



Massachusetts School Building Authority
Funding Affordable, Sustainable, and Efficient Schools in Partnership with Local Communities

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Charter Schools and MSBA-Funded Schools

WHAT ARE THE SIMILARITIES AND DIFFERENCES BETWEEN CHARTER SCHOOLS AND MSBA-FUNDED SCHOOLS?

WHY ARE CHARTER SCHOOLS LESS EXPENSIVE THAN MSBA-FUNDED SCHOOLS?



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Charter School Procurement

PROCUREMENT IS THE SAME AS THE MSBA

- Must follow chapter 149 or 149A CMR Public Procurement Process
- Designer Selection through DCAM
- Use of an OPM
- WBE/MBE requirements
- File sub-trade requirements



Charter School Funding

FUNDING IS VERY DIFFERENT FROM MSBA

- MSBA Funded Schools are Civic Investments
- Charter Schools are modeled almost like a business
- 5 year renewal of charter
- Faster Schedules
- Lower Escalation
- Lower GC Overhead
- May plan for a shorter useful life
- May affect choices in materials and systems



Foxborough Regional Charter School

- Addition to existing Charter School
- Improved vehicle circulation and drop off
- Large Gymnasium for rental income
- Play field improvements

Location: Foxborough, MA

Bid Date: August 2010

Client: FCRS

Bid Date: 2011

OPM: PMA

Students: 600

GC: Agostini

SF/Student: 111 SF

Size: 7,000 SF (renovation)
60,000 SF (addition)

Cost/SF: \$198/SF
\$242/SF (2016)

Cost: \$13,250,000

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Alma del Mar Charter School

- New Construction
- Not required to meet LEED or MA-CHPS Certification Standards
- 19 months from Architect hire to move in

Location: New Bedford, MA

Bid Date: July 2015

Client: Alma del Mar

Completion Date: August 2016

OPM: Compass

Students: 450

Client: JK Scanlan

SF/Student: 95 SF

Size: 42,872 SF

Cost/SF: \$288/SF

Cost: \$12,347,000

\$313/SF (2016)

\$10,804,000 w/o site







Boston Renaissance Charter Public School

- Renovation of a historic mill building and warehouse
- Designed to LEED Certification Standards
- Financed largely through sale of downtown property
- Boston Preservation Alliance Award Winner

Location: Hyde Park, MA

Bid Date: May 2009

Client: BRCPS

Construction Start: 2009

OPM: Daedalus Projects

Completion Date: 2010

CM: Suffolk Construction

Students: 885

Size: 105,000 SF

SF/Student: 118 SF

Cost: \$24,010,245

Cost/SF: \$229/SF
\$289/SF (2016)

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Sturgis Charter School

- New modular construction of high school campus with highly successful “International Baccalaureate” program
- Completed on a tight budget and schedule: 18 months for design and construction

Location: Hyannis, MA

Client: Sturgis Charter School

Size: 52,000 SF

Cost: \$8,500,000 (modular)

Bid Date: Spring 2011

Completion Date:

August 2012

Students: 400

SF/Student: 137

Price/SF 2016: \$186







Excel Academy Charter High School

- New construction for a high school on a tight urban site
- LEED Silver Certifiable
- Use of nearby community resources: Library and Park
- Opened ahead of schedule and under budget

Location: East Boston, MA

Completion Date:
July 2016

Client: Excel Academy
Charter Schools

Students: 650

Size: 55,000 SF

SF/Student: 85

Cost: \$15,900,000

Price/SF 2016: \$290

Bid Date: Spring 2015







MATCH Community Day Charter School

- New construction for an ELL Elementary School with daily tutoring
- Tutoring booth alcoves in keeping with Education Plan
- LEED Silver Certifiable
- Pre-engineered gymnasium, athletic fields & playground

Location: Hyde Park, MA

Completion Date:
August 2015

Client: MATCH Education

Students: 700

Size: 72,000 SF

SF/Student: 100

Cost: \$24,420,000

Price/SF 2016: \$368

Bid Date: Spring 2014







Atlantis Charter School

- Located on a 65-acre former industrial site overlooking a scenic pond
- Shared gymnasium, athletic field and track
- New construction of K-12 school
- Separate entrances for Lower and Upper Schools

Location: Fall River, MA

Completion Date: 2018

Client: Atlantis Charter School

Students: 1400

Size: 94,000 SF

SF/Student: 68

Cost: \$27,000,000

Price/SF 2016: \$287

Bid Date: Spring 2016





KIPP Academy Lynn

- First ground-up charter school in Massachusetts
- Located on a challenging hilltop site
- Energy efficient and environmentally sustainable

Location: Lynn, MA

Client: KIPP Academy

OPM: Skanska

Contractor: Contractor

Size: 66,800 SF

Cost: \$18,000,000

Design Start: 2010

Bid Date: March 2011

Construction Start: 2011

Completion Date: August 2012

Students: 850

SF/Student: 79 SF

Price/SF 2016: \$314

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KIPP Academy Boston

- Innovative pre-fabricated gymnasium
- Completed on a tight budget and schedule
- Positioned to mitigate the MBTA impact of the adjacent commuter rail tracks

Location: Mattapan, MA

Client: KIPP Academy

OPM: Jacobs

Contractor: Consigli

Size: 53,000 SF

Cost: \$14,000,000

Design Start: 2014

Bid Date: 2015

Construction Start: 2015

Completion Date: August 2016

Students: 650

SF/Student: 82 SF

Price/SF 2016: \$271

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KIPP ACADEMY BOSTON



MSBA Guidelines: Elementary Schools

	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM TYPE	ROOM NFA ¹	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES		0	0	
<i>(List classrooms of different sizes separately)</i>				
Pre-Kindergarten w/ toilet	1,200		-	1,100 SF min - 1,300 SF max
Kindergarten w/ toilet	1,200	0	-	1,100 SF min - 1,300 SF max
General Classrooms - Grade 1-6	950	0	-	900 SF min - 1,000 SF max
SPECIAL EDUCATION			500	
<i>(List rooms of different sizes separately)</i>				
Self-Contained SPED	950	0	-	8% of pop. in self-contained SPED
Self-Contained SPED - toilet	60	0	-	
Resource Room	500	0	-	1/2 size Genl. Clrm.
Small Group Room / Reading	500	1	500	1/2 size Genl. Clrm.
ART & MUSIC			0	
<i>(List rooms of different sizes separately)</i>				
Art Classroom - 25 seats	1,000	0	-	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln	150	0	-	
Music Classroom / Large Group - 25-50 seats	1,200	0	-	assumed schedule 2 times / week / student
Music Practice / Ensemble	75	0	-	
HEALTH & PHYSICAL EDUCATION			6,300	
<i>(List rooms of different sizes separately)</i>				
Gymnasium	6,000	1	6,000	6000 SF Min. Size
Gym Storeroom	150	1	150	
Health Instructor's Office w/ Shower & Toilet	150	1	150	
MEDIA CENTER			2,020	
<i>(List rooms of different sizes separately)</i>				
Media Center / Reading Room	2,020	1	2,020	
DINING & FOOD SERVICE			3,000	
<i>(List rooms of different sizes separately)</i>				
Cafeteria / Dining	0	1	-	2 seatings - 15SF per seat
Stage	1,000	1	1,000	
Chair / Table / Equipment Storage	200	1	200	
Kitchen	1,600	1	1,600	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	200	1	200	20 SF/Occupant

MEDICAL			310	
<i>(List rooms of different sizes separately)</i>				
Medical Suite Toilet	60	1	60	
Nurses' Office / Waiting Room	250	1	250	
Examination Room / Resting	100	0	-	
ADMINISTRATION & GUIDANCE			1,865	
<i>(List rooms of different sizes separately)</i>				
General Office / Waiting Room / Toilet	300	1	300	
Teachers' Mail and Time Room	100	1	100	
Duplicating Room	150	1	150	
Records Room	110	1	110	
Principal's Office w/ Conference Area	375	1	375	
Principal's Secretary / Waiting	125	1	125	
Assistant Principal's Office	120	0	-	
Supervisory / Spare Office	120	1	120	
Conference Room	250	1	250	
Guidance Office	150	0	-	
Guidance Storeroom	35	1	35	
Teachers' Work Room	300	1	300	
CUSTODIAL & MAINTENANCE			1,900	
<i>(List rooms of different sizes separately)</i>				
Custodian's Office	150	1	150	
Custodian's Workshop	375	1	375	
Custodian's Storage	375	1	375	
Recycling Room / Trash	400	1	400	
Receiving and General Supply	200	1	200	
Storeroom	200	1	200	
Network / Telecom Room	200	1	200	
OTHER			0	
<i>(List rooms of different sizes separately)</i>				
Other (specify)				
Total Building Net Floor Area (NFA)			15,895	
Proposed Student Capacity / Enrollment			0	
Total Building Gross Floor Area (GFA) ²			-	
Grossing factor (GFA/NFA)			0.00	



MSBA Guidelines: Elementary Schools

Less space allocation in Charter Schools

Not typically included in Charter Schools

ROOM TYPE	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			Comments
	ROOM NFA ¹	# OF RMS	area totals	
CORE ACADEMIC SPACES <i>(List classrooms of different sizes separately)</i>		0	0	
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Kindergarten w/ toilet	1,200	0	-	1,100 SF min - 1,300 SF max
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SPECIAL EDUCATION <i>(List rooms of different sizes separately)</i>			500	
Self-Contained SPED	950	0	-	8% of pop. in self-contained SPED
Self-Contained SPED - toilet	60	0	-	
Resource Room	500	0	-	1/2 size Genl. Clrm.
Small Group Room / Reading	500	1	500	1/2 size Genl. Clrm.
ART & MUSIC			0	
Art Classroom - 25 seats	1,000	0	-	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln	150	0	-	
Music Classroom / Large Group - 25-50 seats	1,200	0	-	assumed schedule 2 times / week / student
Music Practice / Ensemble	75	0	-	
HEALTH & PHYSICAL EDUCATION			6,300	
Gymnasium	6,000	1	6,000	6000 SF Min. Size
Gym Storeroom	150	1	150	
Health Instructor's Office w/ Shower & Toilet	150	1	150	
MEDIA CENTER			2,020	
Media Center / Reading Room	2,020	1	2,020	
DINING & FOOD SERVICE			3,000	
Cafeteria / Dining	0	1	-	2 seatings - 15SF per seat
Stage	1,000	1	1,000	
Chair / Table / Equipment Storage	200	1	200	
Kitchen	1,600	1	1,600	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	200	1	200	20 SF/Occupant

MEDICAL			310	
Medical Suite Toilet	60	1	60	
Nurses' Office / Waiting Room	250	1	250	
Examination Room / Resting	100	0	-	
ADMINISTRATION & GUIDANCE			1,865	
General Office / Waiting Room / Toilet	300	1	300	
Teachers' Mail and Time Room	100	1	100	
Duplicating Room	150	1	150	
Records Room	110	1	110	
Principal's Office w/ Conference Area	375	1	375	
Principal's Secretary / Waiting	125	1	125	
Assistant Principal's Office	120	0	-	
Supervisory / Spare Office	120	1	120	
Conference Room	250	1	250	
Guidance Office	150	0	-	
Guidance Storeroom	35	1	35	
Teachers' Work Room	300	1	300	
CUSTODIAL & MAINTENANCE			1,900	
Custodian's Office	150	1	150	
Custodian's Workshop	375	1	375	
Custodian's Storage	375	1	375	
Recycling Room / Trash	400	1	400	
Receiving and General Supply	200	1	200	
Storeroom	200	1	200	
Network / Telecom Room	200	1	200	
OTHER			0	
Other <i>(specify)</i>				
Total Building Net Floor Area (NFA)			15,895	
Proposed Student Capacity / Enrollment			0	
Total Building Gross Floor Area (GFA) ²			-	
Grossing factor (GFA/NFA)			0.00	

Not typically included in Charter Schools

Less space allocation in Charter Schools



MSBA Guidelines: High Schools

ROOM TYPE	ROOM NFA ¹	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES				1,150
<i>(List classrooms of different sizes separately)</i>				
Classroom - General	850	1	850	825 SF min - 950 SF max
Teacher Planning	100	1	100	
Small Group Seminar (20-30 seats)	500	0	-	
Science Classroom / Lab	1,440	0	-	3 x85% ut=20 Seats-1 per /day/student
Prep Room	200	0	-	
Central Chemical Storage Rm	200	1	200	
SPECIAL EDUCATION				0
<i>(List classrooms of different sizes separately)</i>				
Self-Contained SPED	950	0	-	assumed 8% of pop. in self-contained SPED
Self-Contained SPED Toilet	60	0	-	
Resource Room	500	0	-	1/2 size Genl. Clrm.
Small Group Room	500	0	-	1/2 size Genl. Clrm.
ART & MUSIC				3,700
Art Classroom - 25 seats	1,200	0	-	Assumed use - 25% Population - 5 times/week
Art Workroom w/ Storage & kiln	150	0	-	
Band - 50 - 100 seats	1,500	1	1,500	Assumed use - 25% Population - 5 times/week
Chorus - 50 - 100 seats	1,500	1	1,500	
Ensemble	200	1	200	
Music Practice	75	0	-	
Music Storage	500	1	500	
VOCATIONS & TECHNOLOGY				3,200
Tech Clrm. - (E.G. Drafting, Business)	1,200	1	1,200	Assumed use - 50% Population - 5 times/week
Tech Shop - (E.G. Consumer, Wood)	2,000	1	2,000	Assumed use - 50% Population - 5 times/week
HEALTH & PHYSICAL EDUCATION				16,200
Gymnasium	12,000	1	12,000	
PE Alternatives	3,000	1	3,000	
Gym Storeroom	300	1	300	
Locker Rooms - Boys / Girls w/ Toilets	0	1	-	5.6 sf/student total
Phys. Ed. Storage	500	1	500	
Athletic Director's Office	150	1	150	
Health Instructor's Office w/ Shower & Toilet	250	1	250	
MEDIA CENTER				3,650
Media Center / Reading Room	3,650	1	3,650	
Computer Lab				

AUDITORIUM / DRAMA				2,650
Auditorium	0	1	-	2/3 Enrollment @ 10 SF/Seat - 750 seats MAX
Stage	1,600	1	1,600	
Auditorium Storage	250	1	250	
Make-up / Dressing Rooms	300	2	600	
Controls / Lighting / Projection	200	1	200	
DINING & FOOD SERVICE				2,900
Cafeteria / Student Lounge / Break-out	0	1	-	3 seatings - 15SF per seat
Chair / Table Storage	300	1	300	
Scramble Serving Area	600	1	600	
Kitchen	1,600	1	1,600	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	400	1	400	20 SF/Occupant
MEDICAL				410
Medical Suite Toilet	60	1	60	
Nurses' Office / Waiting Room	250	1	250	
Interview Room	100	1	100	
Examination Room / Resting	100	0	-	
ADMINISTRATION & GUIDANCE				2,920
General Office / Waiting Room / Toilet	300	1	300	
Teachers' Mail and Time Room	100	1	100	
Duplicating Room	200	1	200	
Records Room	200	1	200	
Principal's Office w/ Conference Area	375	1	375	
Principal's Secretary / Waiting	125	1	125	
Assistant Principal's Office - AP1	150	1	150	
Assistant Principal's Office - AP2	150	0	-	
Supervisory / Spare Office	120	1	120	
Conference Room	450	1	450	
Guidance Office	150	0	-	
Guidance Waiting Room	100	1	100	
Guidance Storeroom	100	1	100	
Career Center	300	1	300	
Records Room	100	1	100	
Teachers' Work Room	300	1	300	
CUSTODIAL & MAINTENANCE				2,075
Custodian's Office	150	1	150	
Custodian's Workshop	250	1	250	
Custodian's Storage	375	1	375	
Recycling Room / Trash	400	1	400	
Receiving and General Supply	300	1	300	
Storeroom	400	1	400	
Network / Telecom Room	200	1	200	
OTHER				0
Other (specify)				



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Prep Room	200	0	-	
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Ensemble	200	1	200	
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Music Storage	500	1	500	
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Computer Lab				

AUDITORIUM / DRAMA				2,650
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Principal's Secretary / Waiting	125	1	125	
Assistant Principal's Office - AP1	150	1	150	
Assistant Principal's Office - AP2	150	0	-	
Supervisory / Spare Office	120	1	120	
Conference Room	450	1	450	
Guidance Office	150	0	-	
Guidance Waiting Room	100	1	100	
Guidance Storeroom	100	1	100	
Career Center	300	1	300	
Records Room	100	1	100	
Teachers' Work Room	300	1	300	
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Custodian's Workshop	250	1	250	
Custodian's Storage	375	1	375	
Recycling Room / Trash	400	1	400	
Receiving and General Supply	300	1	300	
Storeroom	400	1	400	
Network / Telecom Room	200	1	200	
OTHER				0
Other (specify)				

Less space allocation in Charter Schools



SF per Student Comparison

	MSBA Guidelines	Typical Charter School
Elementary Schools	145—180 GSF / student	100 GSF / student
Middle School	160—190 GSF / student	100 GSF / student
High School	185—205 GSF / student	100 GSF / student



General Classrooms

	MSBA Guidelines	Typical Charter School
Elementary Pre-K/K Classrooms	1,100—1,300 NSF	900—1,000 NSF
Elementary Core Classrooms	900—1,000 NSF	750 NSF
Middle Core Classrooms	850—950 NSF	750 NSF
High School General Classrooms	850—950 NSF	750 NSF



Science and Special Education Classrooms

	MSBA Guidelines	Typical Charter School
Middle School Science Classrooms	1,200 NSF	850—950 NSF
High School Science Classrooms	1,440 NSF	850—1,000 NSF
Special Education Classrooms	Guidelines assume 16% of population; special programs; self-contained classrooms	Typically push-in with limited break-out rooms



Administration and Support Spaces

	MSBA Guidelines	Typical Charter School
Teacher Planning Areas	300 NSF	300—450 NSF
Kitchen and serving area	1,600 NSF	<1,000 NSF
Dining area	15 GSF/student	15 GSF/student
Administration	1,865—2,920 NSF	2,500 NSF



Specialty Spaces

	MSBA Guidelines	Typical Charter School
Art and Music	1,000 NSF	750—850 NSF
Elementary School Gym	6,000 NSF	4,700—5,500 NSF
High School Gym	12,000 NSF	7,000—8,000 NSF
Media Center	2,020—3,650 NSF	Varies
High School Auditorium/Stage	2,650 NSF	Varies



Materials and Systems for Cost-Conscious School Design

- Simple Massing and Structure
- Flexible, Multi-Purpose Spaces
- Exterior Cladding and Finishes
- Interior Finishes
- Pre-Engineered Gymnasium Design
- Building Systems
- Preferred HVAC Design
- Process for Cost-Conscious Design



Simple Massing and Structure

- Translate program into few, simple volumes
- Every change must be meaningful
- Every change in massing or material is critical



Flexible, Multi-Purpose Spaces

MULTIPLE USES FOR EACH SPACE

Examples:

- Open stair and amphitheater
- Balcony as meeting space
- Teacher lounge, workroom & kitchenette

85% Occupancy Rule for all spaces

Use of nearby community resources (library, fields)



Exterior Cladding & Finishes: Simple, Less Costly

CHARTER SCHOOL



MSBA SCHOOL



Exterior Cladding and Finishes



Market conditions: constant evaluation with CM and Cost Estimator

- Limited palette
- Make the choice meaningful
- Insulated metal panel, especially for a pre-engineered gymnasium
- Simple details
- No compromises on envelope performance or insulation
- Schedule implications: time is money

Interior Finishes: Simple, Limited Palette

CHARTER SCHOOL



MSBA SCHOOL



Interior Finishes

CHALLENGES FOR CHARTER SCHOOLS

- Few, if any, facility staff
- Limited maintenance budget
- Healthy indoor air quality

SOLUTIONS

- No VOCs
- Linoleum or tile rather than VCT
- Highly durable materials, minimal maintenance
- Simple materials
- Wet Areas: ceramic tiles, possible epoxy floors
- High impact GWB: public spaces only
- Full acoustic separations



Pre-Engineered Gymnasia

- Foundation by site contractor
- Structure and enclosure by pre-engineered manufacturer
- Insulated panels with steel skins at walls and roof
- Cost savings and expedited schedule
- Added wood athletic floor with full A/C or partial A/C



Building Systems

SYSTEMS THAT ARE THE SAME AS MSBA SCHOOLS

- Life safety: fire alarm, fire suppression
- Lighting: LED's, daylight harvesting, occupancy sensors
- Plumbing: low water use
- Technology: Tel/Data, Smartboards, Wireless, Security

SYSTEMS THAT ARE DIFFERENT FROM MSBA SCHOOLS

- HVAC: varies widely



Preferred HVAC Design



HVAC SYSTEM DESIGN

EXCEL ACADEMY

Priorities:

- System operated by Business Manager
- No BMS, low need for Controls, low capital cost

Solutions:

- Hi efficiency RTUs with fulling heating, cooling and ventilation
- Zones by building exposure
- T stats averaging sensors
- Ceiling fans in double-height spaces

BOSTON PREPARATORY CHARTER SCHOOL

Priorities:

- High level on controls, rather than cost
- Every classroom and office with individual control

Solutions:

- Heating and VRF Cooling by split system heat pumps, ceiling mounted
- Fresh air ducted via rooftop ERVs
- RTUs for cafeteria, gym

ATLANTIS CHARTER SCHOOL

Priorities:

- Full operations and maintenance staff
- Life cycle costing
- Low operating expenses

Solutions:

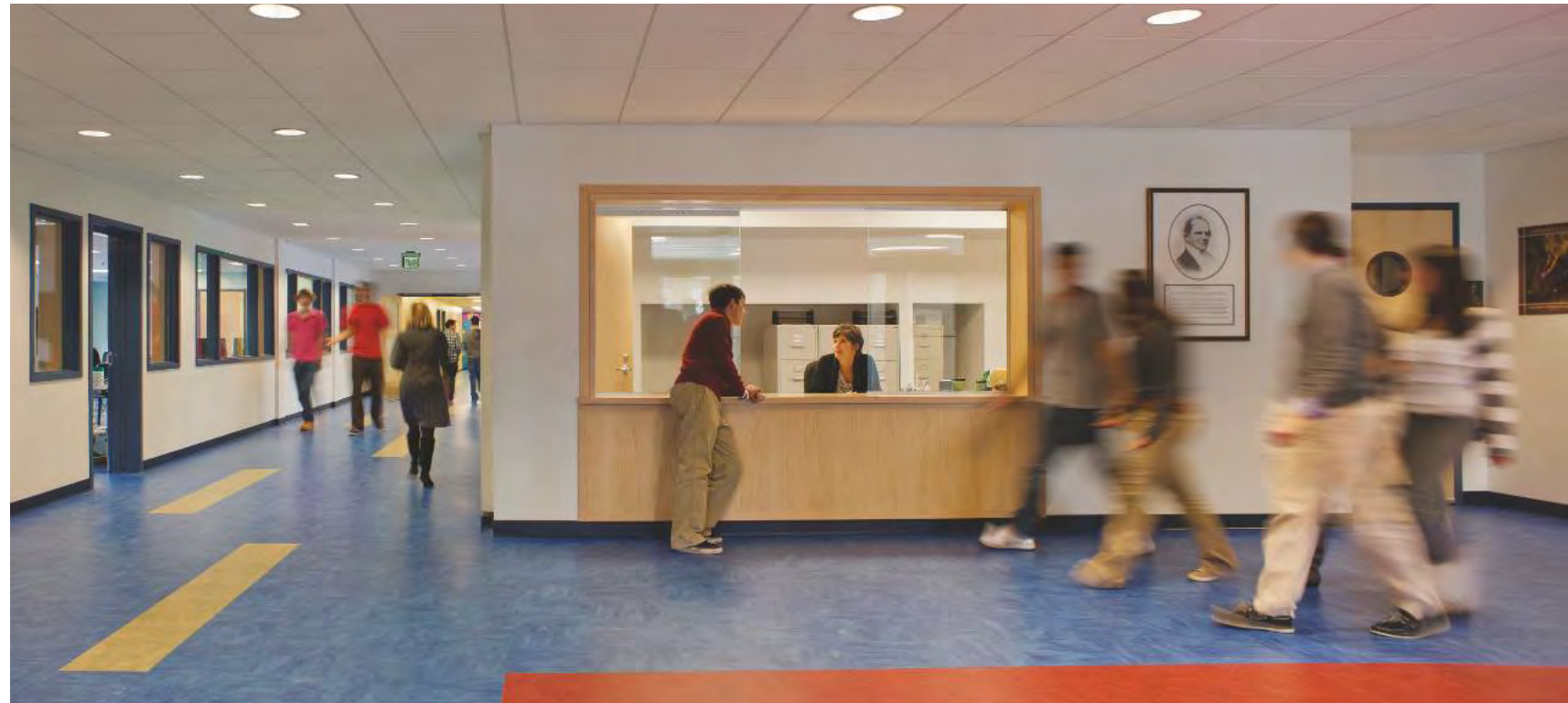
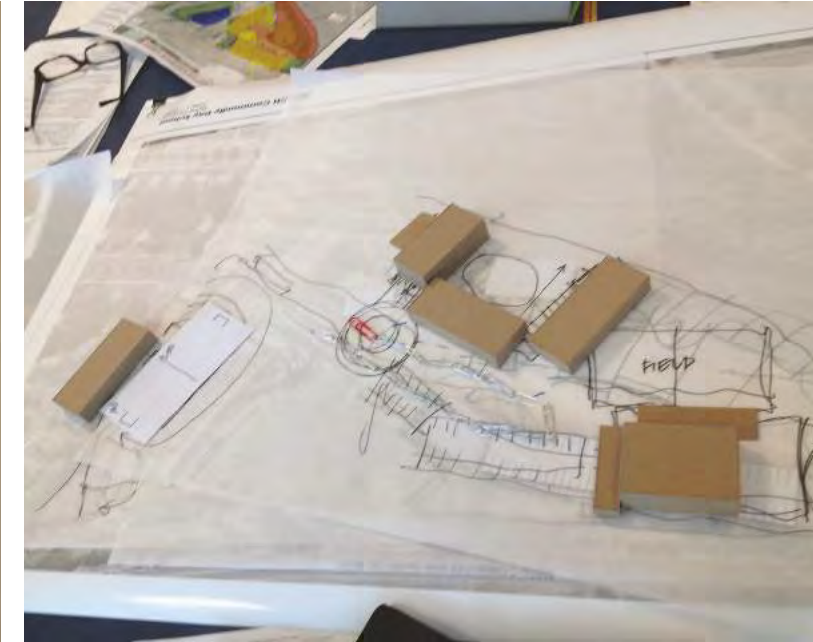
- Displacement air system for full heating cooling and ventilation
- Excellent indoor air quality
- Excellent life cycle costing and energy savings

Preferred HVAC Design: Life Cycle Costing

Option	System	Gross Capital Investment*	Annual Elec. Cons. (kWh)	Annual Gas Cons. (MBTU)	Annual Electric Cost	Annual Gas Cost	Combined Utility Cost	Annual Utility \$/s.f.	Annual kBTU/s.f. (EU)	Annual Maint. Cost	Combined Annual Expense	Combined Expense Savings**	Total Life-Cycle Savings***	Discounted Payback (Years)****
1	1. Dehumidification displacement ventilation diffusers with perimeter hot water heating radiation 2. 100% outside air gas-fired heating/direct expansion dehumidification ventilating units with energy recovery 3. 100% outside air gas-fired heating/direct expansion cooling ventilating units with energy recovery with terminal chilled/hot water coil induction units 4. High efficiency gas-fired condensing central boiler plant 5. High efficiency air-cooled chiller plant	\$3,150,700	625,830	2,602.9	\$106,391	\$33,837	\$140,228	\$1.3 4	45.1	\$22,200	\$162,428	\$23,773	\$1,245,172	Instant*****
2	1. Full air-conditioning displacement ventilation diffusers and perimeter hot water heating radiation 2. Gas-fired heating/direct expansion cooling VAV ventilating units with energy recovery with terminal VAV boxes with CO2 controls 3. 100% outside air gas-fired heating/direct expansion cooling ventilating units with energy recovery with terminal chilled/hot water coil induction units 4. High efficiency gas-fired condensing central boiler plant 5. High efficiency air-cooled chiller plant	\$3,670,600	567,340	2,570.5	\$96,447	\$33,416	\$129,863	\$1.24	42.9	\$29,200	\$159,063	\$27,138	\$847,839	Instant*****
3	1. Hot/chilled water coil induction units 2. 100% outside air gas-fired heating/direct expansion cooling 100% ventilating units with energy recovery serving terminal chilled/hot water coil induction units 4. High efficiency gas-fired condensing boiler plant 5. High efficiency air-cooled chiller plant	\$4,081,300	666,560	2,783.7	\$113,315	\$36,188	\$149,503	\$1.4 2	48.2	\$30,500	\$180,003	\$6,198	-\$114,266	N/A*****
4	1. Dehumidification overhead ventilation system with perimeter hot water heating radiation 2. 100% outside air gas-fired heating/direct expansion dehumidification CV ventilating units with energy recovery 3. 100% outside air gas-fired heating/direct expansion cooling ventilating units with energy recovery with terminal chilled/hot water coil induction units 3. High efficiency gas-fired condensing central boiler plant 4. High efficiency air-cooled chiller plant	\$3,064,900	623,610	2,603.8	\$106,013	\$33,849	\$139,862	\$1.3 3	45.1	\$22,200	\$162,062	\$24,139	\$1,340,584	Instant*****

Process for Cost-Conscious Design

- Provide data for client decision making
- Test the current market
- Interpolate the functional requirements into materials and systems selection
- Design team collaboration to ensure effective choices
- Discipline and rigor: honesty about what the budget buys



Delivery Method

- **MSBA Funded Schools**

- Funded through taxes
- 50 year useful life required
- Adheres to MSBA space guidelines
- Can be symbol of the Community

- **Charter Schools**

- Created by a small group with an educational vision
- Paid for through fund-raising and loans
- Ensure costs can be covered by income
- Move rapidly to get students enrolled



Charter - Functional Economy

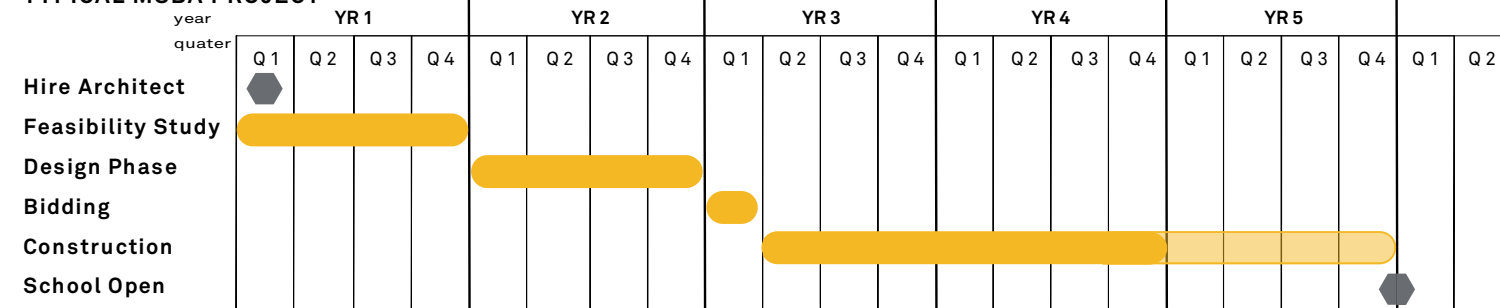


MSBA - Civic Pride

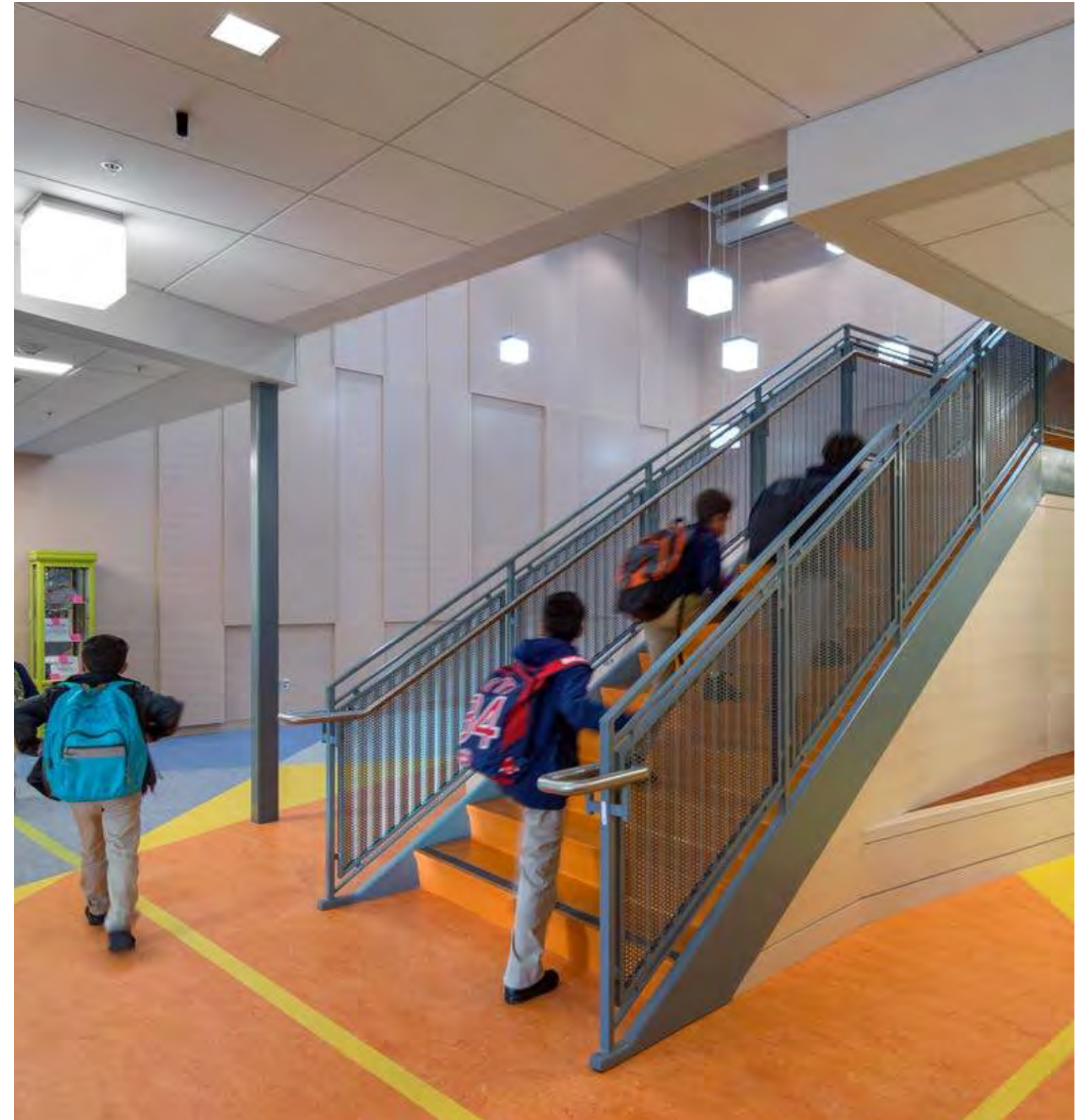
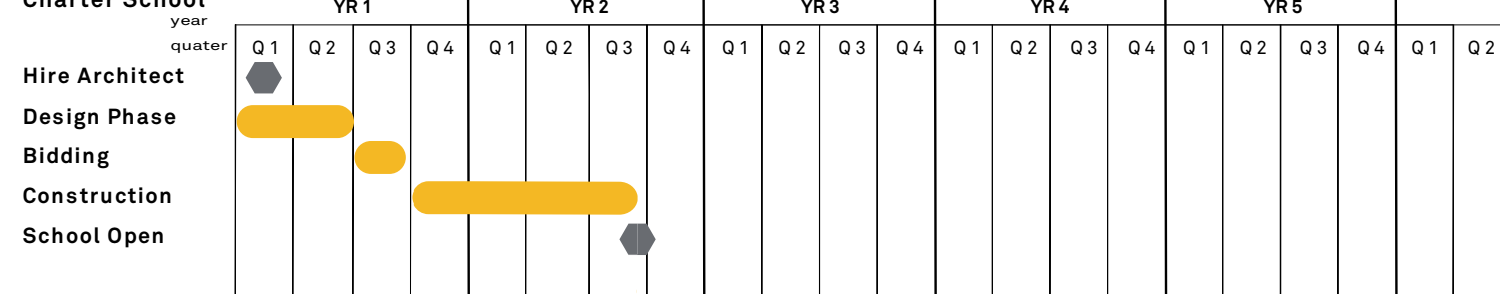
Project Schedule

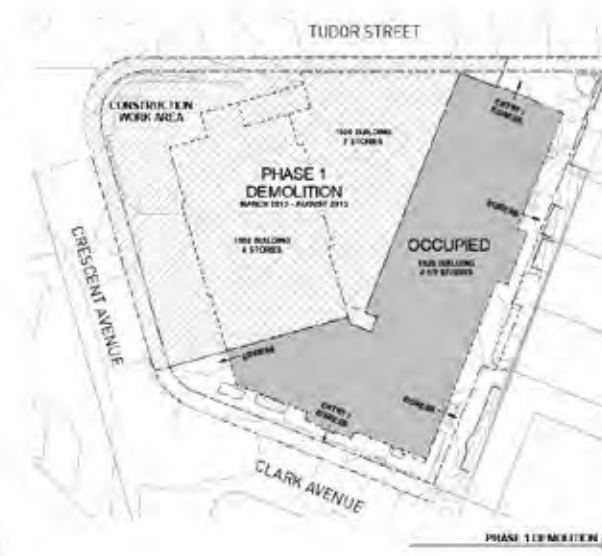
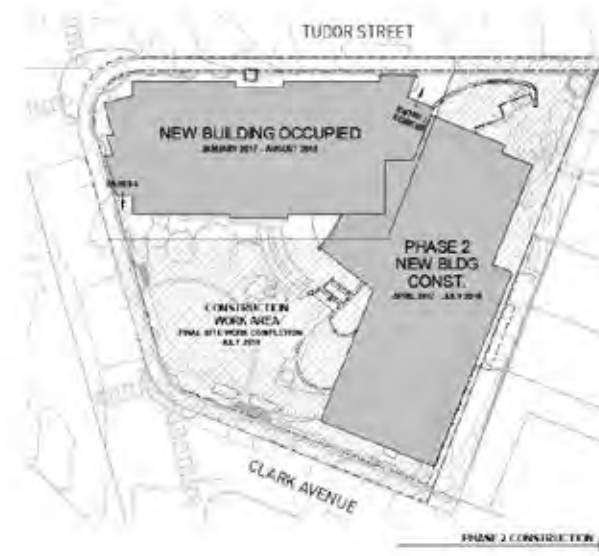
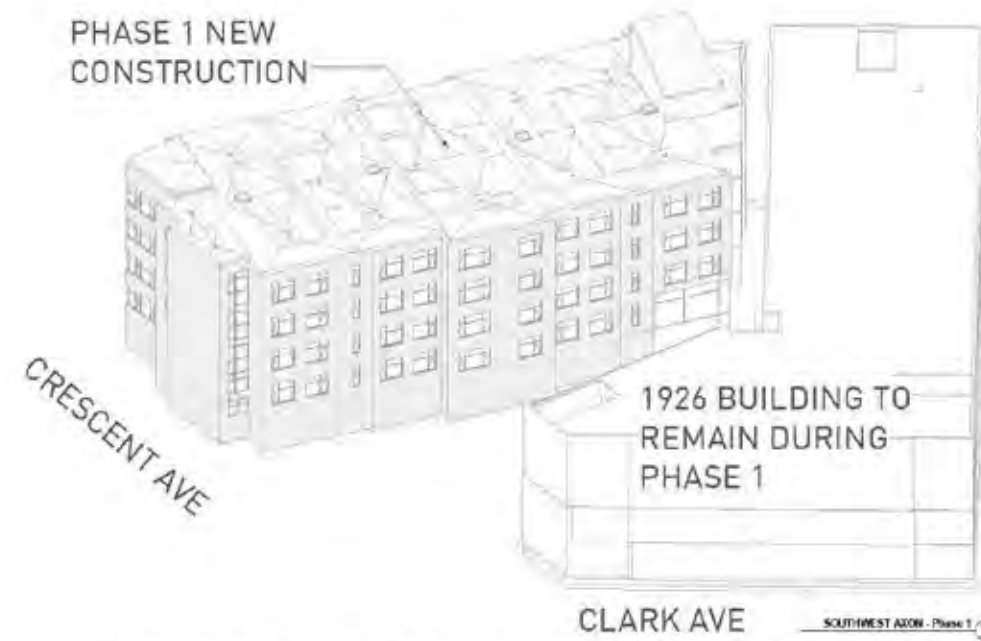
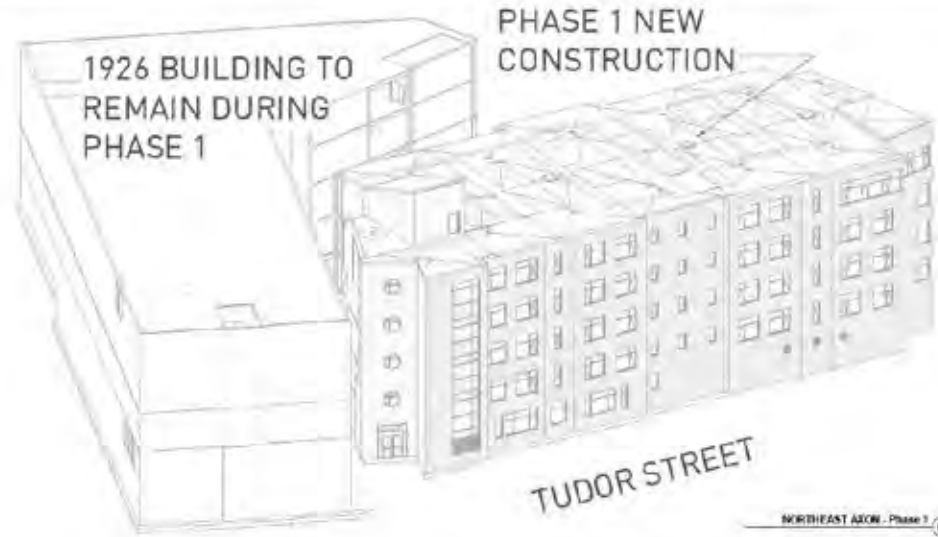
- Charter's funding model encourages speed
- Fast Design & Construction schedules require simplicity
- 19 months hire to move in (Alma del Mar) • vs. 48 to 60 months for MSBA


TYPICAL MSBA PROJECT



Alma Del Mar Charter School






 HMFH Architects, Inc.
 1000 N. 1st St.
 Charlotte, NC 28202
 Phone: 704.375.1111
 Fax: 704.375.1112
 www.hmfh.com

Construction Documents - Addenda Incorporated
 01.25.2016

CLARK AVENUE MIDDLE SCHOOL
 CHARLOTTE, NC
 Overall Phasing Plans &
 Axonometric Views
 SCALE: AS SHOWN
 DRAWN BY: JAC
 CHECKED BY: JAC

A1.2



Massachusetts School Building Authority
Funding Affordable, Sustainable, and Efficient Schools in Partnership with Local Communities

ARROWSTREET

HM
FH

studio **g**architects
building sustainable communities

Thank you!
Open Discussion.



Massachusetts School Building Authority
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ARROWSTREET

H M
F H

studio **g** architects
building **sustainable** communities