughout Newark. These organizations can come into the school and work along with the students to help promote services such as community gardens and soup kitchens.
The selected site under the ‘Long Range Facilities Plan’ is based primarily off the overcrowded conditions of West Side High School, as it is the only comprehensive public high school within its district zone. Thus, the new high school can help alleviate the exhausted West Side High School, which is the lowest ranking public high school in the city. The site can also cater to the North Region West District, where a high school does not exist (students from the region would commute to Barringer High School across the park).
The location of the school can benefit from the many program possibilities iterated from the University Heights region as well as the downtown district. Its proximity to these institutions has the potential to foster collaborations and act as a junction for these ventures.
The site is primarily surrounded by residential homes to the west and south, with two apartment towers on the east. The block that the site is occupied is approximately two city blocks in one, where the north west corner is cut off by the road. The street north of the site is primarily a commercial corridor containing small shops and services. The post industrial space is located next to a railroad, creating an edge condition. The mixed-use triangle region is of residential and small commercial usage.
7 | DESIGN
PROGRAM/SITE SITUATION
School program block pulled back to cater to site geometry and extend outdoor public space

Public passageway extends into school showcase space
Running track from athletics facility extends into showcase

School floors located above, maintain showcase atrium