



ASSOCIATES

Firm Profile

VJ Associates is a noted industry full service construction consulting firm with over 30 years of experience, providing cost estimating, value engineering, and scheduling services. Established in 1984, VJ Associates has a full time staff of over 50 cost estimators, project managers, schedulers, and support personnel with **multi-disciplinary backgrounds and diverse experience**. This ability to see the 'big picture' of a project from Concept through to Construction sets us apart from other cost estimating firms.

We provide a professional and accurate construction cost estimating service at all project stages from Feasibility Studies and Conceptual Designs to 100% Construction Documents. Our commitment to deliver superior service is demonstrated by our long-term relationships with major architectural, engineering, government, and construction clients.

VJ Associates has offices in New York, New Jersey, New England, Pennsylvania, and Washington DC.

The work for this project will be performed out of VJ Associates' New England office located at the following address:

VJ Associates of New England, Inc.
35 Highland Circle, Suite 200
Needham, MA 02494



ASSOCIATES

Project Approach - K-12 Schools

K-12 Schools is one of our top areas of practice, with over 150 completed projects ranging from classroom renovations, building upgrades, additions, and new construction. This depth of experience gives us a unique understanding of how to work with the design team and owners to develop budgets that satisfy fiscal and functional goals. We are also experienced at the cost estimate reconciliation process and work diligently and professionally with the other parties to derive an accurate and complete estimate for the owner.

Project Experience in Connecticut

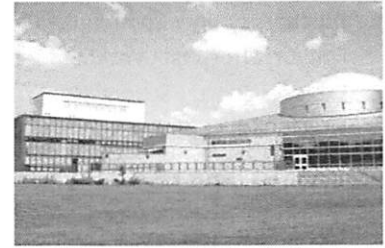
Giant Steps School Master Plan; Southport
Academy of Information Technology and Engineering (AITE) at Rippowam Campus; Stamford
Hamilton Avenue School Renovation and Expansion; Greenwich
UCONN Health Center Ambulatory Care Building Interior Fit-out; Farmington
Hartford Housing Test-fit Studies; Hartford
Hartford Intermodal Center Union Station Streetscape Works and Building Renovations; Hartford
Eastern Connecticut State University Shafer Hall Renovations; Willimantic
Greater Bridgeport Transit Bus Station Enhancements Phase 2
New Canaan Town Hall Addition and Renovation; New Canaan
West Haven VA Medical Center Combined Heat & Power System; West Haven
UCONN Fine Arts Building Exterior Envelope Renovation; Storrs
Assembly of God Expansion; Greenwich
Kent Memorial Library Renovation; Suffield
Connecticut State Colleges and Universities Master Plan; Statewide

Relevant Project Experience

Connecticut K-12 Schools

Academy of Information Technology at Rippowam Campus Stamford, CT

VJ Associates provided cost estimating services for this new 116,000 sf new inter-district public magnet high school constructed at the existing Rippowam Campus. Its primary use will be for technology with having mostly lab style classrooms. The classrooms will have 75% of the ceiling exposed to the structure above so that the students can visually see the “working” side of the building. The school will have a gymnasium, cafeteria w/full kitchen, and a Library. The roof over the library is a Kalwall “dome” roof to transmit light into the space.

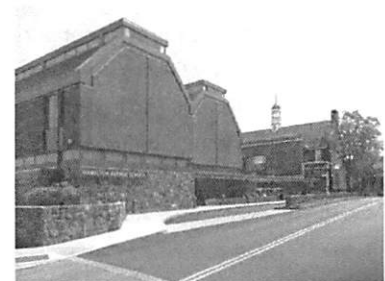


Client: Fuller & D'Angelo Architects

Construction Completion: 2011
Project value: \$36,500,000

Hamilton Avenue School; Greenwich, CT

VJ Associates provided cost estimating services for a new school to accommodate 480 students from Pre-K to 5th grade. The building site is a highly irregular polygon of approximately 4.429 acres in Greenwich, CT. The project includes 60,000 sf of new construction and 18,000 sf will be gutted internally, fully abated, and re-used as part of the new facility. This project is designed to meet the equivalent to a LEED Silver rating.



Client: Swanke Hayden Connell Architects

Construction Completion: 2008
Project Value: \$22,000,000

Giant Steps School Master Plan; Southport, CT

VJ Associates provided Master Plan cost estimating services for the renovation of two, two-story buildings to create a school for autistic children and young adults. The 35,906 sf educational building and a 19,678 sf student resource building and will include structural repairs, elevators, a green roof, a Healthy Living Program Outdoor Patio and Café, therapy rooms, restrooms, administrative offices, a young adult center, a technology center, a wellness center, occupational therapy suite, and clinical consultation suite. Additional campus site improvements include an event lawn, sports field, bleachers, a relocated basketball court, field house, playground, play structure, gardens, a nature center, wooded pathways, circulation paths, new landscaping, staff & tech center parking, drop off area, and site furnishings.



Client: Institute for Human Centered Design

Project Completion: 2012
Project Value: \$11,108,000



ASSOCIATES
A CONSTRUCTION CONSULTING FIRM

Projects With Perkins Eastman

Brandt and Connors Elementary Schools; Hoboken, NJ
Calvary Hospital Manhattan Satellite at Terence Cardinal Cooke Center; New York, NY
Carnegie Mellon University Medical Center Bard Hall; New York, NY
Dutchess County Community College Master Plan; Poughkeepsie, NY
Elmhurst Hospital Center Emergency Department Expansion; Queens, NY
Explorer Charter School; New York, NY
Forest Park Middle School Addition and Renovations; Springfield, MA
Great Meadows Correctional Facility; Comstock, NY
Julia Barnes Elementary School Addition and Renovations; Jersey City, NJ
Lower East Side Tenement Museum 4th and 5th Floor Stabilization; New York, NY
Lutheran Medical Center HEAL 15 Sunset Park and Sunset Terrace; Brooklyn, NY
Maimonides Medical Center Study; Brooklyn, NY
Martin Luther King Jr. New Net Zero School; Cambridge, MA
Memorial Sloan-Kettering Hospital 17th Floor Renovation; New York, NY
Mount Sinai Hospital Annenberg Hall Renovation; New York, NY
Nassau County Family and Matrimonial Courts Core and Shell; Mineola, NY
New York Psychiatric Institute Building #4 IT Upgrade; New York, NY
New York Rising Community (Housing Trust Fund Corporation) BayPark and Village of East Rockaway, South Valley Stream, and Staten Island East and South Shores; Long Island, NY
New York State St. Alban's Veterans Home; Jamaica, NY
NYPD Academy Needs Assessment; New York, NY
OCME Forensic DNA Lab at Bellevue Hospital Master Plan and Design Phase; New York, NY
Onassis Cultural Center Renovations; New York, NY
Phelps Memorial Hospital New Mixed-use Facility; Sleepy Hollow, NY
Queens Hospital Center Fire Pump Room; Queens, NY
St. John's Riverside Hospital Emergency Room Expansion; Yonkers, NY
St. Thomas Courthouse New Marshall's Office and HVAC Upgrades; St. Thomas, U.S. Virgin Islands
St. Vincent's Medical Center New Addition and Modernization; Bridgeport, CT
SUNY Downstate Medical Ambulatory Services Expansion; Brooklyn, NY
SUNY Farmingdale - Bioscience Incubator North Wing Lab Fit-out; Farmingdale, NY
SUNY New Palz Wooster Science Building; New Palz, NY
SUNY Old Westbury - Campus Center Rehabilitation; Old Westbury, NY
SUNY Purchase Police Department; Purchase, NY
SUNY Stony Brook University Simons Center for Geometry and Physics; White Plains, NY
The Dogwoods CCRC Jewish Home for the Elderly Assisted Living Facility; Munroe, CT
U.S. Land Port of Entry; Massena, NY
UCONN Health Center Ambulatory Care Center Building Interior Fit-out; Farmington, CT
UPenn Center for Advanced Medicine Schematic Estimates; Philadelphia, PA
Weill Cornell Medical College Outpatient Facility; New York, NY
Westchester Community College Student Center Expansion; White Plains, NY
William Patterson University Residential Zone Master Plan; Wayne, NJ



ASSOCIATES

Clive Tysoe, MRICS, CCP
Divisional Director/Project Manager

Education:

Salford University, 1988
Manchester, England
RICS Approved

Professional Affiliations:

Professional Associate of the Royal
Institution of Chartered Surveyors,
England

Association for the Advancement of
Cost Engineering – 2008

Experience:

VJ Associates of New England
Divisional Director
2011-present

VJ Associates of New Jersey
Senior Cost Estimator and
Divisional Director
2004-2011

VJ Associates Inc. of Suffolk
Senior Cost Estimator
2003 – 2004

Mr. Tysoe has over 35 years of experience in field inspection, design, construction management, scheduling, value engineering and general cost estimating in both public and private sectors. He has been with VJ Associates for nine years. From 2004 to 2011 Clive was Divisional Director of our New Jersey office. In 2011 Clive relocated to our New England office where he continues to excel in his performance as Divisional Director/Project Manager.

He regularly attends design meetings, coordinates all changes in scope of work with the client, and reviews all estimates prior to submission ensuring the highest standards of quality control. Clive acts as a liaison with architects and engineers to obtain all necessary information to provide accurate cost estimates and obtains current material pricing through constant vendor contact.

His projects have included schools, higher education facilities, laboratories, data centers, mission critical, residential, hospitals, and transit.

Relevant Projects:

Giant Steps School for Autism, Southport, CT

Chief Cost Estimator for the renovation of two existing buildings to create a school for autistic children and young adults. The program includes therapy rooms, wellness center, and general purpose classrooms.

Caleb Dustin Hunking School; Haverhill, MA

Chief Cost Estimator for a new co-located K through fourth lower school and upper school that will accommodate grades fifth through eighth. The new school will be approximately 148,000 sf, and it will be built upon the current ball fields of the existing Hunking School property.

Martin Luther King School – New Net Zero Energy School; Cambridge, MA

Chief Cost Estimator a new 186,314 sf structure to house both a lower school (grades pre-k through fifth) and upper school (grades sixth through eighth). Goals include energy efficiency, storm water control, and indoor environmental quality, and energy efficient mechanical systems.

MSBA Green Schools Program – Saltonstall Elementary School and Collins Middle School; Salem, MA

Chief Cost Estimator for the renovations and repairs to the building envelopes. Work included both roof repairs and new façade construction to improve energy efficiency.

Dighton Rehoboth Schools Accelerated Repairs; Dighton, MA

Chief Cost Estimator for the replacement of the existing roofing, insulation, flashing and other related substrate materials for three public schools, including an elementary, middle, and high school.

MSBA Green Schools Program – Kane Elementary School and Marlborough High School; Marlborough, MA

Chief Cost Estimator for the renovation of selected projects including HVAC upgrades and the replacement/renovation of fenestrations at both schools and a roofing replacement at the High School.



ASSOCIATES

Millis Public Schools Facilities Evaluation and Master Plan, Millis, MA

Chief Cost Estimator for the assessment of the physical plants and grounds of the district and make recommendations for replacement or renovation of structures, equipment, and systems as well as potential additions.

Lincoln Public Schools Master Plan, Lincoln, MA

Chief Cost Estimator for the feasibility studies and repairs analysis for the Town of Lincoln's elementary and middle school facilities.

Belmonte Middle School Renovation; Saugus, MA

Chief Cost Estimator for capital including new MEP/FP systems, exterior envelope replacement, and upgrades to interior finishes in the 160,000 sf building.

Chicopee Middle School Renovation; Chicopee, MA

Chief Cost Estimator for the renovation of a historic high school, built in 1920, and transforming it into a middle school. Renovations included the replacement of the HVAC, electrical and domestic water systems, ADA accessibility and increased the size of the cafeteria.

Atelier Ten

Stamford K-5 IB Interdistrict Magnet School

City of Stamford

All project work for the Interdistrict Elementary School extension to Rogers IB program will take place out of the Atelier Ten New Haven office. Our New Haven office address is below. We have a total of 51 full-time US employees.

Atelier Ten
Environmental Design Consultants + Lighting Designers
195 Church Street, 10th Floor
New Haven CT 06510
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F +1 (203) 773 1902
www.atelierten.com

atelier ten



Atelier Ten is a collaborative, interdisciplinary and innovative firm of environmental design consultants and lighting designers focused on delivering sustainability to the planned and built environment.

Our team's background in architecture, engineering, lighting design, environmental studies and urban design translates into a profound respect for architectural design and urbanism with an enthusiasm for working with emerging designers and established firms. Our core objective is to meet the needs of our clients by developing well-integrated buildings with simple systems that work with natural laws of physics to increase comfort, reduce energy consumption and contribute back to the greater environment.

We believe passionately in delivering a legacy of positive change. By recognizing and analyzing opportunities for improving energy efficiency, water conservation, material resources, and carbon emissions reductions, we provide integrated, full-service consulting on environmental design, building systems performance analysis, lighting and daylighting design, benchmarking, sustainable masterplanning, and inter-related services. Our broad and worldwide portfolio includes over one hundred fifty LEED projects, of which fifty-two have achieved Platinum or Gold status.

Atelier Ten has particular experience working with K-12 schools, improving overall building performance, indoor air quality, and designing ways in which to use the school itself as a teaching tool to educate students on sustainable design, all within the unique space limitations and program needs of different areas. We draw from our extensive knowledge of green building design principles, strategies, and analytical tools to advocate for creative, and practical design solutions, based on the cornerstones of sustainability, environmental integrity, economic viability and social wellbeing.

An international firm, Atelier Ten provides a seamless, integrated service, marked by accessibility, reliability and efficiency at every level. Founded in 1990 in London by a team of progressive engineers, we have since expanded, with offices in New York, New Haven, San Francisco, Glasgow, Sidney and Bangkok.

RELEVANT PROJECTS

Common Ground High School
NEW HAVEN, CT
LEED PLATINUM TARGET

Career Academy High School
WATERBURY, CT
LEED SILVER TARGET

Engineering & Science University Magnet School
NEW HAVEN, CT
CTHPB

International Baccalaureate School
HARTFORD, CT
LEED SILVER TARGET

Interdistrict Discovery Magnet School
BRIDGEPORT, CT
LEED GOLD TARGET

John F. Kennedy & Joseph A. DePaolo
Middle Schools
SOUTHINGTON, CT
CTHPB

Region 16 Elementary School
PROSPECT, CT
CTHPB

Sandy Hook Elementary School
NEWTOWN, CT
LEED GOLD TARGET

Troup Magnet Academy of Sciences
NEW HAVEN, CT

PERKINS EASTMAN COLLABORATIONS

George Mason University Prince William Campus
FAIRFAX, VA

George Mason University School of Nursing
FAIRFAX, VA

Irvington General Hospital Redevelopment
IRVINGTON, NJ

Memorial Sloan-Kettering Cancer Center and City University of New York Hunter College Science and Health Building
NEW YORK, NY

Interdistrict Discovery Magnet School

Svigals + Partners



3563

Blending green building principles, art and an overarching message about the Earth, the Interdistrict Discovery Magnet School reflects not only the curriculum, but also the community's commitment to living sustainably.

Atelier Ten worked closely with an integrated design team who were engaged with the sustainable design process, considered many ideas, and made informed decisions. As a result of daylighting, high efficiency energy systems, efficient lighting, and improved envelope, the school is 33.6% more efficient than a minimum compliant ASHRAE baseline building in terms of annual energy cost and 34.2% better in terms of annual site energy consumption.



DETAILS

LOCATION: BRIDGEPORT, CT
AREA: 63,000 SQ FT
DATE: 2011

SERVICES

ENVIRONMENTAL DESIGN
ENERGY ANALYSIS
BENCHMARKING: LEED
LIGHTING DESIGN

REFERENCE

JAY BROTMAN
SVIGALS + PARTNERS, LLP
84 ORANGE STREET
NEW HAVEN, CT 06510
203.786.5110
JBROTMAN@SVIGALS.COM

The classrooms make the most of windows, not only to bring views of the outside environment in, but also to incorporate daylight into educational areas. Daylighting offers the twin benefits of reducing the cost of electricity for artificial light and improving overall student performance. Other cost-effective features include solar power, stormwater retention and reuse, and recycled materials used in construction.



LEED GOLD TARGET

1 SUSTAINABLE SCHOOL

Part of the school's mission coupled with its adjacency to the Discovery Museum is to connect kids to nature through math and science.

2 PATHWAY TO NATURE

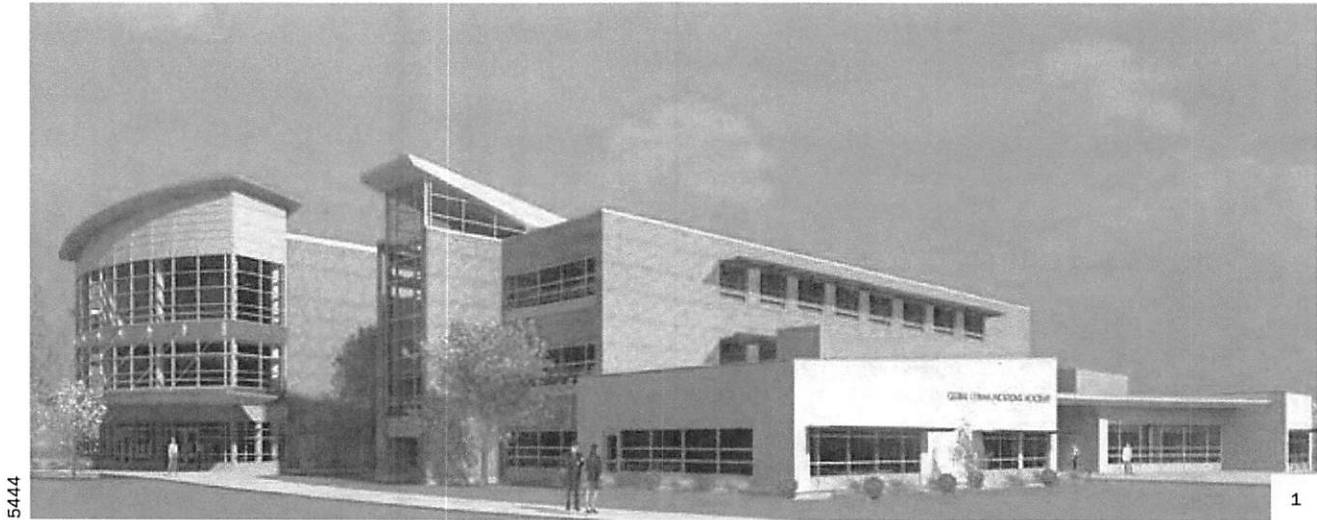
As you follow the gracefully flowing walls that were created by a curving floor plan, each step folds with it an organic turn that takes your eye right outside.

3 DAYLIGHT ANALYSIS

A result of Atelier Ten's sun path evaluation, was optimum computer orientation in the Media Center to avoid events of glare on the monitors.

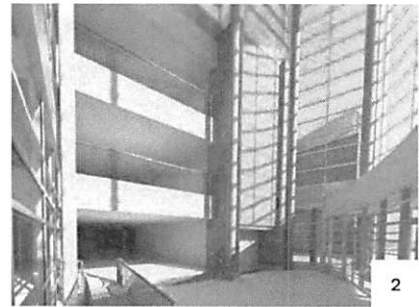
International Baccalaureate School

Fletcher Thompson



The renovation of the International Baccalaureate School in Hartford presented many opportunities to improve the environmental and energy performance of the building.

The school incorporates many energy efficient design strategies to meet the project target of reduced energy consumption and achievement of LEED certification. Primarily due to reduced lighting, space heating, cooling, and ventilation energy, the building is estimated to be 35% lower in annual energy use and 29.1% lower in annual energy cost compared to a minimally compliant ASHRAE 90.1-2007 building.



DETAILS

LOCATION: EAST HARTFORD, CT
AREA: 142,000 SQ FT
COST: \$44M
DATE: 2013

SERVICES

ENVIRONMENTAL DESIGN
ENERGY ANALYSIS
LEED PROGRAM ADMINISTRATION

REFERENCE

VIKAS NAGARDEOLEKAR
FLETCHER THOMPSON
160 TRUMBULL STREET, 4TH FL
HARTFORD, CT 06103
860.249.0888
VNAGARDEOLEKAR@FTAECOM

LEED SILVER TARGET

1 MATERIAL REUSE

The renovation project allowed for the reuse of the 75% of the building shell earning the project credit under the LEED Materials and Resources category.

2 DAYLIGHT ANALYSIS

Atelier Ten examined overshadowing points in the lobby in order to determine the shading effects of the West Building, shading options to reduce solar exposure on the westfacing lobby glazing, and daylight levels and distribution in the lobby, central atrium, and corridors in order to assess the effectiveness of the skylights and potential for reducing



Larry Jones

Associate Director | LEED AP BD+C

PROJECTS

Berkshire School Math & Science Center | SHEFFIELD, MA
CENTERBROOK ARCHITECTS & PLANNERS | LEED SILVER TARGET

Career Academy High School | WATERBURY, CT
CITY OF WATERBURY | LEED SILVER TARGET

Carrington Elementary School | WATERBURY, CT
CITY OF WATERBURY | LEED SILVER TARGET

Charter Oak International Academy | WEST HARTFORD, CT
PERKINS EASTMAN | LEED PLATINUM TARGET

Common Ground High School | NEW HAVEN, CT
GRAY ORGANSCHI | LEED PLATINUM TARGET

Engineering and Science University Magnet School | NEW HAVEN, CT
SVIGALS + PARTNERS | CT HIGH PERFORMANCE BUILDING

Guilford High School | GUILFORD, CT
TAI SOO KIM PARTNERS | CT HIGH PERFORMANCE BUILDING

Interdistrict Discovery Magnet School | BRIDGEPORT, CT
SVIGALS + PARTNERS | LEED GOLD

International Baccalaureate School | HARTFORD, CT
FLETCHER THOMPSON | LEED SILVER TARGET

Kohler Environmental Center, Choate Rosemary Hall | WALLINGFORD, CT
ROBERT A.M. STERN ARCHITECTS | LEED PLATINUM

Maloney High School | MERIDEN, CT
FLETCHER THOMPSON | CT HIGH PERFORMANCE BUILDING

Region 16 Elementary School | PROSPECT, CT
FLETCHER THOMPSON | CT HIGH PERFORMANCE BUILDING

Sandy Hook Elementary School | SANDY HOOK, CT
SVIGALS + PARTNERS | LEED GOLD EQUIVALENT

Wallace Middle School | WATERBURY, CT
NEWFIELD CONSTRUCTION | CT HIGH PERFORMANCE BUILDING

TEACHING

Guest Critic | YALE UNIVERSITY, 2007-PRESENT
Guest Lecturer | UNIVERSITY OF NEW HAVEN, 2009

PRESENTATIONS

Trials of Designing a Living Building in Cold Climates | GREENBUILD, SAN FRANCISCO, 2012
Metrics and Integrated Laboratory Design: The LEED Platinum Dartmouth Life Science Center | LABS21, SAN JOSE, 2012
Climatic Design | MID-TN AIA, NASHVILLE, 2012
Earth Shelter Design | CT AIA, NEW HAVEN, 2011
LEED Design Tips and Tricks: Demystifying Key Credits to Achieve Great Design + Great Ratings | AIA CONVENTION, MIAMI, 2010
International Green Building Methods + Regulations: Lessons Learned from Around the World | AIA CONVENTION, MIAMI, 2010
Yale Rolls Sustainability Into Technology Buildings One Renovation Project at a Time
TRADELINER CONFERENCE, SAN ANTONIO, 2009

Through Larry's leadership, Atelier Ten has expanded its portfolio of ultra high-performance projects, and has further developed in-house proficiency and design tools for delivering these projects. As the firm's environmental design practice leader, he is instrumental in strengthening Atelier Ten's expertise in the cultivation of creative, practical and appealing design solutions.

EDUCATION

BS ENVIRONMENTAL ENGINEERING
SYRACUSE UNIVERSITY, 1998

EXPERIENCE

ATELIER TEN
2006-PRESENT

THE RETEC GROUP, INC.
SR PROJECT MANAGER, 1998-2006

AFFILIATIONS

AIA CONNECTICUT
AFFILIATE MEMBER

US GREEN BUILDING COUNCIL
LEED ACCREDITED PROFESSIONAL BD+C



Environmental Design Consultants + Lighting Designers
atelier.ten.com

Marta Bouchard

Associate LEED AP BD+C

PROJECTS

Bellas/Dixon Math and Science Center, Berkshire School Sheffield, MA
CENTERBROOK ARCHITECTS & PLANNERS | LEED SILVER TARGET

Bishop Woods School, New Haven, CT
JCJ ARCHITECTURE

Burgundy Farm Country Day School, Alexandria, VA
TURNER BROOKS ARCHITECTS

Common Ground High School, New Haven, CT
GRAY ORGANSCHI ARCHITECTURE | LEED PLATINUM TARGET

Dover Public Library, Dover, DE
HOLZMAN MOSS BOTTINO ARCHITECTURE | LEED SILVER TARGET

Guilford High School, Guilford, CT
TAI SOO KIM PARTNERS | CT HIGH PERFORMANCE BUILDING

New Haven Academy, New Haven, CT
BL COMPANIES

Gentry Hall, University of Connecticut, Storrs, CT
SVIGALS + PARTNERS | LEED SILVER

Greenberg Conference Center, Yale University, New Haven, CT
ROBERT A.M. STERN ARCHITECTS | LEED GOLD

Greenfield Trial Court, Greenfield, MA
LEERS WEINZAPFEL ASSOCIATES | LEED SILVER TARGET

Harvard Square Branch, Harvard University, Cambridge, MA
RBS CITIZENS BANK | LEED GOLD

Integrated Design Building, University of Massachusetts Amherst, Amherst, MA
LEERS WEINZAPFEL ASSOCIATES | LEED SILVER

Laboratory of Epidemiology and Public Health, Floors 6/7, Yale University, New Haven, CT
TLB ARCHITECTURE | LEED GOLD TARGET

Shepherd University Center for Contemporary Arts | Shepherdsville, WV
HOLZMAN MOSS BOTTINO ARCHITECTURE | LEED SILVER TARGET

Smarter Travel/FlipKey, Boston, MA
BAKER DESIGN GROUP | LEED GOLD

Southern Kentucky Performing Arts Center, Bowling Green, KY
HOLZMAN MOSS BOTTINO ARCHITECTURE | LEED SILVER

Stoeckel Hall, Yale University, New Haven, CT
CHARNEY ARCHITECTS | LEED GOLD

Trip Advisor, New York, NY
BAKER DESIGN GROUP

PRESENTATIONS

Driving Environmental Stewardship: The Built Environment for Higher Education
KNOLL ASSOCIATES, 2014

Green Buildings: The Cost of LEED & LCCA
ESPN FACILITY MANAGEMENT, 2013

LEED & the Credential Maintenance Program: A Roadmap for Today and Tomorrow
CONNECTICUT GREEN BUILDING COUNCIL, 2010

Design for Deconstruction & Construction Waste Management: Salvage-Reuse-Recycle
AIA CONNECTICUT, 2009

With over a decade of experience in the field of high-performance building design, Marta is an accomplished environmental designer and manages projects that integrate sustainable design principles with an emphasis on the human experience based on her background in interior design and architecture.

EDUCATION

BS DESIGN AND ENVIRONMENTAL ANALYSIS
CORNELL UNIVERSITY, 2004

EXPERIENCE

ATELIER TEN
2007-PRESENT

NEWMAN ARCHITECTS
DESIGNER, 2005-2007

TECTON ARCHITECTS
DESIGNER, 2004-2005

AFFILIATIONS

AIA CONNECTICUT
COMMITTEE ON THE ENVIRONMENT
ASSOCIATE MEMBER

CONNECTICUT GREEN BUILDING COUNCIL
BOARD OF DIRECTORS, 2012-PRESENT
EDUCATION COMMITTEE, CO-CHAIR, 2011-PRESENT

US GREEN BUILDING COUNCIL
LEED ACCREDITED PROFESSIONAL

CERTIFICATIONS

URBAN GREEN COUNCIL
GREEN PROFESSIONAL (GPRO) CERTIFICATE HOLDER :
BUILDING GREEN (FUND),
CONSTRUCTION MANAGEMENT (CM),
OPERATIONS + MAINTENANCE (O+M)

URBAN GREEN COUNCIL
GREEN PROFESSIONAL (GPRO) INSTRUCTOR:
BUILDING GREEN (FUND),
CONSTRUCTION MANAGEMENT (CM),
OPERATIONS + MAINTENANCE (O+M)

NATIONAL COUNCIL FOR INTERIOR DESIGN
QUALIFICATION

Acentech



ACENTECH

Company Profile

Whether you're looking to perfect the acoustics of a performance space, for cutting-edge technology design, or to quiet a noisy product, Acentech is your resource. We provide acoustics, audiovisual, information technology, security, and vibration consulting to clients across the US and beyond.



Acentech is a multi-disciplinary acoustics, audiovisual, and vibration consulting firm with offices in Massachusetts, Pennsylvania, and California. As the direct descendant of the highly regarded Bolt Beranek and Newman (BBN) acoustics consulting group, Acentech is one of the oldest and largest organizations of its type, an unequalled resource to institutions, engineers, manufacturers, architects, planners, and designers worldwide.

Acentech's multi-disciplinary team brings extensive experience to critical areas of the design - architectural acoustics, mechanical systems noise and vibration control, environmental noise, audiovisual and multimedia systems, and wired and wireless voice and data networking.

Whether you are looking to perfect the acoustics of a performance space, to offer cutting-edge technology design, or to quiet a noisy product, Acentech is your resource. We provide comprehensive consulting in architectural acoustics, noise and vibration mitigation, audiovisual systems, and information technology to public and private K-12 education facilities. In addition to the acoustical design of auditoria and music suits, we offer guidance for sustainable design practices and materials. Our staff is knowledgeable in acoustical criteria and state regulations for K-12 spaces. We work with clients' teams to create environments conducive to teaching, learning, research, and campus living.



CONSULTING SERVICES

- > Architectural Acoustics
- > Audiovisual System Design
- > Building Dynamics
- > IT Infrastructure and Planning
- > Mechanical System Noise and Vibration Control
- > Product Noise and Product Sound Quality
- > Transportation, Environmental, and Industrial Acoustics



Mid-Atlantic Office
8 Interplex Drive
Suite 218
Trevose, PA 19053
215 245 8244

Headquarters
33 Moulton Street
Cambridge, MA 02138
617 499 8000
acentech.com

West Coast Office
601 South Figueroa Street
Suite 4050
Los Angeles, CA 90017
213 330 4237



K-12 Schools

- › Arts Magnet Middle School
New Haven, CT
- › Barnum Pre-K-8 Grade School
Bridgeport, CT
- › Benjamin Jepson School
New Haven, CT
- › Bloomfield Early Childhood Magnet School
Bloomfield, CT
- › Bloomfield High School
Bloomfield, CT
- › Bridgeport Multi Magnet High School
Bloomfield, CT
- › The Brunswick School
Greenwich, CT
- › Catherine Kolnaski Elementary School
Groton, CT
- › Center Road School
Vernon, CT
- › Choate Rosemary Hall School
Wallingford, CT
- › Classical Magnet School
Hartford, CT
- › Crosby High School
Waterbury, CT
- › Daniel Hand High School
Madison, CT
- › Darien High School
Darien, CT
- › Duggan Elementary School – Waterbury
Hartford, CT
- › Discovery Magnet School
Bridgeport, CT
- › Essex Elementary School
Essex, CT
- › Fairfield Country Day School
Fairfield, CT
- › Fitch High School
Groton, CT
- › Freeman Hathaway School
Groton, CT
- › Glastonbury High School
Glastonbury, CT
- › Goodwin College Early Childhood Magnet School
East Hartford, CT
- › Greenwich Academy
Greenwich, CT
- › Green Farms Academy
Green Farms, CT
- › Hartford Journalism and New Media High School
Hartford, CT
- › H.C. Wilcox Technical High School
Meriden, CT
- › Kelly Middle School
Norwich, CT



K-12 Schools

- › Lincoln Middle School
Meriden, CT
- › Litchfield School
Litchfield, CT
- › Loomis Chaffee School
Winsor, CT
- › Louis Toffolon Elementary School
Plainville, CT
- › Martin Luther King Junior School *
Cambridge, MA
- › Manchester Head Start School
Manchester, CT
- › Masuk High School Auditorium
Monroe, CT
- › McKinley Elementary School
Fairfield, CT
- › Mill Road School and Wintergreen
Intermediate Magnet School
North Haven, CT
- › North Haven Middle School *
North Haven, CT
- › North Main Street Elementary School
Waterbury, CT
- › Norwich Free Academy
Norwich, CT
- › Plainville High School Renovation
Plainville, CT
- › Plainfield New High School
Plainfield, CT
- › Ridgebury Elementary School
Ridgebury, CT
- › Salisbury School Athletic Center
Salisbury, CT

* Projects completed with
Perkins Eastman Architects



**Ioana Pieleanu****Senior Consultant****Full-Time Regular Employee****EDUCATION**

M.S. Building Sciences – Architectural Acoustics, Rensselaer Polytechnic Institute, 2004

B.A. Music Production & Sound Engineering, Berklee College of Music, 2001

Music Theory and Education, Universitatea de Muzica, Bucharest, 1998

PROFESSIONAL POSITIONS

Acentech Incorporated, 2004-present

Rensselaer Polytechnic Institute, Research Assistant, 2003-2004

7A West Recording Studios, Sound Engineer, 2001-2003

Berklee College of Music, Video/Audio Production, 1998-2001

ProTV Romania, Stage Manager, 1996-1998

EXPERIENCE AND RESPONSIBILITIES

Ioana Pieleanu's acoustics expertise encompasses room acoustics, sound isolation and mechanical systems noise and vibration control. She consults on a variety of projects such as performing arts centers and music schools, auditoria, recording studios/critical listening spaces, university buildings as well as other types of institutional, residential or commercial facilities. Her consulting routine uses classical acoustics concepts and methods combined with the latest computer modeling technology.

In addition, Ioana is an accomplished musician, with over 20 years of piano and music studies.

PROFESSIONAL SOCIETIES

Member, Acoustical Society of America

Assoc. Member, Institute of Acoustics UK

LANGUAGES

English, French, Spanish, Italian, Romanian

REPRESENTATIVE CONSULTING PROJECTS

> K-12 (LEED/CHPS Design)

Boston College High School, Boston, MA

Carr School, Newton, MA

Discovery Magnet School, Bridgeport, CT

Ethel Walker School, Simsbury, CT

Fairfield Elementary School, Fairfield, CT

JFK Middle School, Hudson, MA

Longmeadow High School, Longmeadow, MA

Natick High School, Natick, MA

Naugatuck High School, Naugatuck, CT

Saint Paul School, New Math & Science Building, Concord, NH

Sandy Hook Elementary School, Newton, CT

West Bristol High School, Bristol, CT

Westfield Model Elementary School, Westfield, MA

Willard Elementary School, Concord, MA

Wake County Justice Center, Raleigh, NC



ACENTECH

33 Moulton Street
Cambridge MA 02138
617 499 8000
acentech.com

Acentech Employee Count

Professionals	Full-Time	39
	Part-Time	9
		48
Office/Clerical	Full-Time	6
	Part-Time	1
		7
Total	Full-Time	45
	Part-Time	10
		55

Foodservice Facilities International

FIRM SUMMARY/EXPERIENCE

Formed in 1989, Foodservice Facilities International, located at 137 Elm Place in New Canaan, Connecticut, is the only major foodservice planning firm with a thorough grounding in both the architectural process *and* the construction process; we are designers trained in the technology and flow required for food production. FFI's principal, Neele-Banks Stichnoth, has over 36 years of experience in foodservice design.

FFI is a sole proprietorship, and its organizational philosophy centers around a single idea: that the principal that starts a given project follows it through to completion. We retain two experienced technical people as our workload requires.

Our approach focuses on identifying our Client's needs and meeting them within the context of the overall project, right from the start. This means calculating accurate preliminary technical information for square-footage breakdowns and MEP loads. Once we determine the physical needs, we follow through and complete project phases on time and on budget.

Relevant Projects:

- Brunswick Lower School, Greenwich, Connecticut
- Brunswick Middle School, Greenwich, Connecticut
- Burr Street Elementary School, Fairfield, Connecticut
- Charter Oak International School, West Hartford, Connecticut
- Convent of the Sacred Heart Upper and Lower School, New York, New York
- CREC International Magnet School, Windsor, Connecticut
- Glenville Elementary School, Greenwich, Connecticut
- IS 125Q, Queens, New York
- North Haven Middle School, North Haven, Connecticut
- Notre Dame Academy, Staten Island, New York
- PS-106X, Bronx, New York
- PS-292X, Bronx, New York
- PS-3, Manhattan, New York
- St. Hilda's & St. Hugh's School, New York, New York

Project Experience with Perkins Eastman

- Charter Oak International School, West Hartford, Connecticut
- CREC International Magnet School, West Windsor, Connecticut
- Danbury Early Childhood Center, Danbury, Connecticut
- Fairfield-Ludlowe High School, Renovations, Fairfield, Connecticut
- Glenville Elementary School, Glenville, Connecticut
- Housatonic Community College, Bridgeport, Connecticut
- North Haven Middle School, North Haven, Connecticut
- Westchester Community College, Cafeteria, Cafe and Culinary Center, Valhalla, New York
- 750 Washington Cafe, Stamford, Connecticut
- Beiersdorf Inc., Wilton, Connecticut
- Burning Tree Country Club, Greenwich, Connecticut
- GE Finance, Stamford, Connecticut
- Pepperidge Farm Culinary Innovation Center, Norwalk, Connecticut
- Pepperidge Farm Employee Cafe, Norwalk, Connecticut
- Shippan Landing Amenities Building, Stamford, Connecticut
- Westport Center for Senior Activities, Westport, Connecticut

RESUME

Neele-Banks Stichnoth

Neele-Banks Stichnoth is the principal responsible for foodservice design. Prior to forming Foodservice Facilities International, Ms. Stichnoth was the in-house foodservice specialist for Skidmore, Owings & Merrill, New York. As an Associate, she headed the foodservice design team, providing foodservice planning services to all SOM's offices throughout the country and in London. Ms. Stichnoth has been a foodservice planner for 36 years and with FFI for 25 years.

Education: Smith College, Northampton, Massachusetts
Bachelor of Arts

Foodservice Facilities International, New Canaan, CT
1989 - Present Position: Principal

450 Mamaroneck Avenue, Harrison, New York
750 Washington Cafe, Stamford, Connecticut
1130 Fifth Avenue, New York, New York
Avon Products, Inc., New York, New York
American Center for Physics, College Park, Maryland
Bank of Montreal Institute for Learning, Ontario, Canada
Beiersdorf Inc., Wilton, Connecticut
Bertelsmann Inc., New York, New York
Bloomberg News, Princeton, New Jersey
Brunswick Lower School, Greenwich, Connecticut
Brunswick Middle School, Greenwich, Connecticut
Burning Tree Country Club, Greenwich, Connecticut
Bvlgari Cafe, New York, New York
Carnegie Hall Rooftop Dining, New York, New York
Charter Oak International School, West Hartford, Connecticut
Chase Manhattan Bank, Traders' Floors, New York, New York
Chelsea Piers, New York, New York
Citicorp @ Court Square, Long Island City, New York
Citigroup Executive's Office, New York, New York
Clearview Golf Course, New York, New York
Convent of the Sacred Heart Upper School, New York, New York
Convent of the Sacred Heart Lower School and Catering Facility, New York, New York
Cornell University Medical College, Education Center, New York, New York
CREC International Magnet School, West Windsor, Connecticut
Ellerslie Museum of Trenton, Trenton, New Jersey
First Presbyterian Church, Greenwich, Connecticut
General Electric Company, Headquarters Renovation, Fairfield, Connecticut
General Electric Company, Crotonville Campus, Ossining, New York
GE Energy Financial Services, Stamford, Connecticut
General Motors Corporation, New York, New York
Glenville Elementary School, Greenwich, Connecticut
Heritage Inn Renovation, Southbury, Connecticut
Housatonic Community College Renovations, Bridgeport, Connecticut
Hudson's, Grandville, Michigan

RESUME

IBM Palisades, Palisades, New York
IBM Learning Center, Armonk, New York
IS125Q, Queens, New York
Kohlberg Kravis Roberts & Company, New York, New York
Lapham Community Center, New Canaan, Connecticut
L'Occitane O & Co Café, New York, New York
Marriott Courtyard, 866 Third Avenue, New York, New York
Marshall Field's State Street Store, Chicago, Illinois
Metropolitan Opera House, Performers' Café, New York, New York
National Basketball Association (NBA), New York, New York
New York Hotel Trades Council and Hotel Assoc. of NYC, Training Facility, NY
New York Mercantile Exchange, New York, New York
New York Post, New York, New York
New York Stock Exchange Traders' Servery Renovation, New York, New York
New York Stock Exchange Kitchen Renovation, New York, New York
NFL, Films, Mt. Laurel, New Jersey
North Haven Middle School, North Haven, Connecticut
Notre Dame Academy, Staten Island, New York
Pelham and Split Rock Golf Courses, New York, New York
Pepperidge Farm Inc., Norwalk, Connecticut
Pepperidge Farm Culinary Innovation Center, Norwalk, Connecticut
Pitzer College, Claremont, California
PS 106, Bronx, New York
PS 113, Queens, New York
PS 222, Brooklyn, New York
PS 242, Flushing, New York
PS 268, Queens, New York
Reckson Executive Park Cafe, Rye Brook, New York
Residence, Millbrook, New York
Residence, Stamfordville, New York
Thorndale Family Offices, Millbrook, New York
The Trump Group, New York, New York
Tyco International, New York, New York
Shippan Landing Amenities Building, Stamford, Connecticut
Sotheby's, New York, New York
St. Patrick's Rectory Kitchen, New York, New York
St. Hilda's & St. Hugh's School, New York, New York
Westchester Community College Student Center: Cafeteria, Cafe & Culinary School, Valhalla, NY
Westport Senior Activities Center, Westport, CT

Skidmore, Owings & Merrill, New York, New York
1982 - 1989 Position: Associate

Raymond/Raymond Associates, Westwood, New Jersey
1978-1982 Position: Associate Partner

Professional Memberships: Associate, AIA



3.5.7 APPENDICES

3.5.7 Appendices

Design of Elementary Magnet Schools

Established as an excellent way for Districts to meet Sheff versus O'Neal legislative requirements for racially integrated Connecticut schools, the magnet schools are awarded with both a higher State Grant reimbursement rates, and have more flexibility in space programs and specialty educational focus.

For the new K-5 International Baccalaureate (IB) Interdistrict Magnet School in Stamford, the City has combined a magnet school, with a well-respected and recognized International Baccalaureate Academy Project. This approach will assure the school has the flexibility of designing the IB program curriculum as best serves the needs of its students and receiving generous grant reimbursements from the State DOE (OSF).

To this end, our approach to the project design will be curriculum focused and concentrated on developing a custom approach to delivering the IB program for the primary year students. Integration of information sources and collaborative project learning will be two areas of our focus on this project. While the feasibility study resulted in a basic space needs program, our approach will expand this program into a high quality education specification that integrates specific IB requirements, as well as a descriptive analysis for each space, the activities to be conducted, and the way to adapt the spaces for future uses. Our approach will be focused on discovery and creating spaces that best support these initiatives.

Moreover, our design will encompass not only interior spaces of the school, but will also include outdoor learning opportunities, incorporating site and neighborhood learning and exterior teaching environments.

As a firm that focuses on "thought leadership" for primary and secondary education facilities, we bring to the City of Stamford a much broader perspective and experience with the design of 21st century schools, especially because of our team's direct and recent experience with IB curriculum-based schools.

As magnet school experts, our team can navigate the grant approvals and the challenges of the OSF process. After completing dozens of public schools in the last decade, our team of architects and engineers understands how to overcome both technical and financial obstacles. Moreover, in order for the architecture to respond to the IB program, the design team must lead the charge for maximizing the City's reimbursement rate, and must have a close relationship with the state's OSF in order for this to be successful. Our team

brings to the City of Stamford a long and successful history of expedited approvals and generous reimbursement rates, especially for magnet schools. Our work has earned respect from the OSF for our efforts.

Design of New Schools Proximate to Occupied facilities

The City of Stamford has elected to construct the new IB magnet school on the site of the existing parochial school. This approach creates an opportunity to reuse an existing well-constructed school structure and renew it for the new International Baccalaureate program. This school must be specifically designed to meet the needs of the "Primary Years Programme." In addition, the design and placement of the new additions and the renovation of the existing school must be reasonable and practical, and not jeopardize the character and environment of the neighboring community. Nor must subsequent construction phases jeopardize the operation or the safety of the students attending the recently completed buildings.

Consequently, the design of the school must be prepared so that the construction work can occur without unnecessary burden or cost premium associated with separating the construction site from the occupied portions of the existing buildings.

In selecting the position and layout of the new IB School improvements, the team will consider the following issues when making this important decision:

1. The new school when completed must not appear compromised in either design or position, or in function on the existing property.
2. Traffic flow and access to and from the site must be acceptable to the City authorities and be sensitive to neighborhood concerns. Well-conceived safe bus and parent drop-off and parking areas will be crucial. Durable surface materials must be installed even if they provide a temporary solution that supports the phased construction approach required by the City.
3. Since the school will have a significant presence on in this residential neighborhood, its position must not adversely impact property values or significantly alter current site conditions.
4. As a LEED® Silver or equivalent project, the design must factor both the existing school renovations and the new construction when forming sustainability strategies.
5. The construction schedule must allow for a final summer of site reestablishment to allow ample time for the demolition of the existing structures and the construction of the new site improvements. Natural turf fields require at least a year of growing season in order to be ready for use.

3.5.7 Appendices (continued)

6. Hazardous material abatement in the existing structure, and possibly the site, must not occur while the building is occupied by children. This means that an early abatement package encompassing the entire Campus will need to be developed and issued.

7. The site design must also accommodate contractor access, parking, and laydown areas that are of adequate size. These are often located off-site if the area cannot accommodate the space needed for a construction "pad."

8. Since the existing school must remain operational during the construction of Phase III and Phase IV projects, the position of the school additions must allow access to exterior recess spaces, or if possible a multipurpose field without having to cross any construction traffic or work area. Fencing or other types of semi-permanent barriers must be installed to provide strong physical barriers and prevent child access.

9. Lastly, underground utilities that serve the existing structure may need to be replaced, or temporarily rerouted, or where possible, located overhead. Often the underground utilities are directly under the proposed new building pad, and must be removed prior to starting the new construction.

While we believe that the logical and practical location of the new school will likely be at the south or rear of the existing school, this may require accessing the building site with a temporary curb cut along one of the site's side streets to maintain Strawberry Hill Avenue as the student and parent access point. This suggests a temporary curb opening permit, or other special permitting may be necessary as part of the site approval application.

Working closely with the civil (BVH) and landscape architect, (Richter & Cegan), the design team will provide temporary stormwater mitigation measures to serve the existing school, as well as the construction site. Instituting aggressive management techniques will avoid excessive stormwater flooding.

Our experience with schools designed in neighborhoods such as the K-5 IB Interdistrict Magnet School site, indicates that approximately two-thirds of the total proposed program typically will be on the ground floor. This assumes that the youngest grades, as required by code, will be located on the ground level. Older children and their associated programs and spaces may occupy the second floor areas. Large common spaces such as the gymnasium, cafeteria, and media centers used by the entire student body will remain on the ground floor, along with the administration office and the nurse's suite to provide easy access for parents and all students.

In any option, considering the practicality of continuing to use the existing school and grounds, while the new school is under construction is very important. However, creating a non-compromised new school design is critical to the success of this project.

We are familiar and versed in designing schools within very tight urban sites; therefore, we have the design experience to incorporate the new school into this site so that it fits naturally, and will not appear compromised, or lacking in any manner.

Representative projects

Perkins Eastman has designed a number of new schools in close proximity to existing schools and other buildings. For example, the Roger Ludlowe Middle School in Fairfield was constructed on the site of the Roger Ludlowe High School while the existing school and site remained operational. The firm later renovated and expanded the existing high school as the new middle school was nearing completion. In this case, two schools were undergoing construction at the same time without program disruption.

Several other projects we have designed include "like-new" renovation projects, where the existing occupied facility was completely gutted and transformed. One such example of this type of project is the Glenville Elementary School in Greenwich, Connecticut. This project was completely re-configured internally and externally. The transformation was so expansive that is now un-recognizable from its previous form. The work included complete redesign of all classrooms and common use space, and an all new façade and exterior envelope. Our approach also revitalized the site design with new bus and parent drop-off lanes, and new parking and playing fields.

In Stamford, we designed a sizable addition to the Stamford High School and created a new Math and Technology Center. This 60,000 square foot addition was designed to create its own identity, while sharing the school's common spaces. Site access and circulation of traffic were modified to accommodate the new structure. The high school remained in operation during construction without disruption to its programs.

Recently we designed the new Charter Oak Academy, an International Baccalaureate school. The school is located directly behind the existing school. The existing school will remain open and operational as the new school undergoes construction. Upon completion of the school, the existing facility will undergo hazardous materials abatement, and then demolished. Our approach then reclaims the old building footprint into multi-purpose playfields, an outdoor learning garden, and play-scapes.



3.5.7 Appendices (continued)

Lastly, the team just completed the design and a like-new renovation of the North Haven Middle School. This project includes a two-story academic classroom and media center addition, and the renovation of existing gymnasium, cafeteria, and auditorium spaces. The existing one-story classroom wings will undergo abatement and then be demolished to provide two new multi-purpose play fields. The school will remain operational and fully occupied during the entire construction period.

The firm is fully versed in the issues associated with maintaining safety and designing beautiful schools within constricted sites. This challenge makes these types of school projects exciting and a place for creative solutions.

THE THOUGHT LEADERSHIP OF PERKINS EASTMAN

COLLECTIVE INTELLIGENCE



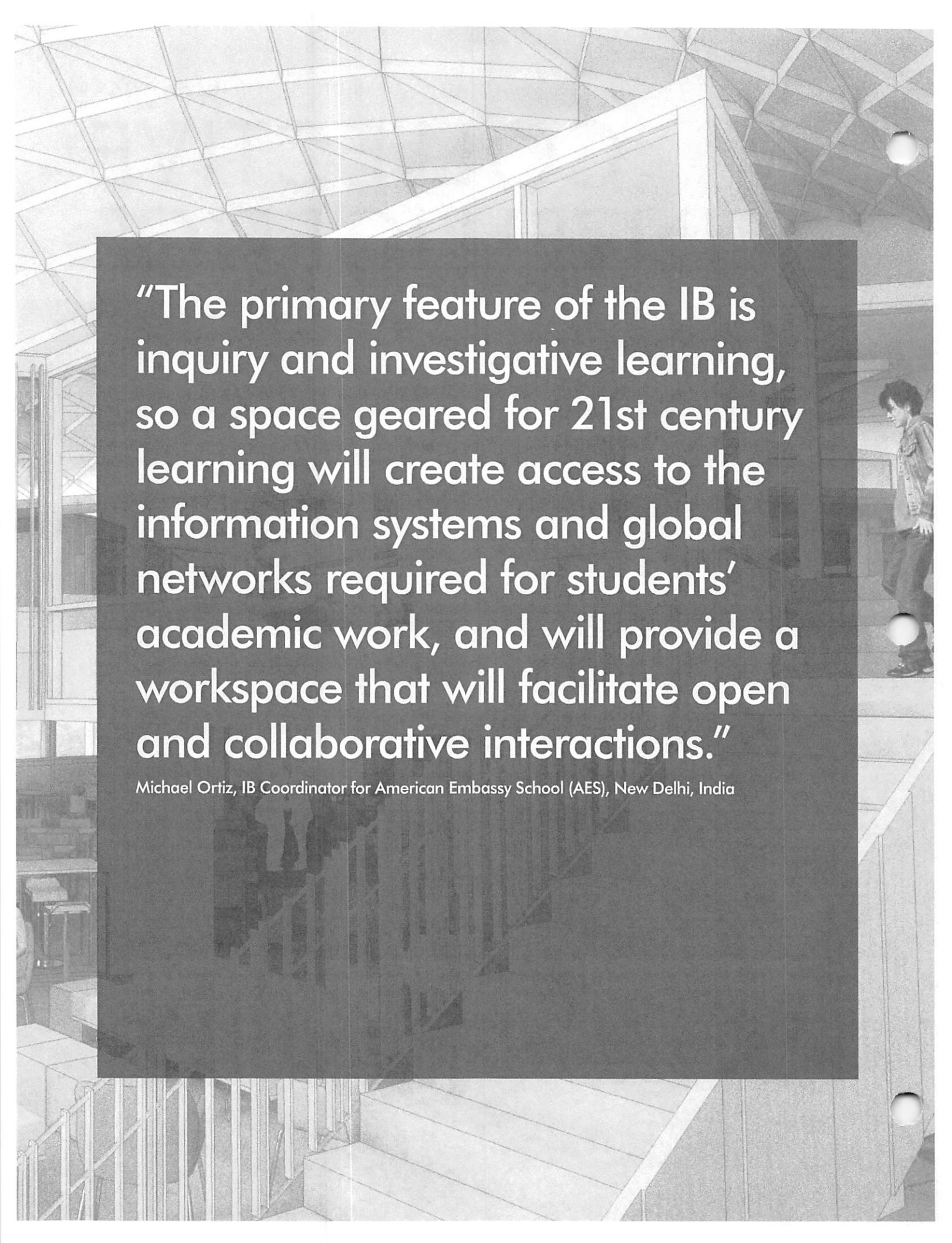
series volume

3.1

Facility's Response to the
International Baccalaureate Curriculum

By
Liz Lee

Perkins Eastman

A black and white photograph of a modern building interior. The ceiling is a complex, geometric structure with a grid of lines. A person is walking on a staircase on the right side of the image. The overall atmosphere is bright and architectural.

“The primary feature of the IB is inquiry and investigative learning, so a space geared for 21st century learning will create access to the information systems and global networks required for students’ academic work, and will provide a workspace that will facilitate open and collaborative interactions.”

Michael Ortiz, IB Coordinator for American Embassy School (AES), New Delhi, India



Increasingly active citizens of the world, today's students have greater expectations and demands of their educational experience than has been true historically as a result of globalization aided by technology.

They must be prepared to compete and collaborate on an international stage while at the same time respond to their local environment and context.

Established in 1968 to answer to the needs of internationally mobile students preparing for university, the International Baccalaureate Organization (IBO) may be uniquely suited to help guide the educational experience of our global citizen students. The IBO is a non-profit educational foundation that works with schools, governments, and international organizations to develop a challenging curriculum and approach that is implemented on an international scale. The curriculum balances a western-based education with a unique "of this place" sensitivity, harmonizing differing national curricula and teaching methods at schools worldwide. With students around the world learning alongside their global peers, the goal is that this shared intercultural understanding will raise overall understanding and tolerance resulting in a better, more constructive world.

One of the few internationally recognized curricula to date, the International Baccalaureate (IB) is the comprehensive leader; its curriculum is deployed in over 3,800 schools in 140 countries. IB curriculum includes distinctive programs organized by age group that relate directly to the built school environment. Where there are challenges in effectively supporting a program that is simultaneously international and local, collaborative and individual, focused and contextual, there are also unique opportunities, including the development of a new model of what the school of the future may look like.

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

- IB Mission Statement

Standards and Practices

To ensure quality and consistency across all schools and all countries, IB curriculum operates from a general framework with established key performance indicators that allow the IBO to actively monitor each schools' implementation and effectiveness. But successful implementation isn't only a function of curriculum assessment and staff roles. From the numerous sources listed on National Clearinghouse of Educational Facilities website, we know that student learning and performance is also greatly impacted by their surroundings. The school facility should provide the proper programmatic spaces for the curriculum to engage the students. This finding is intrinsic to the IBO way and, as such, is deeply rooted in many of the curriculum standards, linking facility design inextricably to educational success as defined by IBO specifically.



left to right
The library is an essential facility component for the IB Primary Years Programme, which focuses on the development of the whole child as an inquirer.

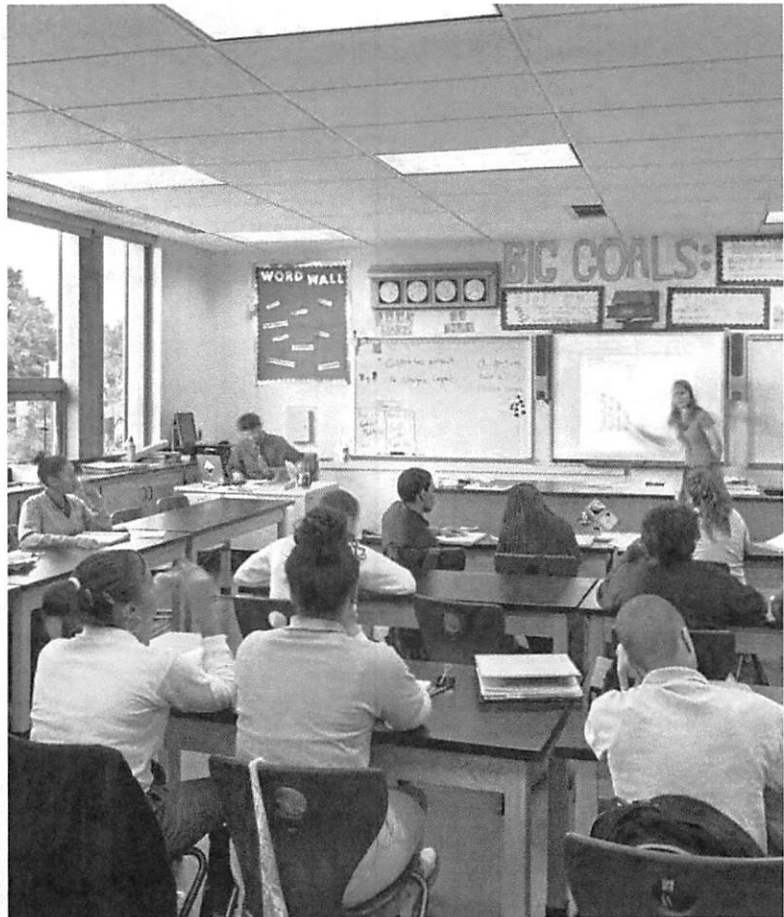
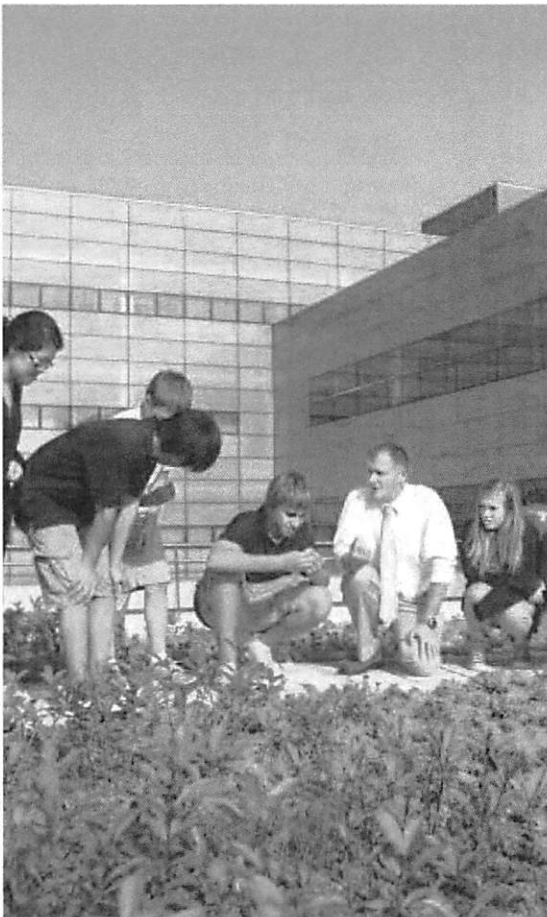
Concordia International School Shanghai extends science experimentation space for group 4 and 6 Diploma Programme subjects to the outdoors.

Science wet labs are one of the few facility requirements for Middle and High Schools as stipulated by the IBO.

For the past five years, numbers in the three programmes have grown by an average 15% each year.

These program spaces include all learning environments, facilities, and resources and specialized equipment that support the implementation of the programmes, including labs and studios, technology facilities, and secure area locations for examination materials.

The greater the facility's design supports the IB curriculum, the greater chance of student success and demonstration of the 21st-century competencies required by the curriculum. To understand how the standards can be realized in the actual design of a school facility, it is helpful to organize them according to potential facility responses, outlined in the following matrix as an example.

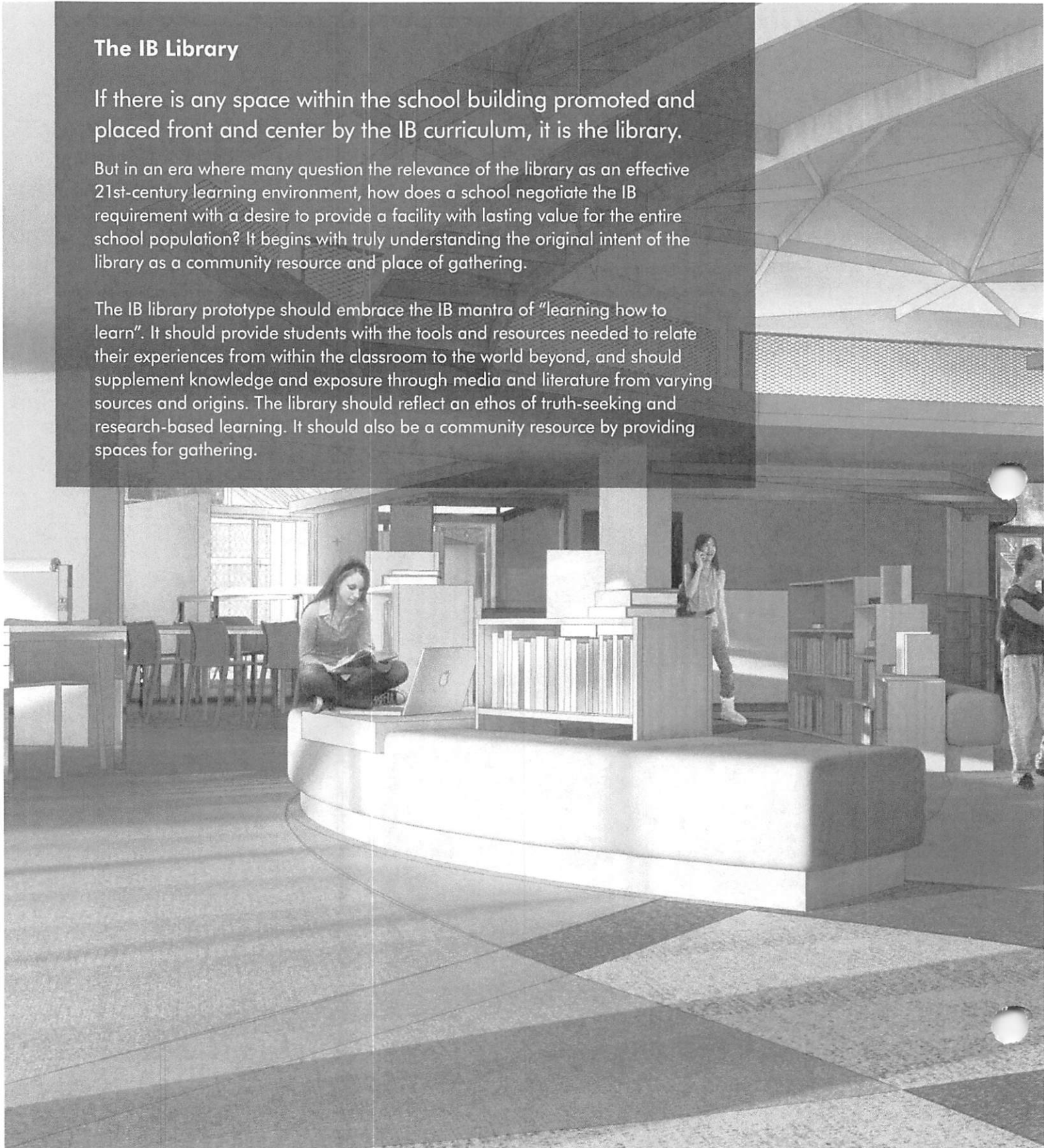


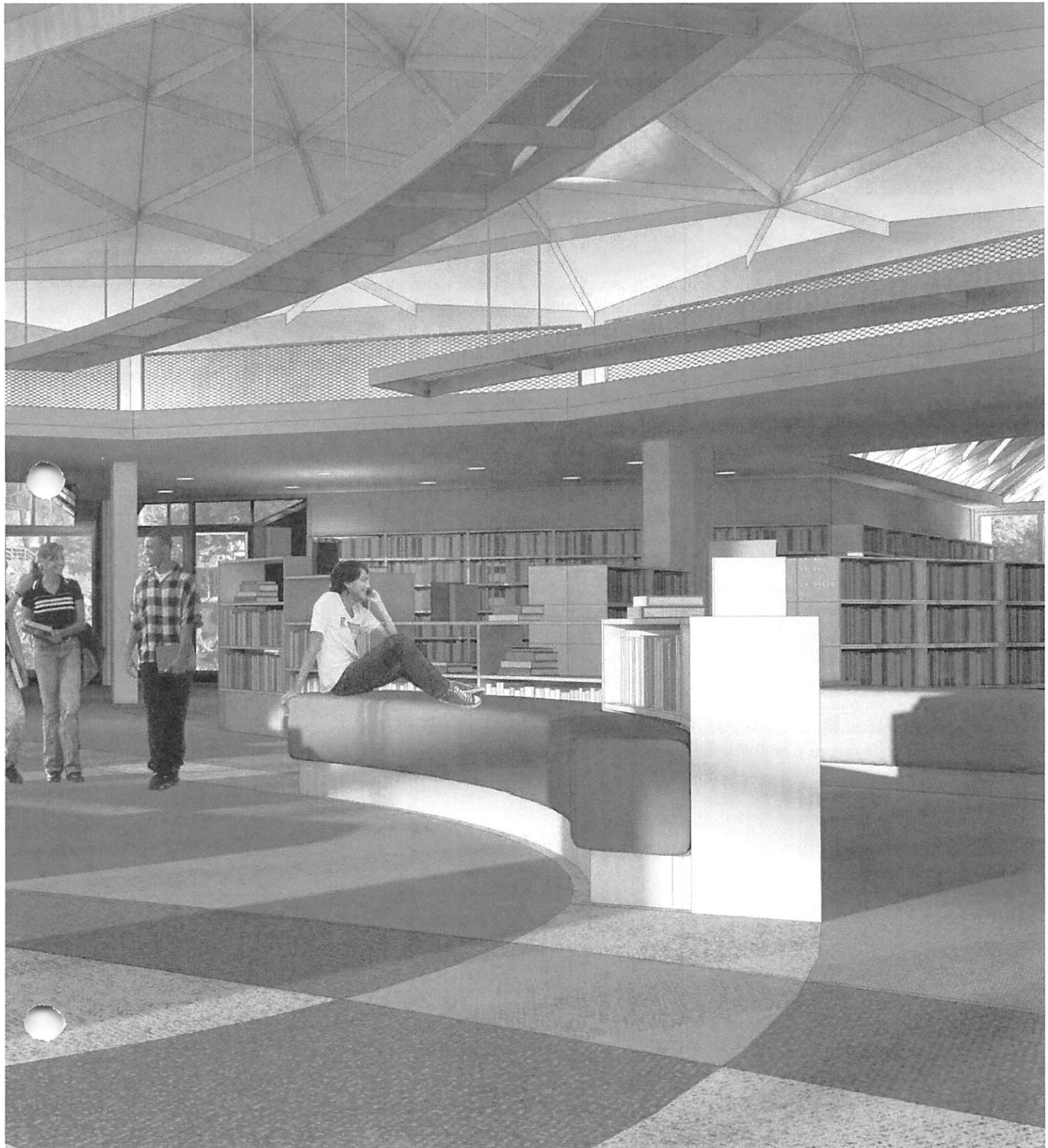
The IB Library

If there is any space within the school building promoted and placed front and center by the IB curriculum, it is the library.

But in an era where many question the relevance of the library as an effective 21st-century learning environment, how does a school negotiate the IB requirement with a desire to provide a facility with lasting value for the entire school population? It begins with truly understanding the original intent of the library as a community resource and place of gathering.

The IB library prototype should embrace the IB mantra of "learning how to learn". It should provide students with the tools and resources needed to relate their experiences from within the classroom to the world beyond, and should supplement knowledge and exposure through media and literature from varying sources and origins. The library should reflect an ethos of truth-seeking and research-based learning. It should also be a community resource by providing spaces for gathering.





No longer perceived as a depository for books, the library is a dynamic and active place for collaboration and exploration.

Media varies from hard copy books, on-line reference materials, self-generated ongoing video and audio projects, to digital essays and presentations. The environment is as varied as the reasons for being there; small group teaming rooms for project-based work, soft areas for informal interaction and casual reading, and class areas for secondary instruction including guided tours of computer-based resources.

The library as public gathering space also serves as an unofficial welcome center for parents and an opportunity for the exhibition of student work and broadcasting of school-related events. As a school-wide resource, the IB library may also consolidate the recommended resources for ongoing faculty professional development. The collocation not only enables more effective management of resources, but also brings the entire community together in one place, reinforcing the library as a symbol for culture and community enrichment.

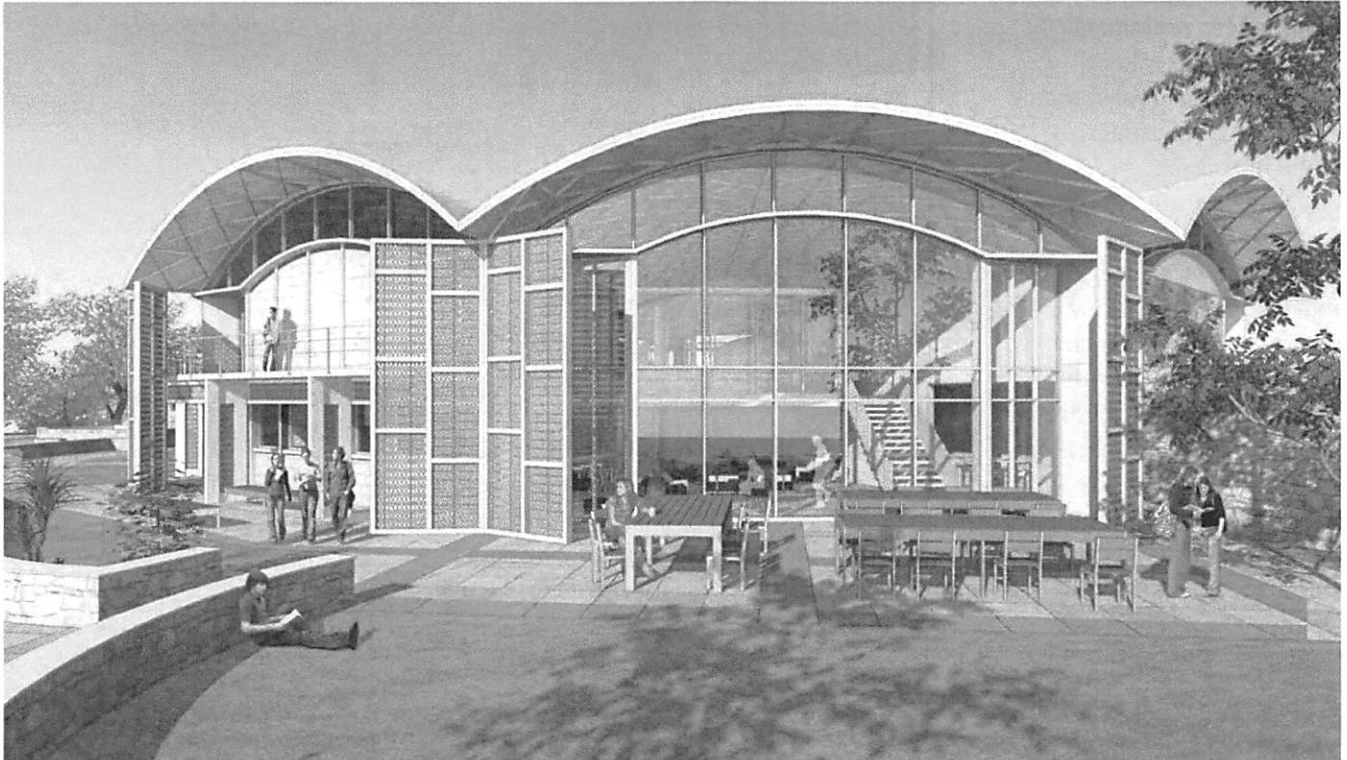
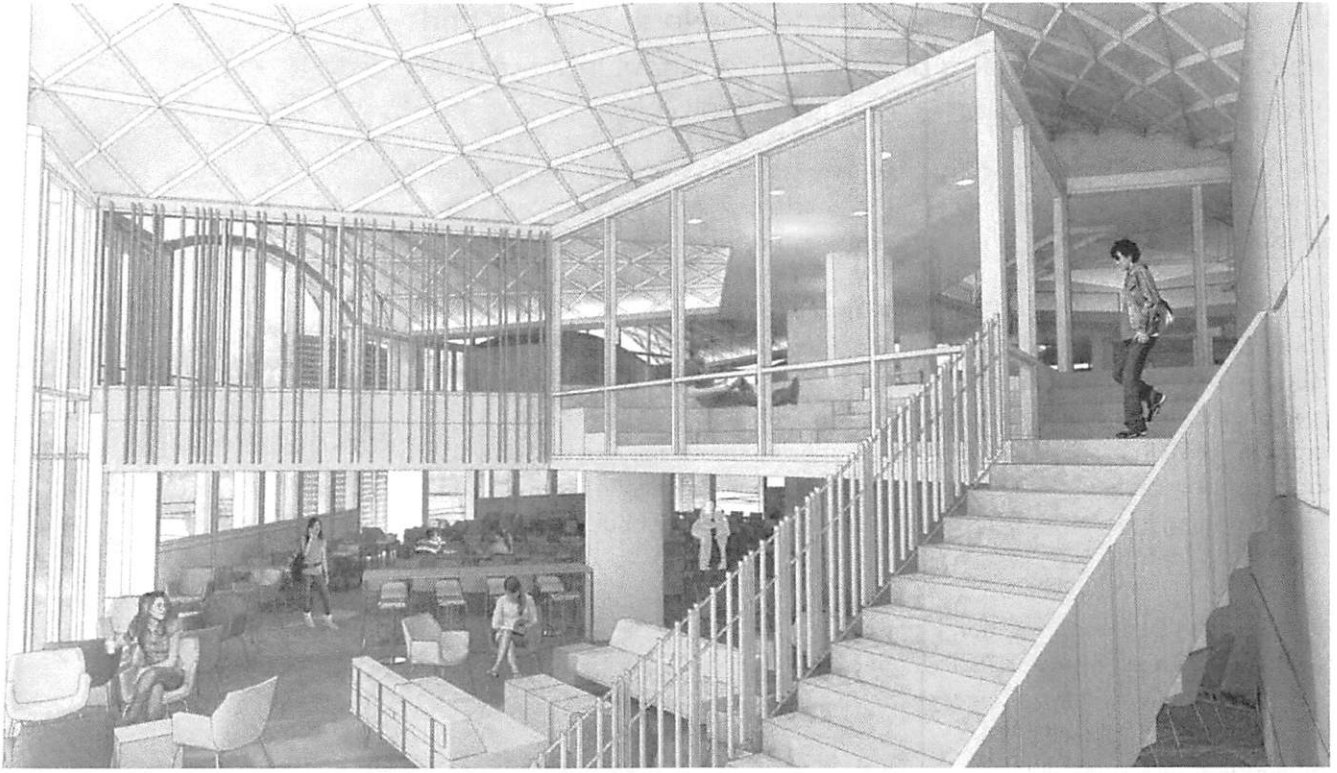
While updating existing spaces into 21st century learning environments at the American Embassy School (AES) in New Delhi, India, school leadership simultaneously took a second look at how the campus was really being used. As most international schools are true community resources in that they provide support networks and resources unique to the needs of their diverse communities, AES looked to incorporate some public function to their facilities, opening their doors to parents, visitors and the greater community. After careful study and consideration, AES approved the conversion of a classroom building into the Stein Learning Center, comprised of the Middle School/ High School library, training and community events spaces, and High School student commons and café. This new conversion would not only showcase the importance of the library to the school, but also acknowledge the broadening of the library's role as a connection between user groups across campus.

opposite, top to bottom

The New Stein Learning Center at American Embassy School in New Delhi showcases IB's emphasis on connectivity, collaboration, and inquiry by transforming their traditional library into a 21st century learning environment.

By preserving and reinvigorating an original building on the AES campus, the project honors the campus' original 'international-mindedness' that blended a western-based approach with eastern philosophies and environments.

The most IB World Schools authorized to offer all three programmes are located in the Africa/Europe/ Middle East region.



The Local International

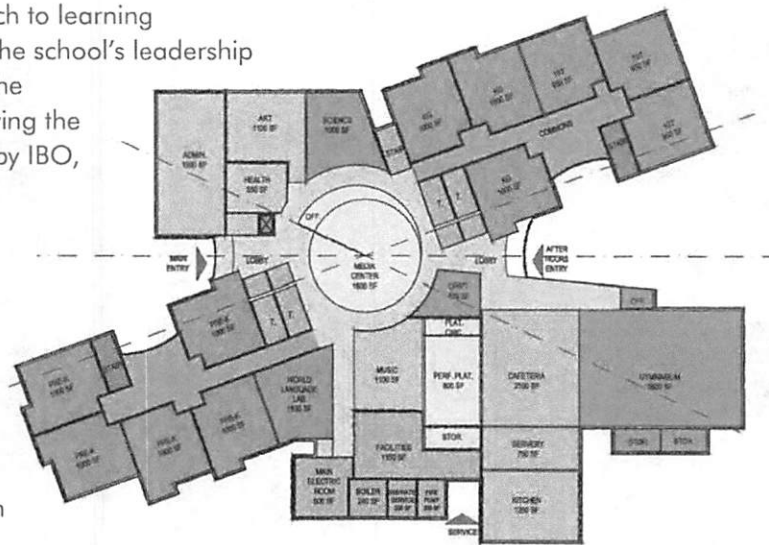
With over 50% of all IB schools located in North America and the Caribbean, IB is well-represented throughout international, private independent, charter, and public schools.

The “filter” or level at which each school adopts the IB philosophy shapes the facility’s response, including the degree to which the facility is influenced, as well as how visible or underlying the characteristics may be.

The International School for Global Citizenship (ISGC) in East Hartford, Connecticut is established to develop “inquiring, knowledgeable, and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.” The preK-5 school is part of a larger initiative to assist school districts in reducing the racial, ethnic, and socioeconomic isolation of Greater Hartford students by initiating, developing, and managing innovative, high-quality, inter-district educational programs for minority students.

At ISGC, the IB approach to learning is wholly embraced by the school’s leadership and embedded within the school’s mission. Following the requirement stipulated by IBO, ISGC makes prominent and central the role of the library by literally placing it at the center of the proposed facility. Classrooms that radiate outward from the central library space benefit from an inquiry-based approach to learning, highlighted by an aptly named “Provocation Table”

located within each class space. Here students are presented with an object (or objects) during the day to study, discuss, analyze, and admire. While the school promotes a more progressive environment for student enrichment, they are still mandated to comply with state standards for facilities, testing, and assessment. The balance of these priorities roots a global perspective in the specific, local Connecticut setting.

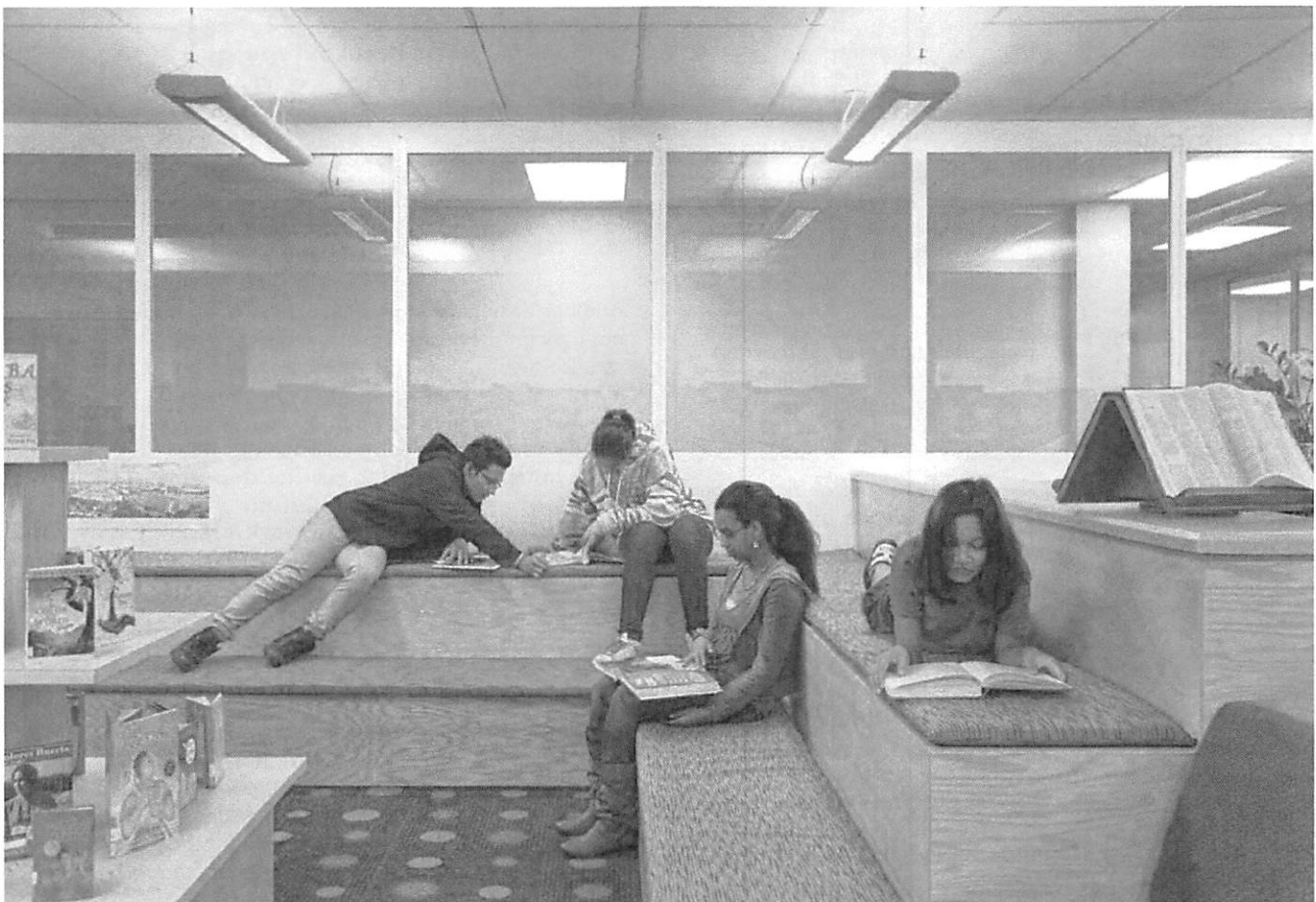


left to right
The planning for the new International School for Global Citizenship in East Hartford, Connecticut, interprets the IB Primary Years Programme requirement literally by placing the library at the center of the entire school.

Modest modifications to Thomas Jefferson Middle School positions the library as a 21st century resource and collaboration space in support of the Middle Years Programme.

In Arlington, Virginia, Thomas Jefferson Middle School sought to update their existing 1970s facility to better accommodate a comprehensive, student-centered approach to learning while improving the overall performance of their environment. Efforts focused on improving the multi-modal learning opportunities by promoting the library as the “hub” of the school and by identifying program to support technology integration, while preserving the connectivity and transparency between classrooms to reinforce trans-disciplinary learning. Also regulated by state-mandated space standards, the resulting environment is a carefully vetted, economical solution to 21st century learning.

There are expected to be one million IB students by 2014.



	IBO STANDARD	POTENTIAL FACILITY RESPONSE
PRIMARY Learning Modalities	<p><i>"The school is committed to a constructivist, inquiry-based approach to teaching and learning that promotes inquiry and the development of critical-thinking skills." (IBO Standard A-PYP:3c)</i></p> <p><i>"The school demonstrates a commitment to transdisciplinary learning." (IBO Standard A-PYP:3e)</i></p>	<p>It is common for IB accredited schools to provide specific places for hands-on student experimentation outside of their regular classrooms. A suite of collocated spaces titled "Whole Brain Lab" provides wet areas for Art and Science, and integrates a technology component that permits young students to make connections between more creative (right brain) approaches and more rational (left brain) thinking, all supported by development of early research and fact-finding skills.</p>
GENERAL Meeting and Collaboration	<p><i>"The curriculum provides opportunities for students to work both independently and collaboratively." (IBO Standard B1:11)</i></p>	<p>The traditional role of the library as a "second classroom" or supportive learning environment is enhanced and magnified throughout the school facility in the form of breakout spaces and student commons areas. Configuration and flexibility of these collaboration areas, as well as increased accessibility by the entire school population, lend greatly to their success; rooms should vary in size from small group rooms for 4-6 people to large group meeting and testing space for up to 80.</p>
GENERAL Teacher Training	<p><i>"The school ensures that teachers and administrators receive IB-recognized professional development." (IBO Standard B2:3)</i></p> <p><i>"The school provides dedicated time for teachers' collaborative planning and reflection." (IBO Standard B2:4)</i></p>	<p>Another distinguishing factor of IB is its emphasis not only on program implementation but also regular faculty training so they are more able to effectively execute the program implementation that is itself continuously improving. Although mostly a scheduling demand on the faculty's part, this requirement also calls for dependable staff training space and planning areas. Collaboration and private work areas, as well as access to professional development resources, contribute to a conducive, IB-friendly workplace for teachers.</p>
DIPLOMA College Preparation	<p><i>"The school has systems in place to guide and counsel students through the programme(s). The school provides guidance to students on post-secondary educational options." (IBO Standard B2-DP:9a)</i></p>	<p>Like most college-preparatory environments, IB accredited schools are required to make available college guidance space as a resource and support area for students. Collocation with the library not only reinforces its central role, but also consolidates student resources in one area. As well, counselors gain passive access to students during their study periods, promoting a relaxed, supportive environment.</p>

Raising the Bar

The "Whole Brain Lab" spatial prototype supports and promotes the six transdisciplinary themes – the most significant feature of the IB Primary Years Programme.

From a facility perspective, the IB guidelines are quite flexible and necessarily so. For instance, not all candidate schools have equal financial ability and means either due to the newness of their organization or socio-economic climate or context they are located in, so the facility recommendations include alternatives so that schools are able to personalize according to their unique situations, including their institutional vision, mission, and goals.



IBO guidelines include facility recommendations that IB schools increasingly consider necessary in order to support curriculum offerings. The majority of these are support spaces that help to enhance student engagement and increase teacher resources. In many ways, this expands upon what best practices would consider necessary for the built facility in support of IB, while others would suggest that the facility does not necessarily have to grow but that the overall area is reallocated.

Planned as a first-class college preparatory institution, Huijia International School's IB High School in Beijing, China, uses the IB curriculum as the primary framework for the growth and development of its 10th-12th grade students. Instead of retroactively adapting the curriculum and courses to the facility, Huijia had the unique opportunity to design the spaces on their new campus specifically to the curriculum.

Curriculum courses have different demands for actual physical space. For instance, for final assignments in some courses--particularly Visual Art, Music, and Film--students are required to stage their portfolio of work, often one or

There are 120,000 Diploma Programme graduates entering university each year.