

DESIGN STANDARDS TO SUPPORT

AN EXTENDED DAY, COLLABORATIVE TEACHING, SHARED LEARNING ENVIRONMENT



OFFICE OF THE STATE
SUPERINTENDENT OF EDUCATION
Charter School Incubator Initiative

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DESIGN GUIDELINES
FEBRUARY 2016





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INTRODUCTION

Can Building Design Support An Educational Program?

After two decades of marked improvement, progress on closing the achievement gap between wealthy white and low income students of color stalled in the year 2000. Since that time, little progress has been documented. Statistics collected in 1999 remain relevant today and illustrate that by the end of high school:

- Only 1 in 50 Latinos and 1 in 100 African American 17-year-olds can read and gain information from specialized text—such as the science section in the newspaper (compared to about 1 in 12 whites)
- Fewer than one-quarter of Latinos and one fifth of African Americans can read the complicated but less specialized text that more than half of white students can read.

The same patterns hold in math:

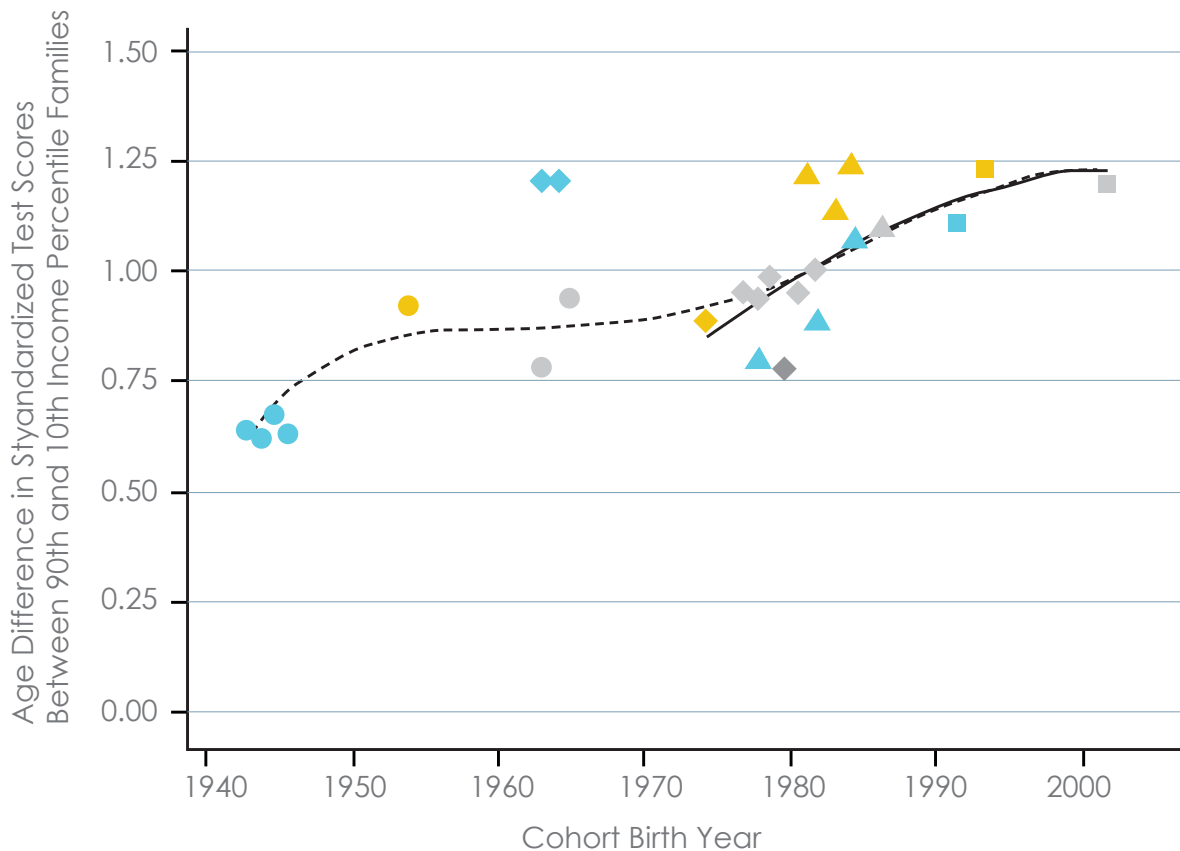
- About 1 in 30 Latinos and 1 in 100 African Americans can comfortably do multistep problem solving and elementary algebra, compared to about 1 in 10 white students.
- Only 3 in 10 African American and 4 in 10 Latino 17-year-olds have mastered the usage and computation of fractions, commonly used percents, and averages, compared to 7 in 10 white students

Closing the achievement gap has been a persistent goal for educators and policy makers for the last forty years. The benefits to local communities and the Nation as a whole in achieving this goal are significant and self-evident.

Building Excellent Schools network is a group of schools that are achieving remarkable results through an unwavering belief that all students can, must, and will learn at high levels. A clear, college-bound mission that is understood and supported by all school members is the key to their success.

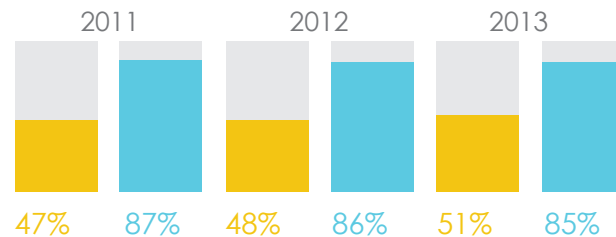
ACHIEVEMENT PREPARATORY ACADEMY in Washington DC is one such school. These guidelines illustrate how the school's program is structured and how architectural design in a new facility promoted and enhanced the school's ability to institute its program.

TREND IN 90/10 INCOME GAP IN READING, 1943-2001 COHORTS

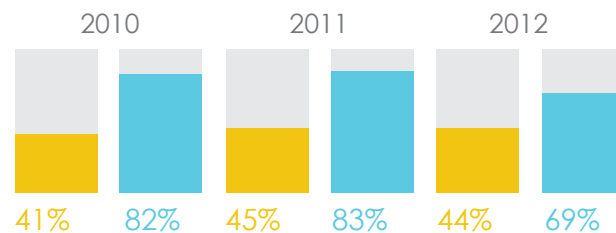


- TALENT
- NLS
- HS&B
- ◆ NLSY79
- ◆ NELS
- ◆ ADD HEALTH
- ▲ PROSPECTS
- ▲ NLSY97
- ▲ ELS
- SECCYD
- ECLS-K
- ECLS-B
- QUARTIC FITTED TREND 1943-2001
- FITTED TREND 1974-2001

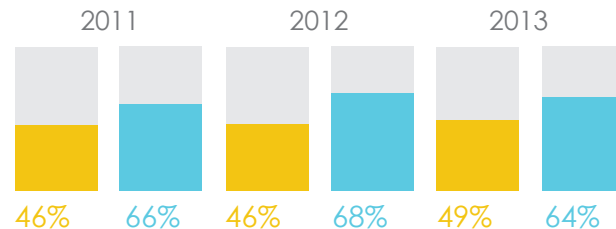
MATH
ACHIEVEMENT PREPARATORY ACADEMY vs DC



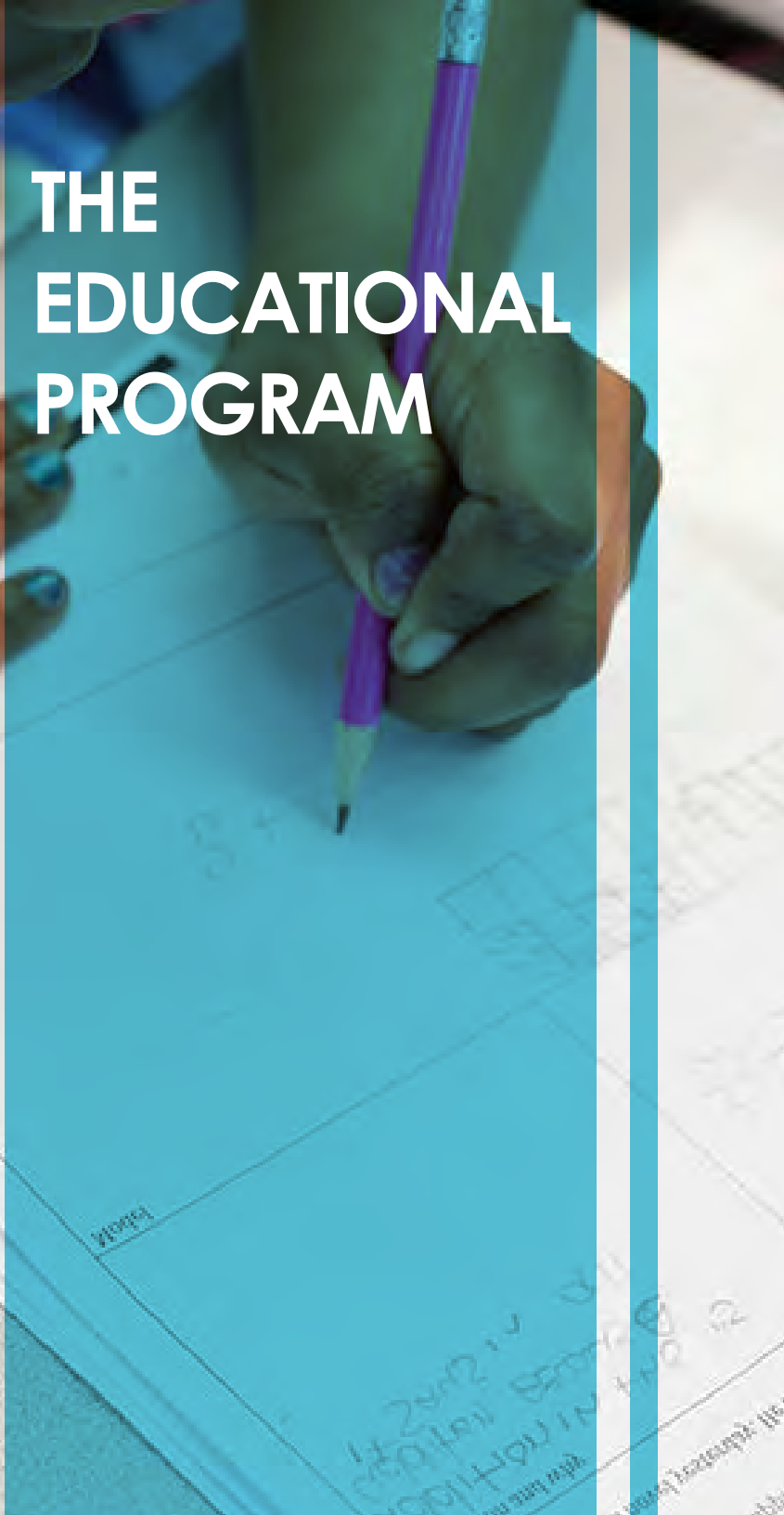
SCIENCE
ACHIEVEMENT PREPARATORY ACADEMY vs DC



READING
ACHIEVEMENT PREPARATORY ACADEMY vs DC







THE EDUCATIONAL PROGRAM

THE EDUCATIONAL PROGRAM

Overview

Achievement Preparatory Academy (APA), as a member of the Building Excellent Schools network, uses an Educational Program that is having positive results in closing the achievement gap. In addition to a very deliberate outreach to the community and parents, the school implements a rigorous, customized college-bound curriculum that features the following

Longer School Days And Maximizing Time With Students.

School days at APA start earlier and last longer. This maximizes the time students ("scholars" in the parlance of APA) have in schools and the time available for teachers to interact with students. The Achievement Preparatory Academy academic year lasts 10–15 days longer than a typical school. This extended time results in an extra two years of education for every four years spent in school. "We work as a team to create a palpable sense of urgency easily noticeable to any visitor." Says one Achievement Prep teacher.

Establishing The School Culture

Building strong character amongst scholars is key to the success of the Educational Program and is reinforced throughout the school day. Studies have shown that a positive school culture has a profound effect upon students' academic achievement and social interactions with peers and adults. Social norms have been called

the "grammar of a society" because norms, like the rules that govern a language, delineate what a social group finds acceptable or unacceptable.

Collaborative Teaching

The benefits of team teaching, in which a group of instructors works purposefully, regularly, and cooperatively to help a group of students learn are well documented. Teachers working together can share insights while working in the same room preparing lessons plans. If encouraged to work in a shared room, teachers can work together to set goals for a course, design a syllabus, prepare individual lesson plans, teach students, and evaluate the results. This collaborative teaching approach has been shown to improve the performance of children with low test scores.



Elementary School Scholars at Achievement Preparatory Academy



DESIGN RECOMMENDATIONS



NATURAL DAYLIGHTING

Overview

A LONGER DAY REQUIRES A BUILDING TO PROVIDE
... **an organized environment with diverse experiences**

A longer school day requires an environment that supports long periods of academic study but can also provide diverse experiences to stimulate a student's mind and prevent fatigue. The following are three ways in which a school environment can provide a stimulating but not distracting academic environment for students.

Natural light in classrooms

Day-lighting in schools gained many supporters with a definitive study by researchers (The Heschong Mahone Group) in 1999 proving that natural light was a significant factor in student achievement. The most successful classrooms have light from windows, skylights, borrowed light and reflected artificial sources.



ARTIFICIAL LIGHTING

Overview

A LONGER DAY REQUIRES A BUILDING TO PROVIDE
... **an organized environment with different types of artificial light**

Different Types of Artificial light

Artificial light coupled with natural light from the outside, preferably on two sides, is the ideal for student learning and comfort. In studies (Wurtman,1975) light has been shown to be the most important environmental input, after food and water, in controlling bodily functions. Lights sources of different types and complimentary color ranges can affect blood pressure, pulse, respiration rates, brain activity, and biorhythms. Poorly lit or windowless classrooms can cause students to experience a daily form of jet lag



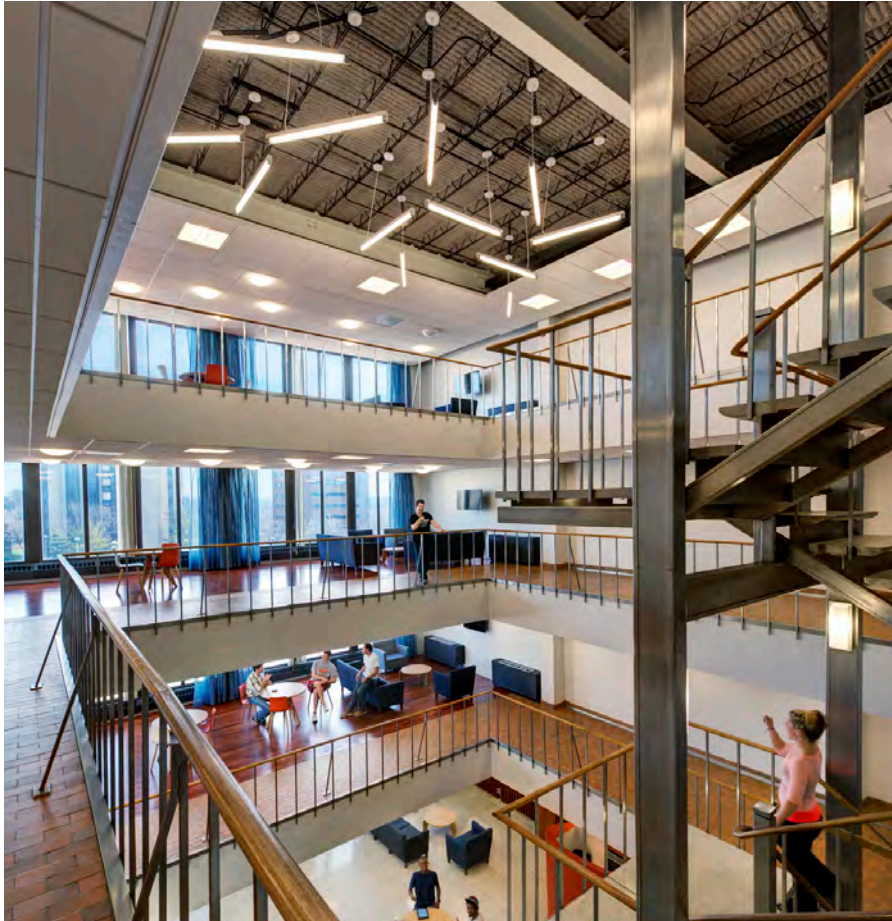
PATTERNS OF VIEWS

Overview

A LONGER DAY REQUIRES A BUILDING TO PROVIDE
... **an organized environment with different patterns of views**

Patterns of Views

Views should be visible from places of transition as opposed to direct orientation. This concept is important for classrooms where students need to see outside but are not distracted by a commanding view. Views of at least fifty feet in depth enable students to rest their eyes before refocusing on the teaching wall.



PUBLIC AREAS

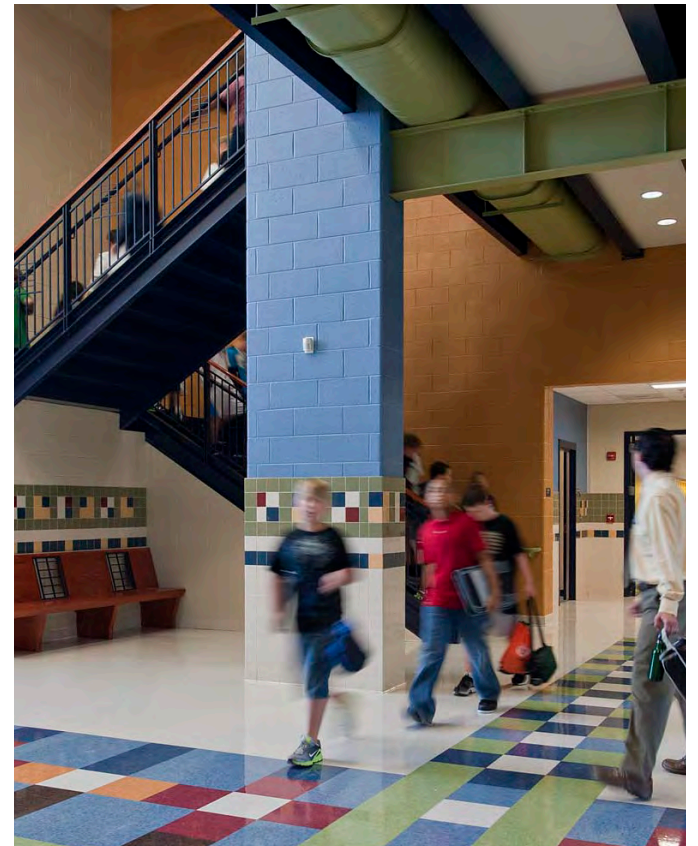
Overview

CREATING A SCHOOLWIDE CULTURE OF SHARED DISCIPLINE AND ACADEMIC VALUES REQUIRES A BUILDING TO PROVIDE **organized environments and specific school-wide gathering places**

It is important that the school have a clear and readily apparent culture of discipline and shared goals. The following are three ways in which a school environment can establish this critical aspect of an appropriate school culture.

Public Areas

Provide spaces that foster a sense of community (unity and belonging) such as Auditorium, Student Common Areas and a Dining areas. These public areas should be inviting with comfortable settings and include ample natural lighting.



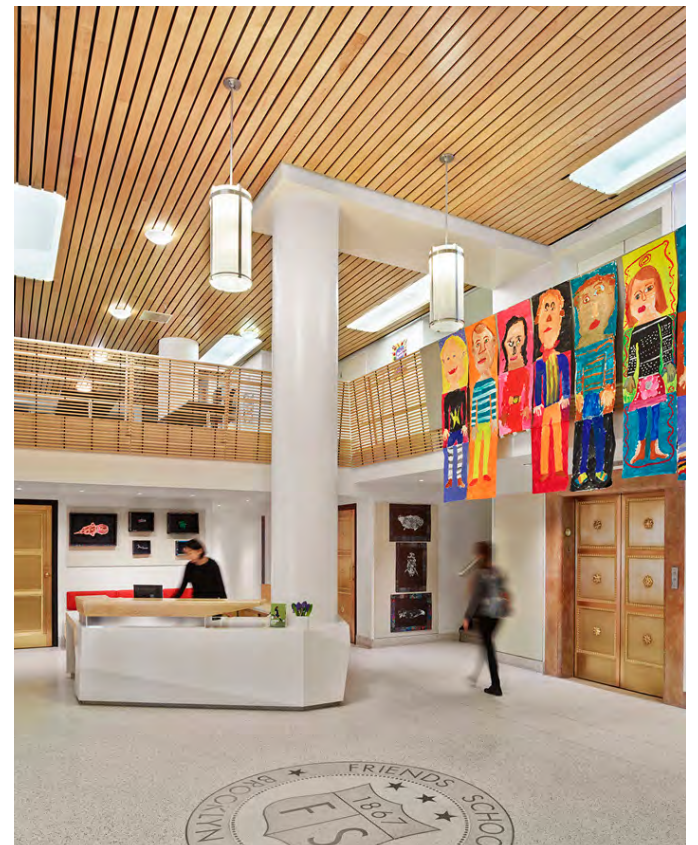
POINT OF REFERENCE

Overview

CREATING A SCHOOLWIDE CULTURE OF SHARED DISCIPLINE AND ACADEMIC VALUES REQUIRES A BUILDING TO PROVIDE **a physical central point of reference**

Physical Central Point of Reference

The school should be designed around a central point of reference. This allows a student to reference their location and feel comfortable and safe in their place within the building.



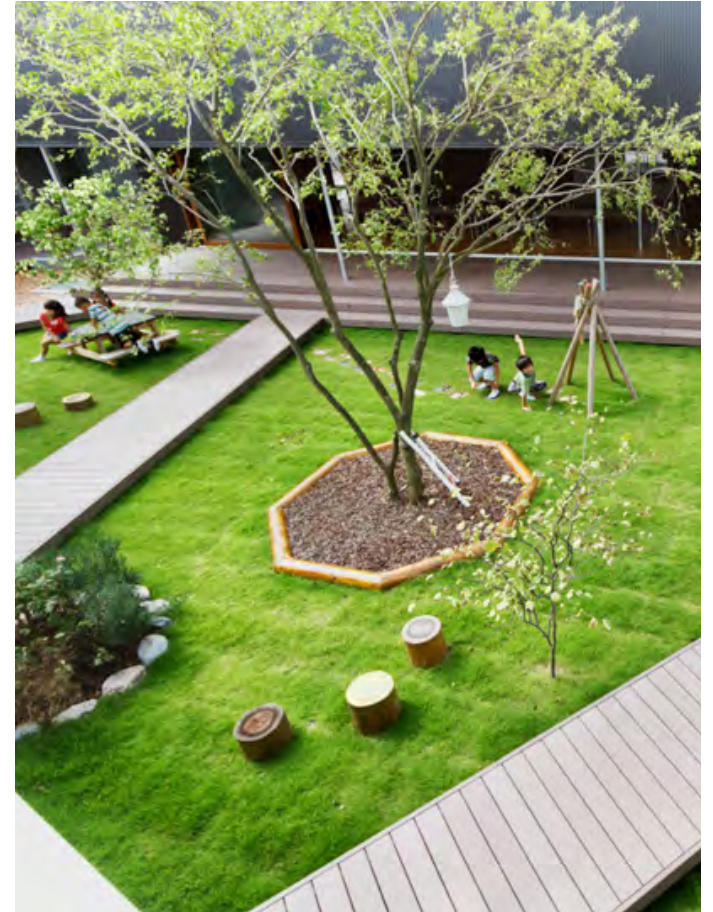
OUTDOOR SPACES

Overview

CREATING A SCHOOLWIDE CULTURE OF SHARED DISCIPLINE AND ACADEMIC VALUES REQUIRES A BUILDING TO PROVIDE **outdoor spaces**

Outdoor Spaces

These places are defined as learning areas, and wings of buildings, trees, hedges, fences, fields, arcades, or walkways may surround them. Provide outdoor spaces to create a sense of spatial diversity in the educational environment.



ENGAGING TEACHERS

Overview

ENGAGING TEACHERS WORKING TOGETHER
REQUIRES A BUILDING TO PROVIDE **group
teacher resource rooms and no ownership of
classrooms**

Collaborative teaching has been shown to improve the performance of children with low test scores. School designers should make an effort to create spaces where both formal and informal collaboration can occur between teachers.

Teacher Resource Room

Teacher Resource Rooms are for work rooms where teachers meet, talk and share ideas. They are different than classrooms which are simply spaces to teach. By having teachers treat a central workroom as their base of operations as opposed to the classrooms a community of team teaching is established.

Classrooms

Classrooms can then be flexible in their devotion to teaching. There is greater flexibility in timing and space in the classroom is not required to be devoted to teacher storage and other accessories. Open space in a room delivers a silent message to students, where the flow and shift of distance between people is a large part of the communication process. (Duncanson, 2003; Hall, 1959).





CASE STUDY

ACHIEVEMENT PREPARATORY
ACADEMY



CASE STUDY

Overview

Achievement Preparatory Academy

Achievement Preparatory Academy is a high-performing, college preparatory school located east of the Anacostia River in Ward 8 of Washington, DC. Founded to close the achievement gap and address the educational needs in the community, Achievement Prep is an award-winning school that has been recognized for having an immediate immediate impact in closing the achievement gap between low-income and affluent students in Washington, DC.

Achievement Prep scholars have been among the top performing scholars in the District, often outperforming their peers in more affluent neighborhoods. The new flagship middle school campus opened in 2015 and is a building designed to promote the educational mission of Achievement Preparatory Academy



Team of Teachers and Staff at Achievement Preparatory Academy

THE NEW BUILDING PROVIDES

A Longer Day

THE NEW BUILDING PROVIDES ... **diverse experiences through patterns of light and views to support A Longer Day**

Views Overlooking Life

Students at the school are provided with vistas to the outside world that are not overlooking a wall or parking lot. On the north and south sides of the building students see forest while the east is the interior courtyard and the west overlooks the City. In the new school doors and windows allow students to easily see at least 50 feet outside the classroom.

Natural Daylighting

The fenestration of the building provides views and daylighting to the classrooms. Windows are provided and are available within the classroom, and when glare is not a problem, blinds are raised.

Artificial Light

The building has different sources and types of artificial light that complement the abundant natural light.



■ indirect downlight with 3500k warm white color

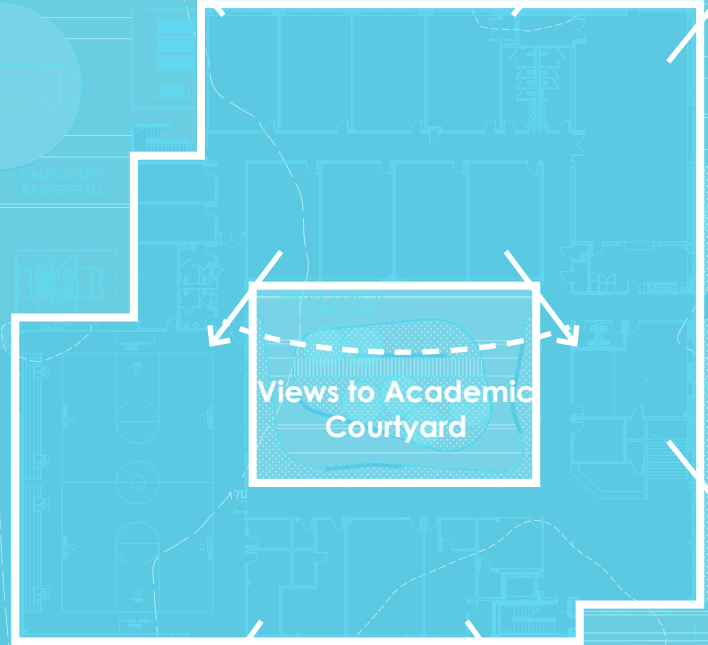
■ indirect downlight with 3500k warm white color

○ LED 3500k warm color direct downlight

— wall mounted sconce 3500k warm white color

— compact fluorescent downlight with 4000k daylight color

Views Overlooking Forest Area



Views to Academic Courtyard

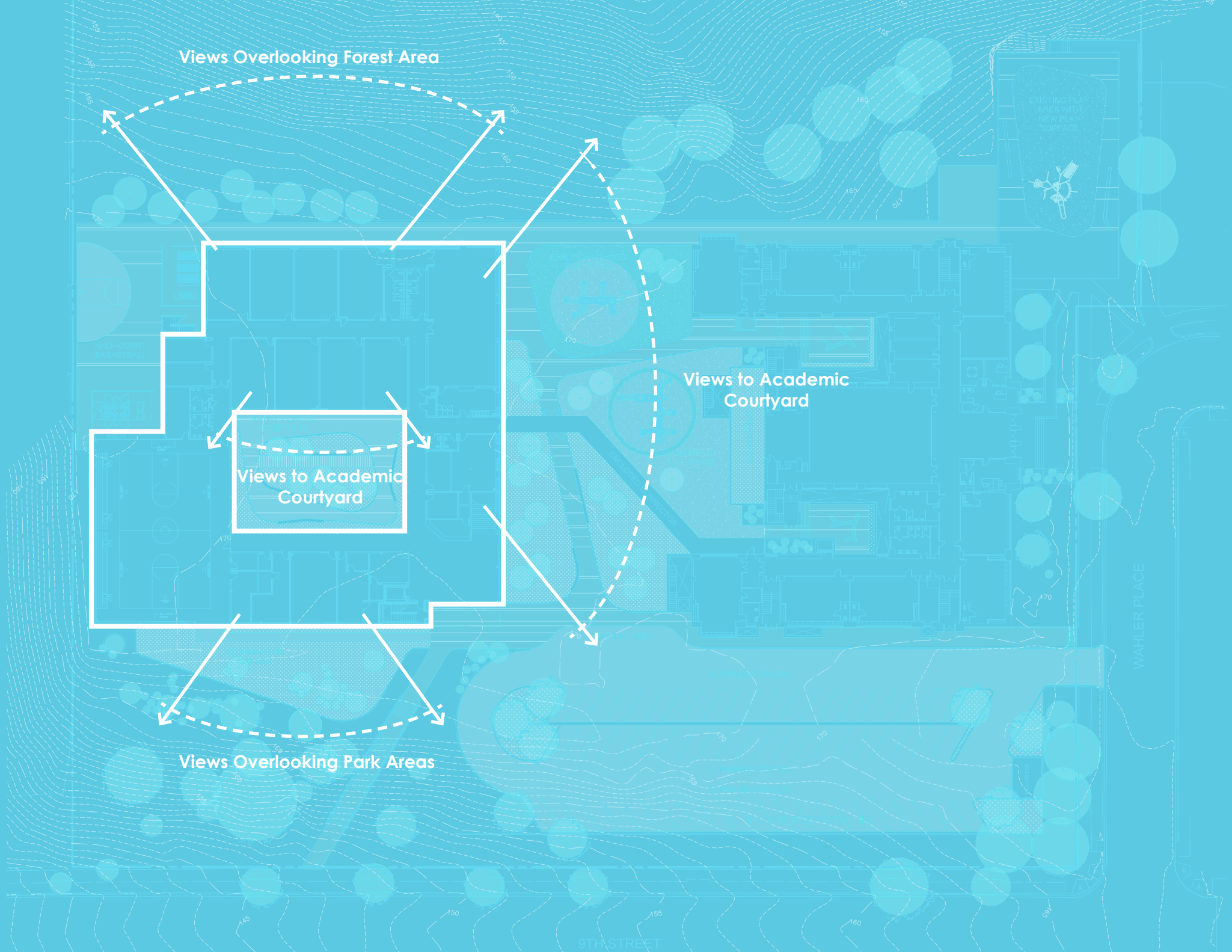
Views to Academic Courtyard

Views Overlooking Park Areas

EXISTING PLAY AREA WITH NEW PLAY SURFACE

9TH STREET

WAHLER PLACE



THE NEW BUILDING PROVIDES

Shared Discipline & Academic Values

THE NEW BUILDING PROVIDES ... **an organized environment and specific gathering places to support a schoolwide culture of shared discipline and academic values**

The Courtyard

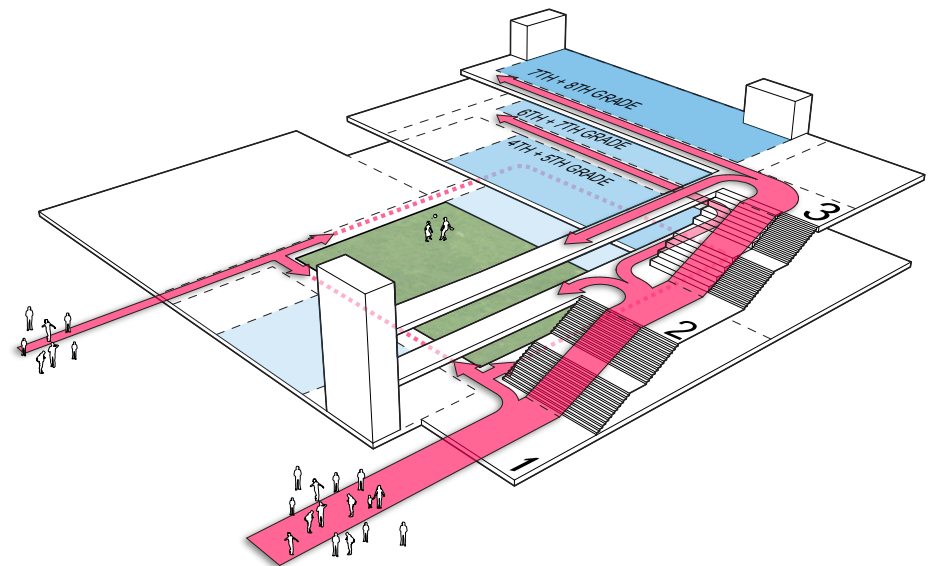
A central green courtyard is provided in the building. It provides a gathering space as well as a central point of reference for orientation of movement of students around the school.

The Commons

A central student commons area is accessed directly off the main entrance. It provides a place for students to gather and reinforce a common school culture. Its location directly off the main entrance indicates and illustrates to all visitors the importance of shared culture at Achievement Preparatory Academy.

adjacent: diagram of circulation around a central point of reference

opposite page: View of green space in courtyard





THE NEW BUILDING PROVIDES

Support Team Teaching

THE NEW BUILDING PROVIDES**Separate teacher resource rooms and unassigned classrooms to... create and support team teaching**

Teacher Resource Rooms

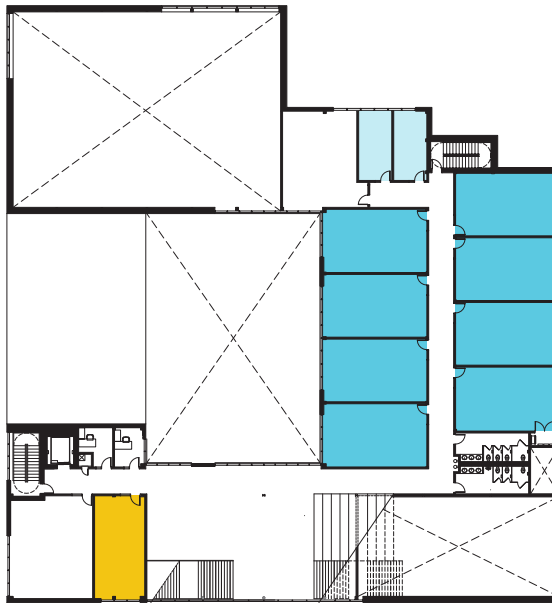
Teacher resource rooms are located at a convenient location on each of the buildings three floors. This allows teacher teams for each of the school's three grades.

Classrooms

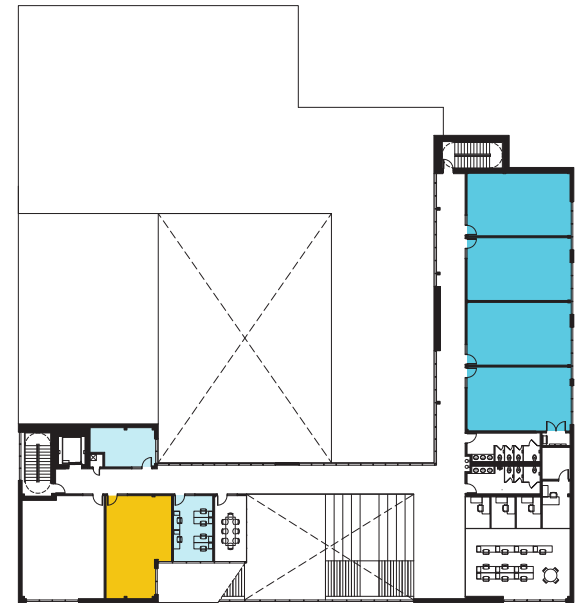
Classrooms are arrayed around the perimeter of the building allowing for different views and a range of experiences, patterns of views and daylighting. The classrooms can be slightly smaller than a typical classroom because they do not include all the storage of housing a permanent teacher.



FIRST FLOOR



SECOND FLOOR



THIRD FLOOR

- CLASSROOM
- SPECIAL NEEDS
- TEACHER WORKROOM





CONCLUSION

CONCLUSION

Overview

Local Focus for National Impact

At Achievement Prep, good is not good enough
–redefining what it means to be a “high-performing school.”
Achievement Prep will raise the bar and show what’s
possible in urban education. audacity to demand that
our scholars not only close the achievement gap, but also
compete and succeed at the very highest levels in high
school, college, and beyond.....community deserves more
than additional “seats” at good schools.
Of course, this approach is not the only answer to all
problems....., It requires planning, skilled management,
willingness to risk change and even failure, humility, open-
mindedness, imagination, and creativity.



Photos listed left to right or clockwise
(depending on page layout)

P.1 Susie Fitzhugh Educational Stock Photography. Web. Feb. 2016. <<http://susiefitzhugh-stock.photoshelter.com/image/10000jddUZN3c3XM>>

P.7 _____

Math, Reading and Science Graphs. Web. Feb 2016. <<http://achievementprep.org/results>>

P.9 Photo by Achievement Prep Academy. Web. Feb 2016. <<http://achievementprep.org>>

P.11 Photos by Achievement Prep Academy. Web. Feb 2016. <<http://achievementprep.org>>

P.13 Graphic by Studio Twenty Seven Architecture. 2015.

P.15 Classroom from Pistorius-Schule. Web. Feb 2016. <<http://www.designshare.com/index.php/projects/pistorius-schule/images@4013>>

Hood River Middle School Music and Science Building. Web. Feb 2016. <<http://www.opsisarch.com/blog/project/hood-river-middle-school-music-and-science-building>>

P.17 Product Gallery Image. Web. Feb 2016. <<http://www.onesa.com/manufacturer/columbia>>

Science Lab Classroom at Mildred Hawk Elementary School. Web. Feb 2016. <<http://www>.

designshare.com/index.php/projects/mildred-hawk-elementary-school/images@4975>

Product Gallery Image. Web. Feb 2016. <<http://www.innova-solutions.co.uk/spaces/dining-rooms>>

P.19 Photos of Galludet University by Hoachlander Davis Photography. Property of Studio Twenty Seven Architecture.

P.21 Theatre School of Depaul University by Ceser Pelli. Web. Feb 2016. <<http://aasarchitecture.com/2013/09/theatre-school-of-depaul-university-by-cesar-pelli.html>>

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P.23 The New School Lobby and Student Lounge. Web. Feb 2016. <<http://www.1100architect.com/projects/the-new-school-lobby-and-student-lounge>>

Saunalahti School. Web. Feb 2016. <http://www.yitgroup.com/YIT_GROUP/business-premises/references/single/2012/08/22/saunalahti-school>

Brooklyn Friends School Lobby. Web. Feb 2016. <<http://www.1100architect.com/projects/brooklyn-friends-school-lobby-and-cafeteria>>

P.25 Courtyard view of Vilhelmsro

Skole. Web. Feb 2016. <<http://www.archdaily.com/94566/vilhelmsro-skole-big>>

Courtyard view of D.S. Nursery. Web. Feb 2016. <<http://www.designboom.com/architecture/hibinosekkei-youji-no-shiro-shari-hoikuen-nursery-school-11-08-2014>>

P.27 Renderings by Studio Twenty Seven Architecture. 2015.

P.29 Rendering by Studio Twenty Seven Architecture. 2015.

P.31 Photo of Wahler Entry by Hoachlander Davis Photography. Property of Studio Twenty Seven Architecture.

Photo by Achievement Prep Academy. Web. Feb 2016. <<http://achievementprep.org>>

P.32-33 Diagrams by Studio Twenty Seven Architecture. 2016.

P.34 Diagram by Studio Twenty Seven Architecture. 2016.

P.35 Photo of Wahler Courtyard by Hoachlander Davis Photography. Property of Studio Twenty Seven Architecture.

P.37 Diagram by Studio Twenty Seven Architecture. 2016.

P.39 Students engage at Alameda Community Learning Center. Photo by David Hoopes.

P.41 Rendering by Studio Twenty Seven Architecture. 2015.

