

2022 Exhibition of School Planning and Architecture Northeast Region

Solomon Solis-Cohen Elementary
School

The School District of Philadelphia

Philadelphia, Pennsylvania

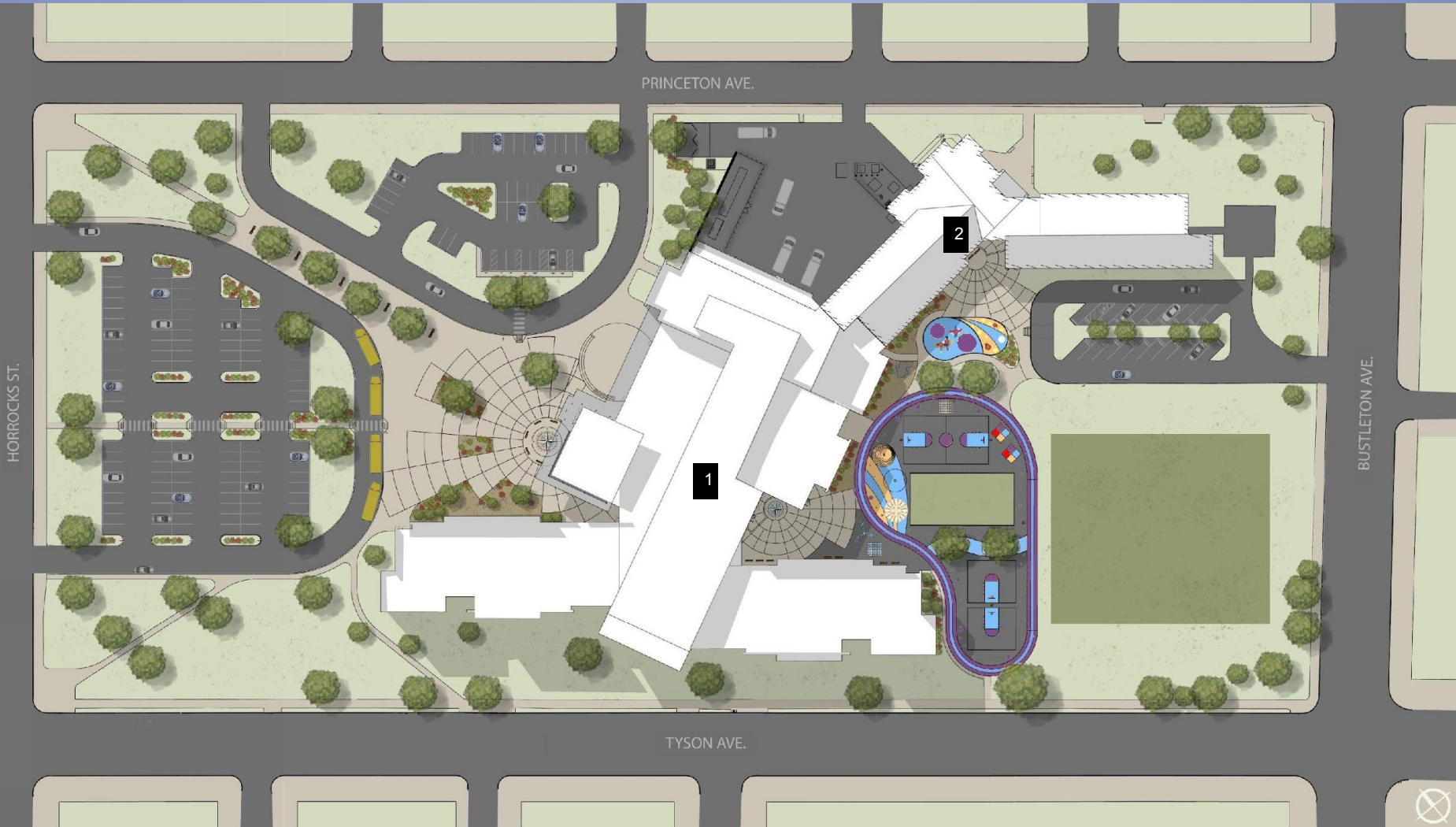
Solomon-Solis Cohen Elementary School



Design 2017-2018, Completed- November 2021
First through Fifth Grade, 1,400 Students
150,000 Square Feet, 107 SF/ Student
USGBC LEED Platinum Certification Pending



Solomon-Solis Cohen Elementary School



Site Plan

1. Solomon Solis-Cohen Elementary School
2. Existing Primary Educational Center (PEC)





Community Environment: Solomon Solis-Cohen Elementary School is a 150,000 square foot replacement school, first through fifth grade school serving 1,400 students, the largest elementary school in The School District of Philadelphia completed in the fall of 2021. Situated in the heart of dense housing approximately one mile in diameter in Northeast Philadelphia, the building was designed from early discussions with the school district, staff and community to not only improve the educational environment for the students, but also to act as a center to bring the diverse and multilingual community together. Physically the building's exterior reflects materials found in the surrounding community, but more importantly the student body is a reflection of the diversity of the community with more than 30% of the student body speaking a language other than English as their primary language. Exterior of the building proper, goals were set for the new campus to act as a park for the community during the day but as important after hours and weekends.





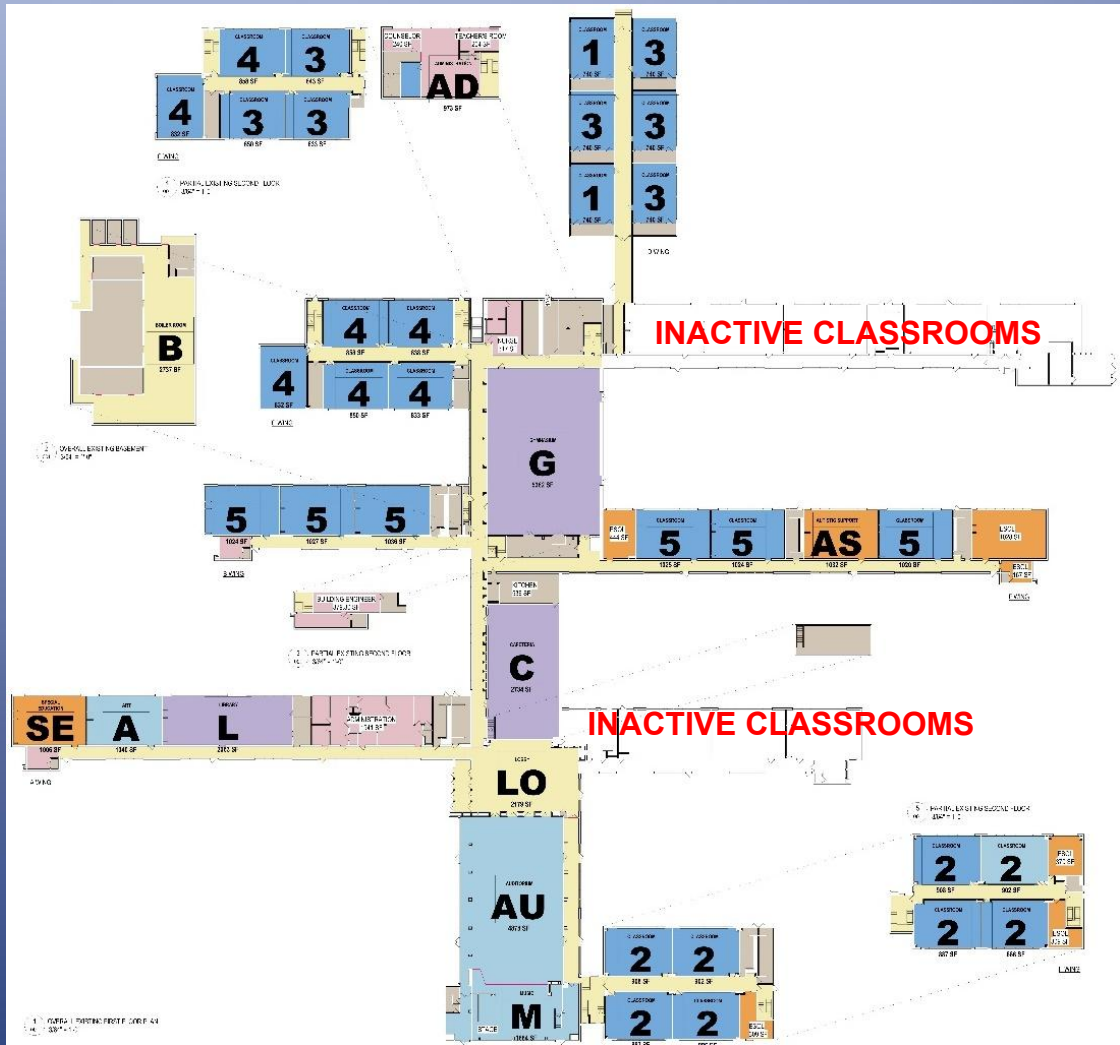
Our Mission

Our Solis-Cohen Learning Community is...

DEDICATED to achieving academic excellence.

DEVOTED to providing our culturally diverse community with a safe and supportive environment where student achievement is our focus.

COMMITTED to developing a community of life long learners who can thrive in an ever-changing global economy.



Community Environment:

A rich school community of 1,300 young learners, and a pride of the community as many schools are, the diverse population is highlighted by the informal mascot and symbol of Solis Cohen, the ladybug mural with the yellow dot for inclusion for all students no matter their diversity, whether language, physical or special needs, all students are welcome and embraced for their uniqueness.

The existing Solomon Solis-Cohen Elementary School had been built in a post World War II era expansion school for the baby boomer generation built in 1948, 97,000 square feet it served 34 active classrooms and 8 inactive classrooms due to structural failures. Constructed as a predominantly one-story structure with single loaded six foot narrow corridors it was an example that a school is the students and community that nurtures them and not the building.





Sharp-eyed worker discovers Solis-Cohen Elementary is crumbling

by [Kristen A. Graham, Inquirer Staff Writer](#), Posted: September 2, 2015

Hundreds of students who attend Solis-Cohen Elementary in the Northeast will not be able to start their school year on time due to serious structural problems at the building.

The building at 7001 Horrocks St. was recently discovered to be structurally unsound, Philadelphia School District spokesman Fernando Gallard confirmed.

The emergency repairs are part of an ongoing problem in the city school system, where many of the 200-plus buildings are old and in poor condition.

Ad closed by

Stop seeing t

Why this ad

Community Environment:

In the Fall of 2015 The School District of Philadelphia discovered structural integrity issues within Solomon Solis-Cohen Elementary, that due to their severity necessitated the replacement of the school and forced the immediate closure of two wings for students' safety. An emergency, the replacement presented the opportunity to create a 21st century educational environment to enhance the education occurring in the school and community.

The entire existing campus (two city blocks long) had been fenced off from the community after hours with six-foot high chain link that separated the community for years. Initial goals were not only to create a modern school, but how could the campus be opened safely to the community again.





**Main Entrance & Cafetorium
Facade**

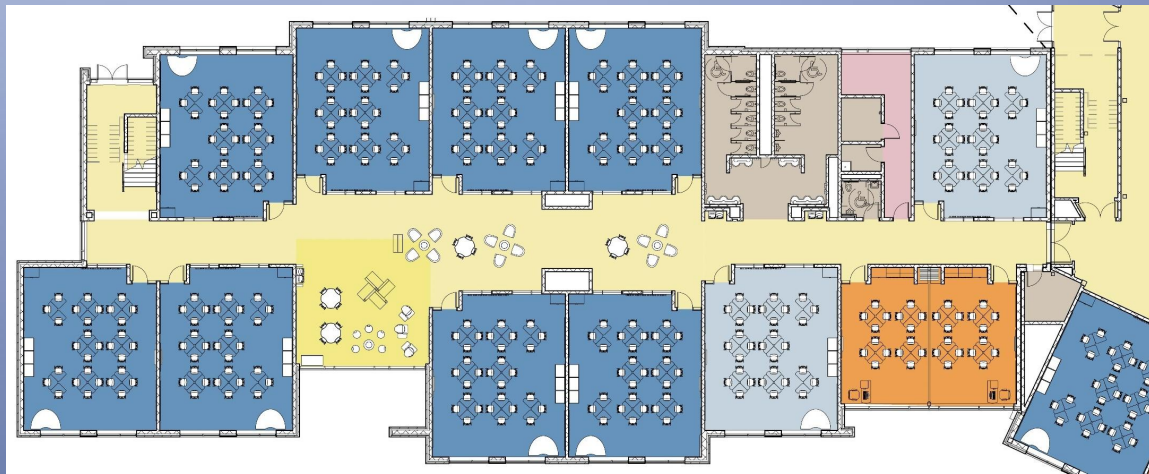
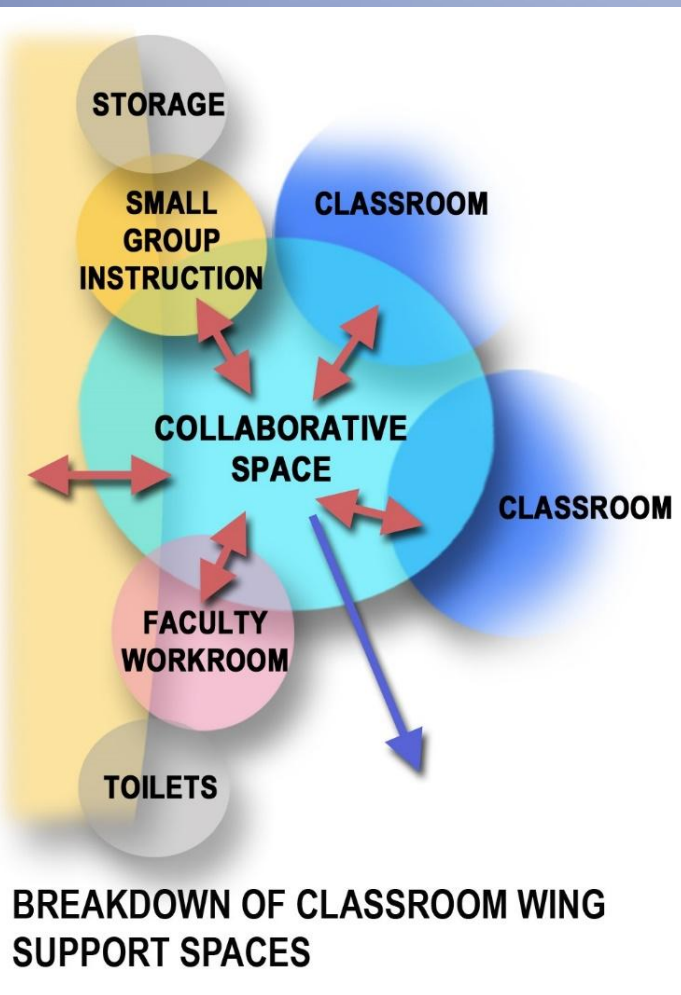


**Classroom & Library
Facade**

Community Environment:

The completed Solomon Solis-Cohen Elementary School has been embraced by the community. The school increased in size by more than 50%, balancing varied scales of learning space within the school in an open and inviting environment. Strategic use of lighting within the school and campus create natural surveillance throughout all hours, allowing the building to quite literally become “A Beacon of Learning for the Community” as discussed at early planning meetings. Fencing was removed from the majority of the campus, encouraging the public to play and enjoy the campus after hours and low visibility security screening have been incorporated into the building, creating clear connection and blending between interior and exterior in a safe inviting environment.





5 GRADE HOUSES

Each Grade House Includes

- 9 classrooms (Allowing overall scale of school to be brought down to a group of 240-280 students)
- Open Small Group Breakout Instructional Area
- 1 English Speaking other Languages (ESOL) Classroom
- Dedicated Storage & Restrooms
- Ability to secure entire classroom wing in the event of an emergency

Learning Environment:

An early challenge and discussion in planning meetings was how to reduce the scale of Philadelphia's largest elementary school of 1,400 students and improve the educational opportunities for children and increase instructional time. Early discussions began to materialize around "Grade Houses" within the school. Early space relationships were investigated to provide multiple scales of learning directly adjacent to each other, whether a teacher is focused in a traditional classroom environment, purposefully designed breakout space within the building's circulation or the opportunity to bring multiple classrooms together without having to move to cafeterias, gyms or large group instruction. This quick access encourages spontaneous opportunities.





Learning Environment:

The open collaborative area becomes the hub for each “Grade House”, the name was purposeful trying to scale each learning community to a more residential scale that was relatable for students that was discussed early with the community that was concerned with students being overwhelmed by the size of the school. Due to the organization of the school, no other grade needs enter another “Grade House” creating a clear community for the grade each year. Glazing was located between the classrooms and the hub to allow staff to monitor both their classroom and open space at the same time, “Eyes on the Street” for safety, but are also high enough that students sitting in classrooms are not distracted by activity occurring. Acoustics is controlled playfully through the use of clouds doubling sound absorption, again balancing the close proximity opportunities between program and allowing students to focus on their learning in a open daylit and flexible environment.

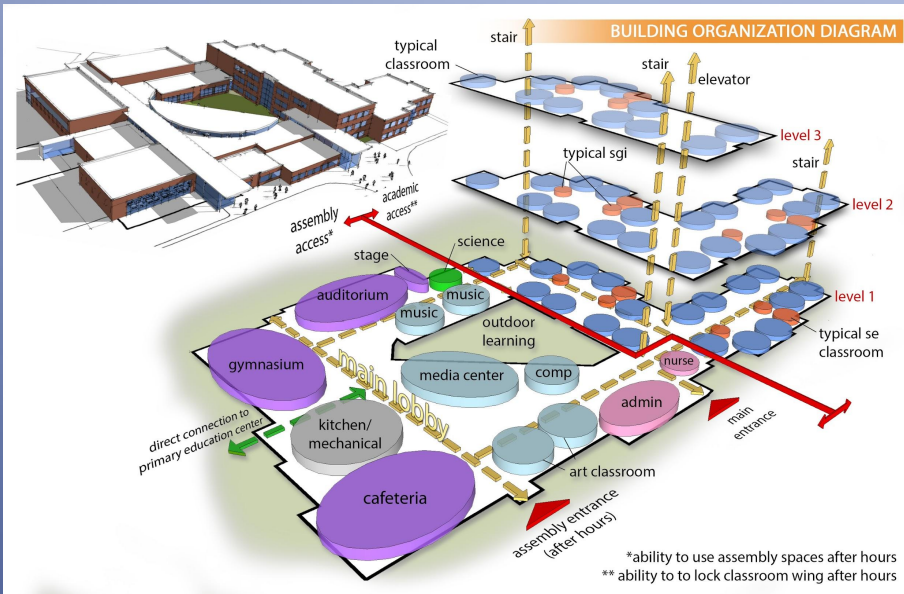




Learning Environment:

Within each "Grade House" is a dedicated English Speaking Other Languages (ESOL Classroom that can be divided into two small group instructional classrooms based upon programming, to support the 30% school population that receives break-out support daily with an extensive range of languages. Classrooms are flexible in nature with movable furniture and casework to adjust to students' needs. Daylighting is extensively used with more than 84% of all educational spaces being naturally daylighted along with exterior sun shading as shown in the above photo with south-facing glass that does not negatively affect instruction. Roller shading is available for audio visual, though, not needed extensively due to the school district's shift to interactive instructional boards in recent years that improve projection clarity for students.





100%

ANCHOR 1

of students will graduate ready for college or career

69%

ANCHOR 2

of 8-year-olds will read on or above grade level

36%

ANCHOR 3

of positions filled by great principals, teachers, and employees

97%

SY 18-19 EMPLOYEE FILL RATE

ANCHOR 4

of funding for great schools is secured with zero deficit

5 YEARS STRAIGHT

FOUR ANCHOR GOALS- SCHOOL DISTRICT

PROJECT PARADIGMS

- CAPETORIUM
 - DIRECT ACCESS TO PLAY AREA
 - DEDICATED SPACE (VS BEING IN ATRIUM)
- ADJACENCY OF KITCHEN TO CAFETERIA
- ADJACENCY OF RECEIVING TO KITCHEN
 - ∴ LOCATION OF KITCHEN, RECEIVING & CAFETERIA HAS TO BE CLOSE TO REC RECEIVING (CENTRAL RECEIVING)
- CONNECTION TO REC
 - DAILY USE BY STUDENTS/TEACHERS
 - SHARED USE OF SPACES
 - SHORT DISTANCE & CONNECTION (PER SPP)
- REC ACTS AS CLASSROOM WING
- DIRECT ACCESS TO ALL CLASSROOM WINGS FROM ASSEMBLY SPACES, HUB (DON'T WALK THROUGH CLASSROOM WING ETC.) - (REC CIRCULATION)
- NO VEHICULAR ACCESS FROM TYSON & BOSTWORTH
- CANNOT BUILD OVER EXISTING PLAY AREA
 - SITE MITIGATION
 - NO VEHICULAR ENTRY
- PRESERVING OF EXISTING BUILDING
- MINIMIZE BUILDING FOOTPRINT ON SITE TO MAXIMIZE GREEN SPACE/PARKING

EFFECTS OF BULLYING

- 3.2+ Million Students / Year
- 160K Students Skip School Daily
- 1 in 10 students drop out
- 71% of students report bullying

Planning Process & Learning Environment:

The above images are excerpts from early discussions with district design staff, school and community that show varied scales of concerns within The School District of Philadelphia. Discussions ranged from district wide anchor goals of improving reading levels at the elementary grades, organizational discussions of how best to separate the facility, pragmatic adjacencies that must be met and tested in option development and how to engage safety and security in the school. In this case, stressing the importance addressing bullying, by creating an open and inviting facility that allows staff to monitor all locations of the school. This continued fluctuation between scale and priority throughout design helped bring all stakeholders together.



Planning Process & Learning Environment: Regular Discussion of Teaching Models and Strategies beyond "Bricks and Mortar"
 ENVIRONMENT TO ENHANCE SKILLS USED BY TODAY'S LEARNERS (Hanover Research)

1st TIER

- Collaboration and teamwork
- Creativity and imagination
- Critical thinking
- Problem solving

2nd TIER

- Flexibility and adaptability
- Global and cultural awareness
- Information literacy
- Leadership



OFFICE OF CAPITAL PROGRAMS
THE SCHOOL DISTRICT OF PHILADELPHIA

Solomon Solis-Cohen Elementary School COMMUNITY MEETING



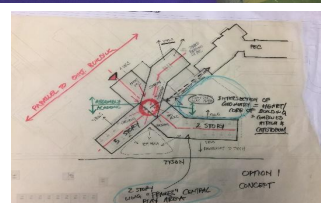
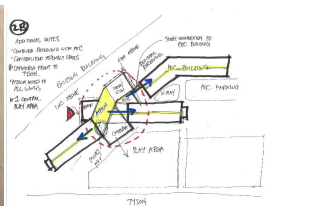
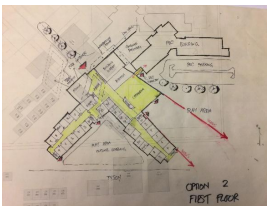
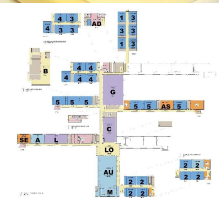
Join us for a project kickoff to introduce and
present the design of the new school!

Monday, March 26, 2018 at 5:30 p.m.

7001 Horrocks St.
Philadelphia, PA 19149



FOR MORE INFORMATION, PLEASE CALL 215-400-4730



مكتب برامج الأساسيات
منطقة فيلادلفيا التعليمية

مدرسة سولومون سوليس-كوهين الابتدائية اجتماع المجتمع
الاثنين 26 مارس 2018
الساعة 5:30 مساءً

جدول الأعمال

- الترحيب: Micheline Seriani
- عرض الاجتماع: Micheline Seriani
- مقدمة: مكتب برامج الأساسيات
- نظرة عامة للمشروع
- مقدمة لممثل منظمة المجتمع المسجلة (RCO) Reynolds Building Solutions
- مقدمة من مدير البناء: Associates Architects & Crabtree, Rohrbaugh
- مقدمة مهندس التصميم المعماري: Jeff Straub (Associates Architects & Crabtree, Rohrbaugh)
- عرض التصميم:
 - خطة الموقع وخطة الطابق - وجهات النظر في الشارع ومنظر الداخلية
 - الفرص التعليمية
 - البيئة الخارجية
 - الحدائق الزمنية
 - التصميم
 - تصاريح تقديم المخطط والبناء
 - البناء
 - مراحل المشروع
 - التكاليف والإنفاق أثناء البناء

المنطقة وأجهزة: Associates Architects & Crabtree, Rohrbaugh
ومكتب برامج الأساسيات
خاتمة الاجتماع: Associates Architects & Crabtree, Rohrbaugh
ومكتب برامج الأساسيات

Translation & Interpretation Center (3/2018)

Solis-Cohen Project Agenda (Arabic)

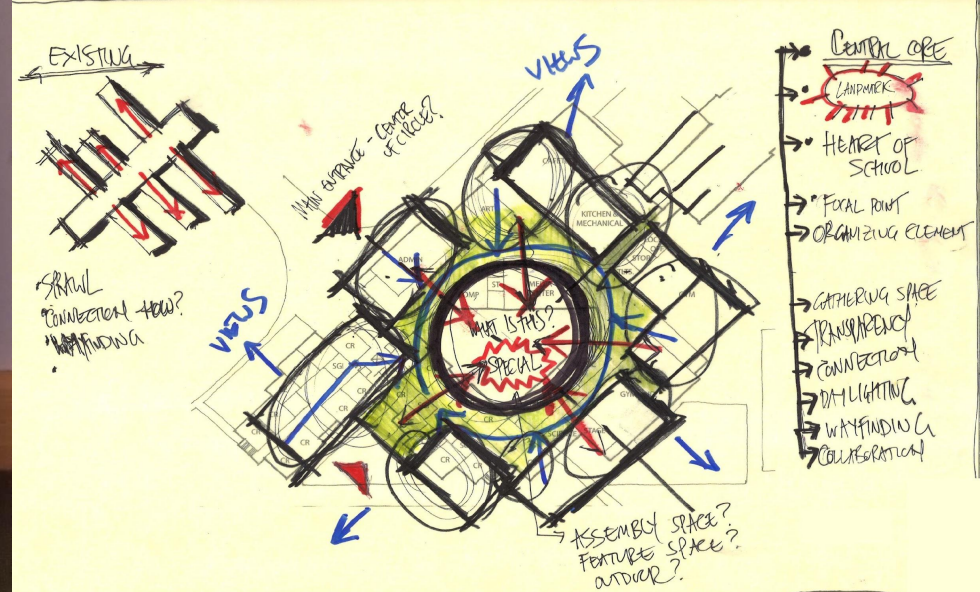
Planning Process:

The planning process utilized a wide range of methods to discuss how to create an educational environment that reflects the hopes of Solomon Solis-Cohen Elementary and its community. These included but were not limited to:

- Biweekly planning meetings over a six month visioning period.
- regular school staff workshops and visual listening exercises.
- 6 Community Meetings, Charrettes and City Art Commission Participation.



- SIMILAR CLASSROOMS CLOSE TOGETHER
- CIRCULATION AROUND GYM SHOULD BE MORE EFFICIENT
- DREARY HALLWAYS, TOO SMALL
- AUXILIARY GYM/INDOOR SPORTS IMPROVED
- INTERSECTIONS - CAFETERIA
- AUDITORIUM - ACOUSTICS/CAPACITY
- COLLABORATIVE SPACE
- MUSIC PRACTICE MODULES - TOO SMALL
- EASIER ACCESS TO AUDITORIUM FROM MUSIC
- CLASSROOMS
- COURTYARD USE EXTERIOR SPACES
- SPORTS FACILITIES



Planning Process:

Staff workshops developed "Guiding Principles & Priorities", identified concerns that had to be met in a new facility, discussed at times what could and could not be accomplished as part of the project and most importantly gave everyone a "Voice" to be heard in an inviting environment. This format strengthened the overall design but also brought teachers, principles, parents, community leaders and members together in a format that allowed divergent conversations to occur regularly. It was often discussed design is not a straight line, the principles allowed multiple options to be tested including most notably "Grade Houses", Flexibility and Multi-Use of Program Space to expand opportunities within a set budget, Future of Education in the Solomon Solis-Cohen Community and Core Shared Space, both school and community.

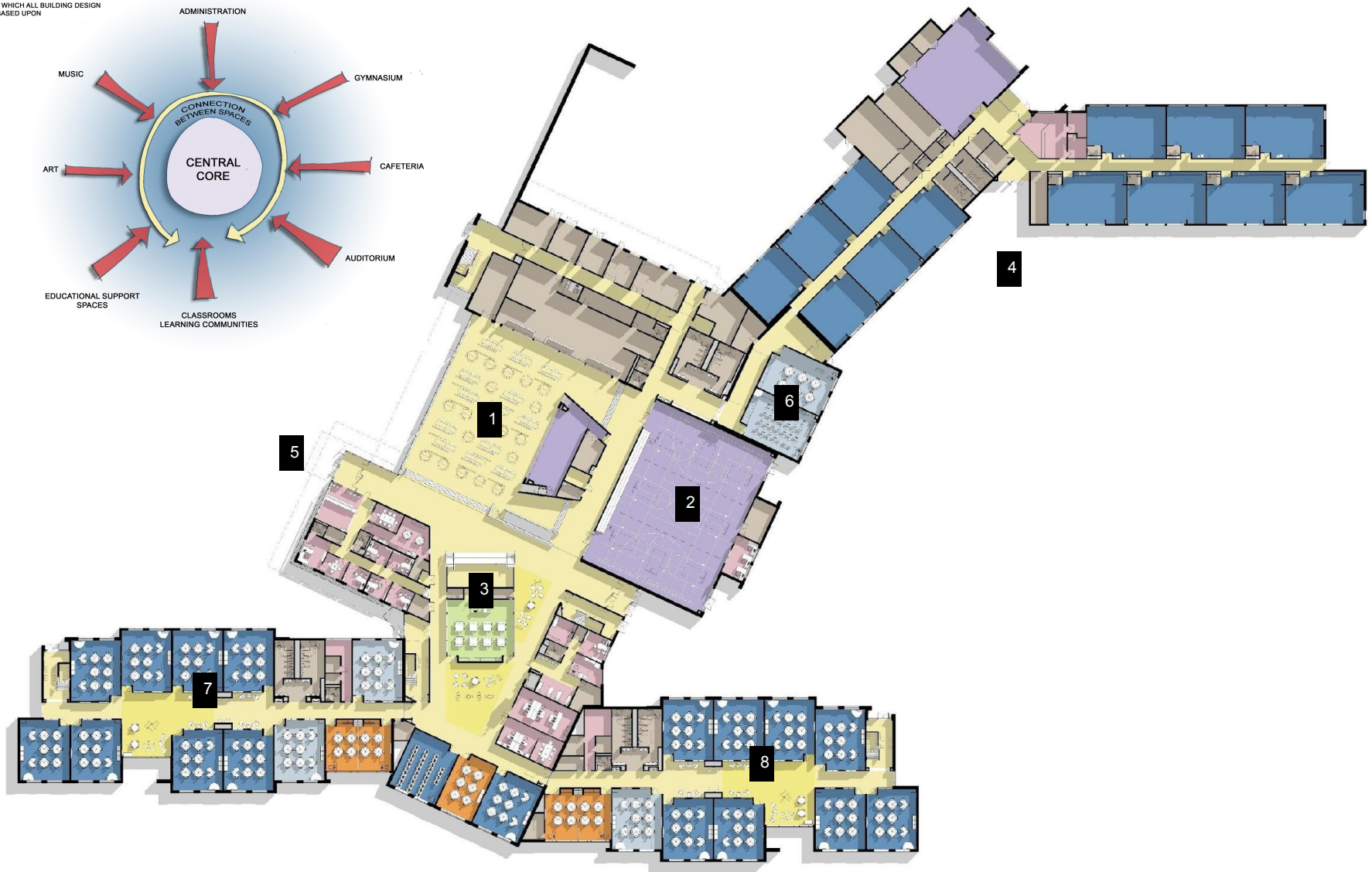
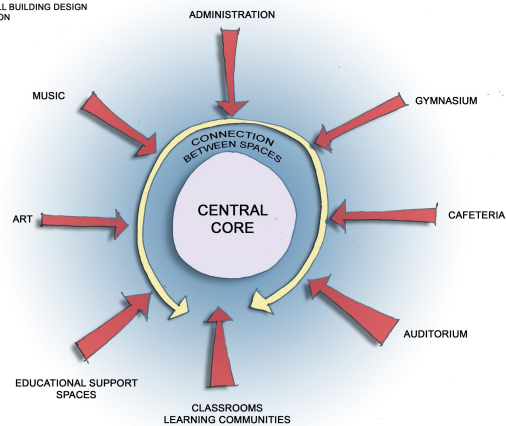


1

Planning Process:

An early priority that came out of the planning process was multi-use space teamed with a center core of the school. On a fixed budget, how could we achieve multiple program spaces and bring the entire student body of 1,400 students together within the core of the building. This was achieved by breaking the groups into three distinct large groups, with a Cafetorium, Learning Stair and Gymnasium, each accommodating up to 500 students. In this way the entire student body could be maintained before and after school, both visually, acoustically and pragmatically. Creating the close proximity of the spaces was an expanded version of the organization within the “Grade Houses”.





First Floor Plan

- | | | | |
|----|-----------------------------------|----|--------------------|
| 1. | Cafetorium | 7. | Fifth Grade House |
| 2. | Gymnasium | 8. | Fourth Grade House |
| 3. | Learning Stair | | |
| 4. | Existing Primary Education Center | | |
| 5. | Main Entrance | | |
| 6. | Music | | |

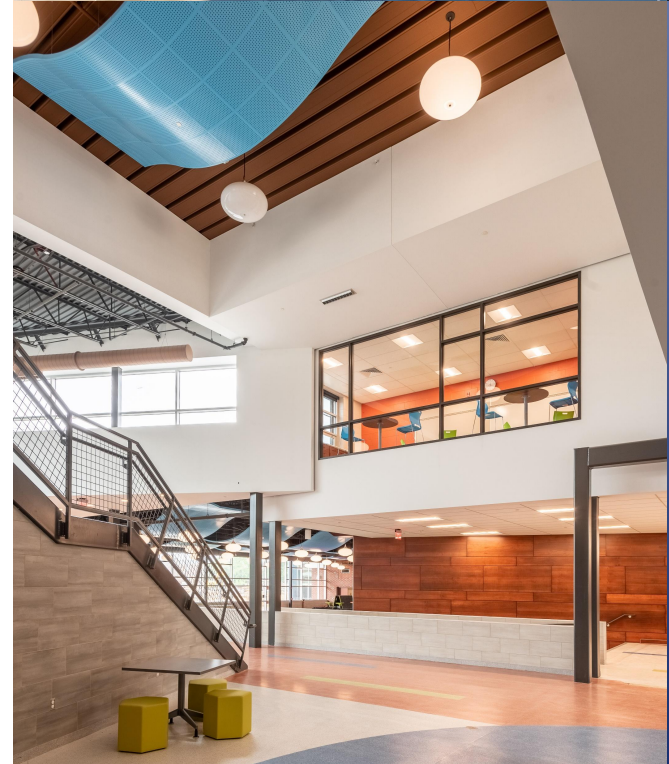




2

Planning Process:

The second of two primary core program spaces developing out of the planning process was the gymnasium. This space highlights features incorporated into all three program spaces including, daylighting, bringing daylight deep into the core of the school, straight forward construction practices for cost effectiveness, embrace of color to create a playful environment, ability to reorganize the space into multiple group sizing from 500 to class sizes of 30-60 and clear site lines to adjacent spaces to allow minimal staff monitor the entire student body when needed.



First Floor Plan

1. Learning Stair
2. Green Roof/ Outdoor Science
3. Open Library
4. First Grade House
5. Second Grade House
6. Third Grade House

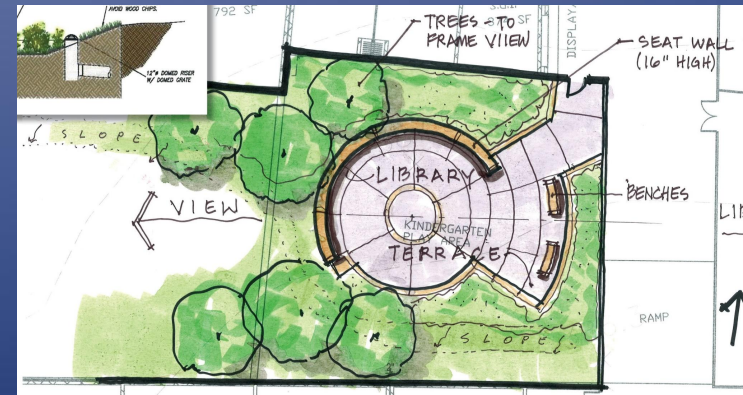
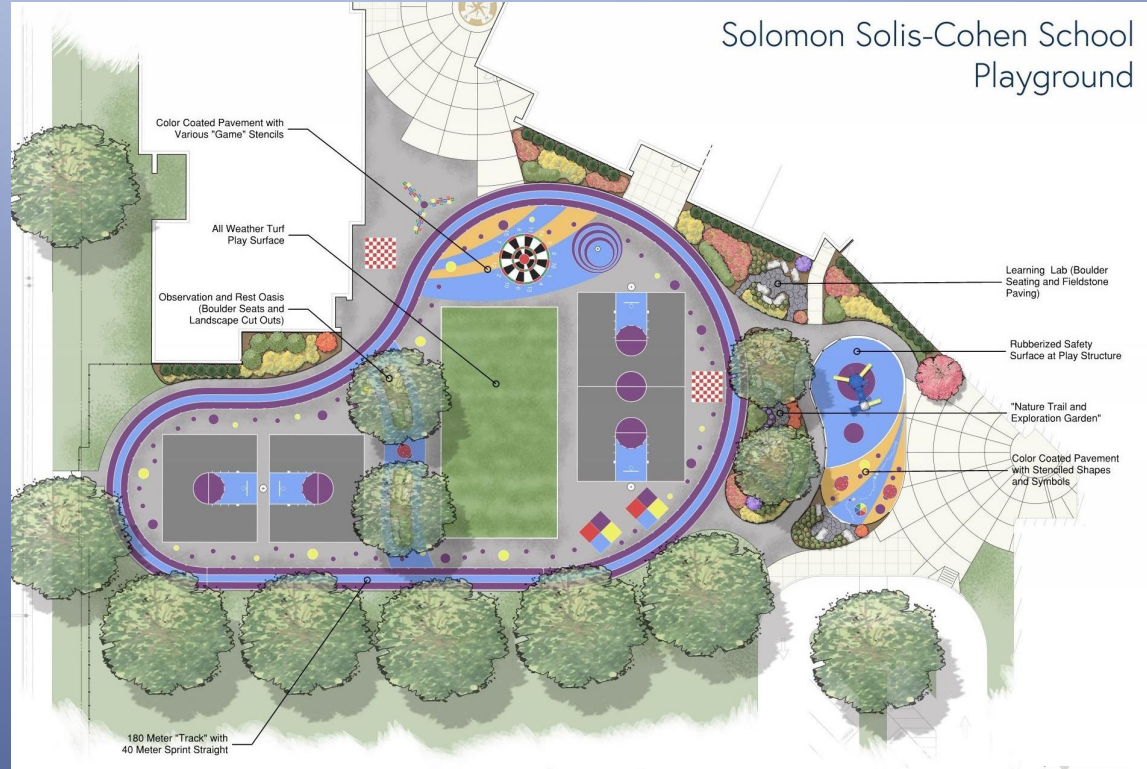




3

Planning Process:

The learning stair is the third core program space, directly adjacent and open to the cafetorium. The learning stair is first and foremost the main circulation artery to the 5 grade houses, and is also surrounded by the school administration, nurse, science classroom underneath the stair, art rooms on the second floor and library with open collaborative area on the second floor. Creating a centralized circulation element that interconnects 9 primary shared program spaces and is the gateway to the 5 “Grade Houses” was one of the largest challenges in the design process, but also becomes the signature element of how multifunctional program spaces can bring 1,400 students under one roof of 150,000 square feet.



Physical Environment:

Similar to the discussions of efficiency and scale within Solomon Solis-Cohen Elementary, early discussion on exterior play space challenged the design team to create a unique environment for students to play and bring the community together on the campus of the school. Within 1-1/2 acres. Discussions during design including creating boulder seating for small groups, a measured walking and running track, extensive alternative play opportunities from basketball courts, hopscotch, four square, life size chess, age appropriate play form the attached PreK and Kindergarten "Primary Education Center" and All Weather Turf that can resist the constant use of 1,400 students.





Physical Environment:

The final playground accomplishes the goals discussed during design and also becomes an additional gathering area for students to be dropped off or meet their families before and after school. 4' ornamental does protect this area of the campus, the only fenced region of the campus when complete. Creating territorial reinforcement when children are playing during school but in an open environment with Natural Surveillance that is not negatively separated from the surrounding community, also allowing the playground to be used after school hours.





Physical Environment:

Sustainability was a core goal for the project from the onset of planning. Building from The City of Philadelphia's Office of Sustainability begun in 2009, Solomon Solis-Cohen is anticipated to achieve LEED Platinum, reducing its overall energy use by nearly half of a conventional school in the United States.

46% Reduction in Energy Use and Utilization of Air Scrubbing Technology prior to COVID-19 for Indoor Air Quality.

Anticipated 36% reduction in water use beyond code standards.

236kW Solar Array generating over 20% of the facilities energy.

84% of all educational spaces naturally daylit and over 93% of all spaces having views to the surrounding neighborhood from windows.

Over 98% of stormwater run-off is held on campus and treated before being released to city water systems, critical in Philadelphia's Water Department supporting aged infrastructure.

Planned integration with city transportation, reduced parking, diversity of vegetation propagating a park environment for the dense surrounding neighborhood.

More than 95% of waste was recycled during construction.

VISION 1 	All Philadelphians have access to healthy, affordable, and sustainable food and drinking water	VISION 5 	All Philadelphians benefit from parks, trees, storm-water management, and healthy waterways
VISION 2 	All Philadelphians breathe healthy air inside and outside	VISION 6 	All Philadelphians have access to safe, affordable, and low-carbon transportation
VISION 3 	All Philadelphians efficiently use clean energy that they can afford	VISION 7 	All Philadelphians waste less and keep our neighborhoods clean
VISION 4 	All Philadelphians are prepared for climate change and reduce carbon pollution	VISION 8 	All Philadelphians benefit from sustainability education, employment, and business opportunities



IN THE KNOW

Inspiring the Next Generation of Sustainability Leaders

Motivated and involved young people are the foundation of a sustainable Philadelphia, today and tomorrow. Read on to find out how the School District of Philadelphia is leading on sustainability and what books might interest the budding environmentalist in your life.

Philadelphia's Green Ribbon School District

What does the GreenFutures plan have in store for Philadelphia public school students?

Last May the School District of Philadelphia was one of nine districts nationwide to receive the U.S. Department of Education's Green Ribbon Schools sustainability award. The award recognizes schools around the country committed to innovative efforts to reduce environmental impact and utility costs, improve health and wellness, and ensure effective sustainability education.

In Philadelphia, that means implementing the District's first-ever comprehensive sustainability plan, *GreenFutures*. The plan launched in 2016 and has already made progress across its five focus areas (see sidebar to the right). Stay tuned for the first annual GreenFutures Progress Report later this year, which will outline why it's no surprise the School District of Philadelphia is already receiving national recognition for its sustainability efforts. 🌱

PHOTO BY JENNA STAMPI COURTESY OF THE TRUST FOR PUBLIC LAND



Green schoolyards can transform the way children play, move, and learn. They also have a role in achieving the city's targets for sustainability, wellness, and stormwater management. A strong network of community leadership and resources is emerging in Philadelphia to support schoolyard transformation. To learn about resources to help you green your local schoolyard, check out the Community Design Collaborative's *Transforming Philadelphia's Schoolyards* guide.



For Solomon Solis-Cohen Elementary, education and community engagement occurred at all stages of design and the school was created to encourage and develop all aspects of sustainability into the daily life of the students.



Physical Environment:

Learning Opportunities for students connecting to sustainability are embedded into Solomon Solis-Cohen, building from City and School District initiatives for student projects, from raised gardens, pollinator gardens throughout the campus tied to rain gardens and a green roof that wraps an outdoor roof science classroom directly accessed from the learning stair at the core of the school.

To achieve the 46% energy reduction within the school a combination of high efficiency mechanical systems with air scrubbing technology, air barrier with increased R-Value building envelope, roof mounted solar and energy conservation within the school were utilized to create a building wide approach for efficiency.



Exhibition of School Planning and Architecture

Project Data

Submitting Firm :	Crabtree, Rohrbaugh & Associates
Project Role	Architect of Record
Project Contact	R. Jeffrey Straub, AIA, LEED Fellow, ALEP
Title	Principal / Studio Director
Address	401 East Winding Hill Road
City, State or Province, Country	Mechanicsburg, Pennsylvania
Phone	717.514.9826

Joint Partner Firm:	
Project Role	N/A
Project Contact	
Title	
Address	
City, State or Province, Country	
Planner on Record:	Crabtree, Rohrbaugh & Associates
Name	R. Jeffrey Straub & Arif Hasanbhai
Address	401 East Winding Hill Road
City, State or Province, Country	Mechanicsburg, Pennsylvania
Phone	717.514.9826
Email	jstraub@cra-architects.com

Construction Firm:	Ernest Bock and Sons Inc.
Project Role	General Contractor
Project Contact	
Title	
Address	
City, State or Province, Country	
Phone	

Exhibition of School Planning and Architecture

Project Details

Project Name	Solomon Solis-Cohen Elementary School
City	Philadelphia
State	Pennsylvania
District Name	The School District of Philadelphia
Supt/President	Dr. William Hite
Occupancy Date	November 2021
Grades Housed	First through Fifth Grades
Capacity(Students)	1,400 Students
Site Size (acres)	9.25 Acres
Gross Area (sq. ft.)	150,104 Square Feet
Per Occupant(pupil)	107 Square Feet/ Occupant
gross/net please indicate	Gross
Design and Build?	Design, Bid, Build
If yes, Total Cost:	\$52,438,193
Includes:	
Project Costs	
If no,	
Site Development:	\$7,695,318
Building Construction:	\$44,742,875
Fixed Equipment:	By Owner, Not Available
Other:	
Total:	\$52,438,193