



Mid-Century Modern-ization

Don Gillmore, *Gillmore Consulting*
 Ross Parker, *Bassetti Architects*
 Corrie Rosen, *Mahlum*

\$30,000,000,000

25,000

60%

57

then

± 1960

now

1960

2012



Economy

Average cost of a new home:

\$ 16,500.00 \$ 282,600.00

Median income per year:

\$ 5,315.00 \$ 51,413.00

Cost of a first class stamp:

\$ 0.04 \$ 0.45

Cost of a gallon of regular gas:

\$ 0.31 \$ 3.68

Cost of a dozen eggs:

\$ 0.57 \$ 1.73

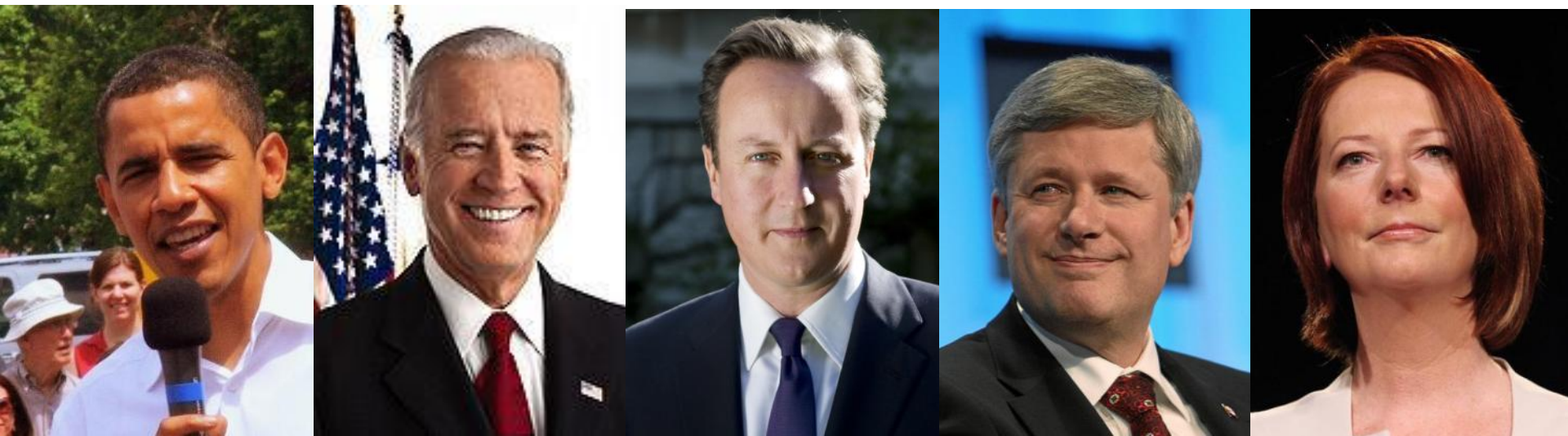
Cost of a gallon of milk:

\$ 0.49 \$ 3.67

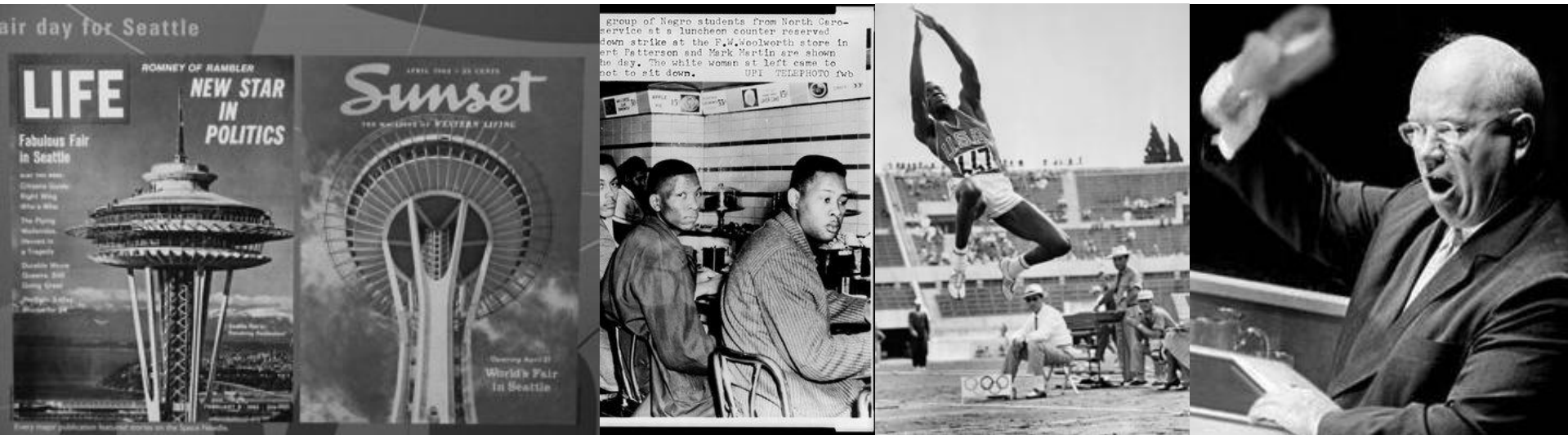
Leadership Then



Now



Headlines Then

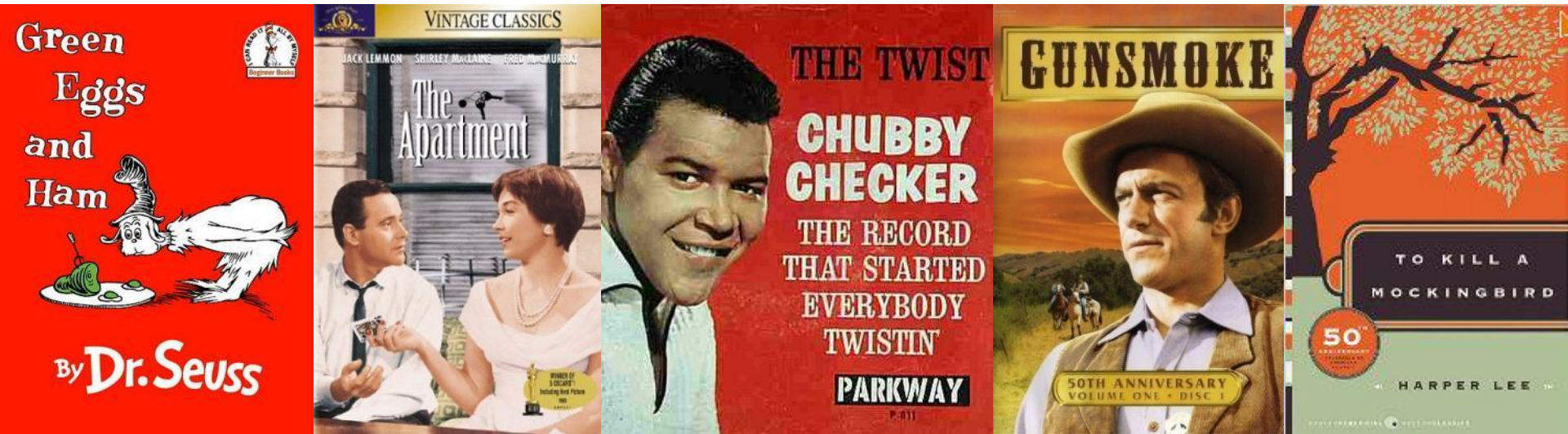


Now



Arts | Culture

Then



Now





evolution of pedagogy

1780's – one room schoolhouse: multi-age, community based

1800's – lancaster model: fixed seats, large classrooms, rote memorization

1850's – the quincy plan: 'graded' classes, 31'x26' for 55 students

1910's – the gary plan: 'work-study-play' specialized spaces

1940's – crow island: utilizing form, space and order to enhance learning

1950's – boomers: under population pressure, crow island plan was 'cloned'

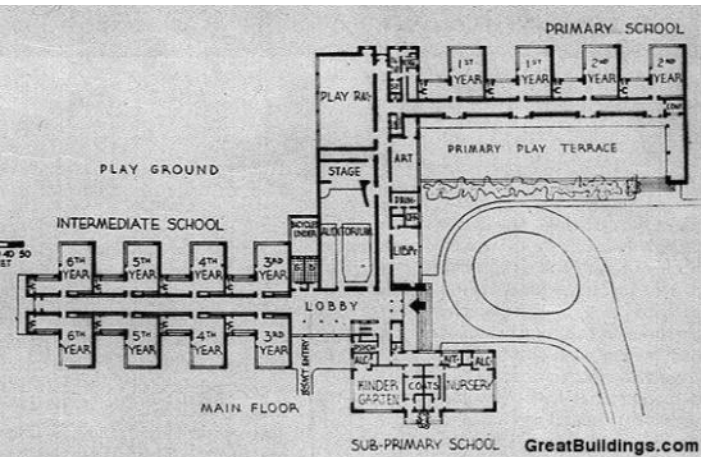
1960's – open plan: "...freedom for self-directed education..."

1970's – energy crisis eliminates windows, renovation abounds

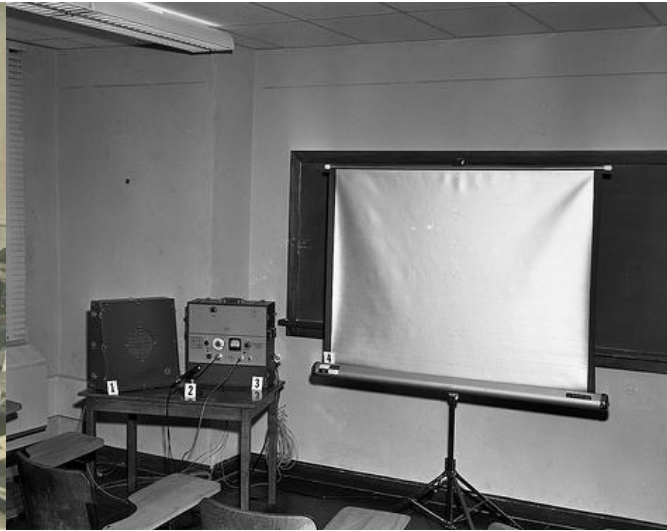
1980/90's – 'schools within schools', 'neighborhoods' & 'houses'

21st century and beyond

Education



Education Then

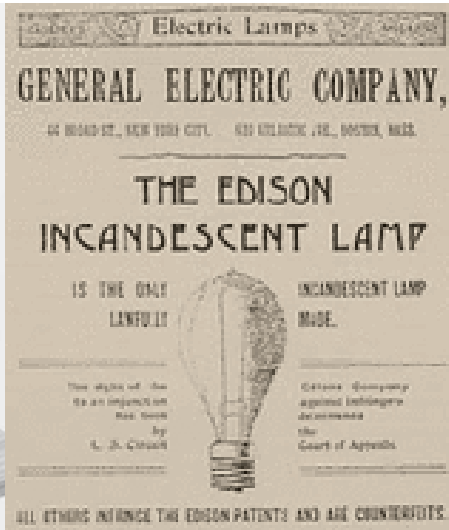


Now

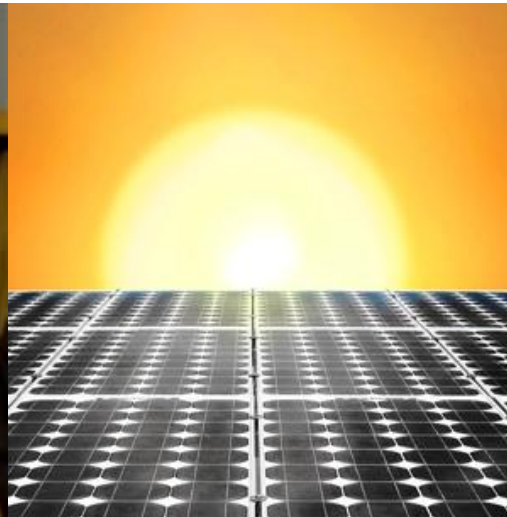
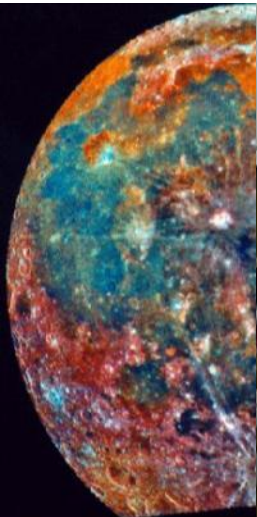


Technology

Then



Now



Exemplary Modernizations

Cascade Middle School

Longview, WA

NAC|Architecture



Morse & Ezra Stiles Colleges at Yale

New Haven, CT

Kieran Timberlake



Hinman Research Building

Atlanta, GA

Lord, Aeck & Sargent

in collaboration with Office dA



Joplin Interim High School

Joplin, MO

CGA Architects and DLR Group



The School Without Walls

Washington, DC

Ehrenkrantz Eckstut & Kuhn



Bowdoin College Studzinski Recital Hall

Brunswick, ME

William Rawn Associates, Architects, Inc



Seattle Public Schools: Mid-Century Modernizations



Agenda

Planning

Solutions

Project Walkthroughs

Interactive Project Discussion

Planning



Stakeholders

District

Principals

Staff

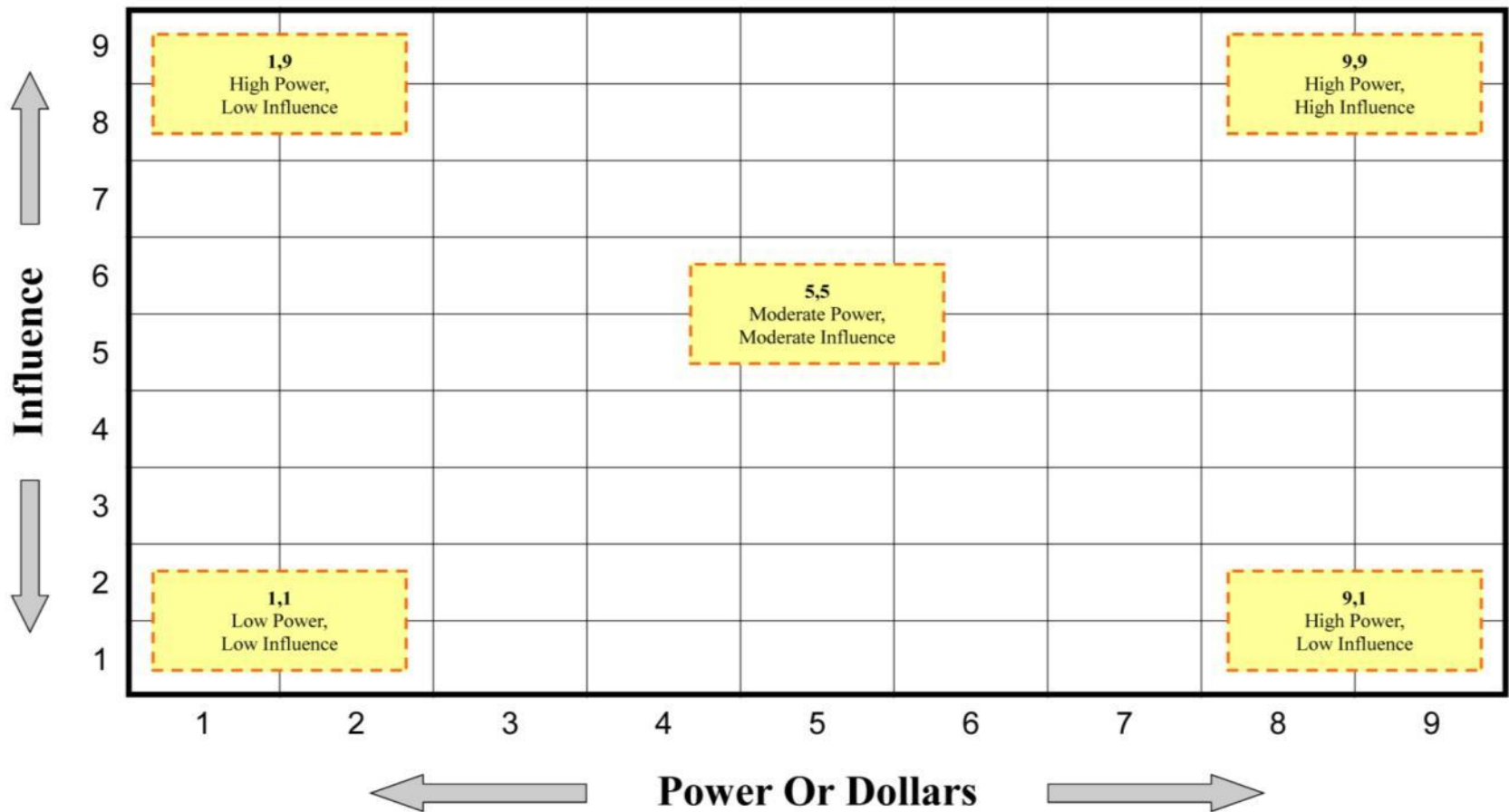
Students

Community

Authorities

Stakeholder Grid

School Remodeling / Construction Stakeholder Grid





Chief Sealth Intl. HS Bond Goals

Locate new replacement
Denny Middle School on the
Chief Sealth site

New shared Dining Commons
and kitchen

Structural remediation to
address seismic risk

Mechanical & electrical upgrades

8 new classrooms

Technology access & upgrades in
all classrooms

New auditorium roof



Chief Sealth Intl. HS Stakeholder Goals

Design that celebrates strong connection & reinforces community school

Schools that will provide a personalized path from 6th – 12th grade

Flexible facility that allows each school to operate together or separately

Gymnasium & Auditorium upgrades

Support expanded learning opportunities and technology

CSIHS/DIMS - Before



CSIHS/DIMS - After



Chief Sealth Intl. HS / Denny Intl MS

Total Students: 2,100

Grades: 6-12

Areas

exist CSIHS:

216,000 sf

new: 135,000 sf

total: 351,000 sf

Construction Cost

CSIHS/DIMS campus:

\$89.4m / \$255 psf

Old DIMS: \$6.4m

Total: \$95.8m / \$273 psf

Site Areas

CSIHS: 17.2 ac

Old DIMS: 4.2 ac

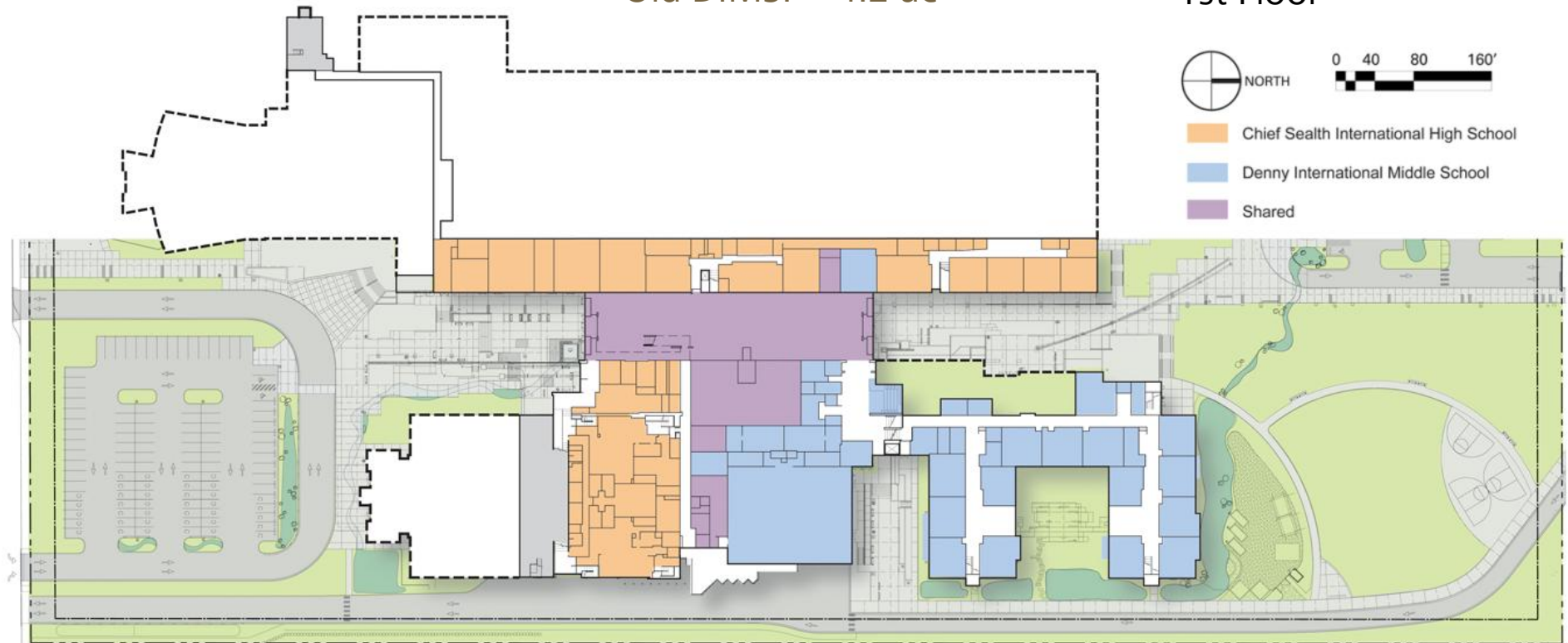
1st Floor



NORTH

0 40 80 160'

- Chief Sealth International High School
- Denny International Middle School
- Shared



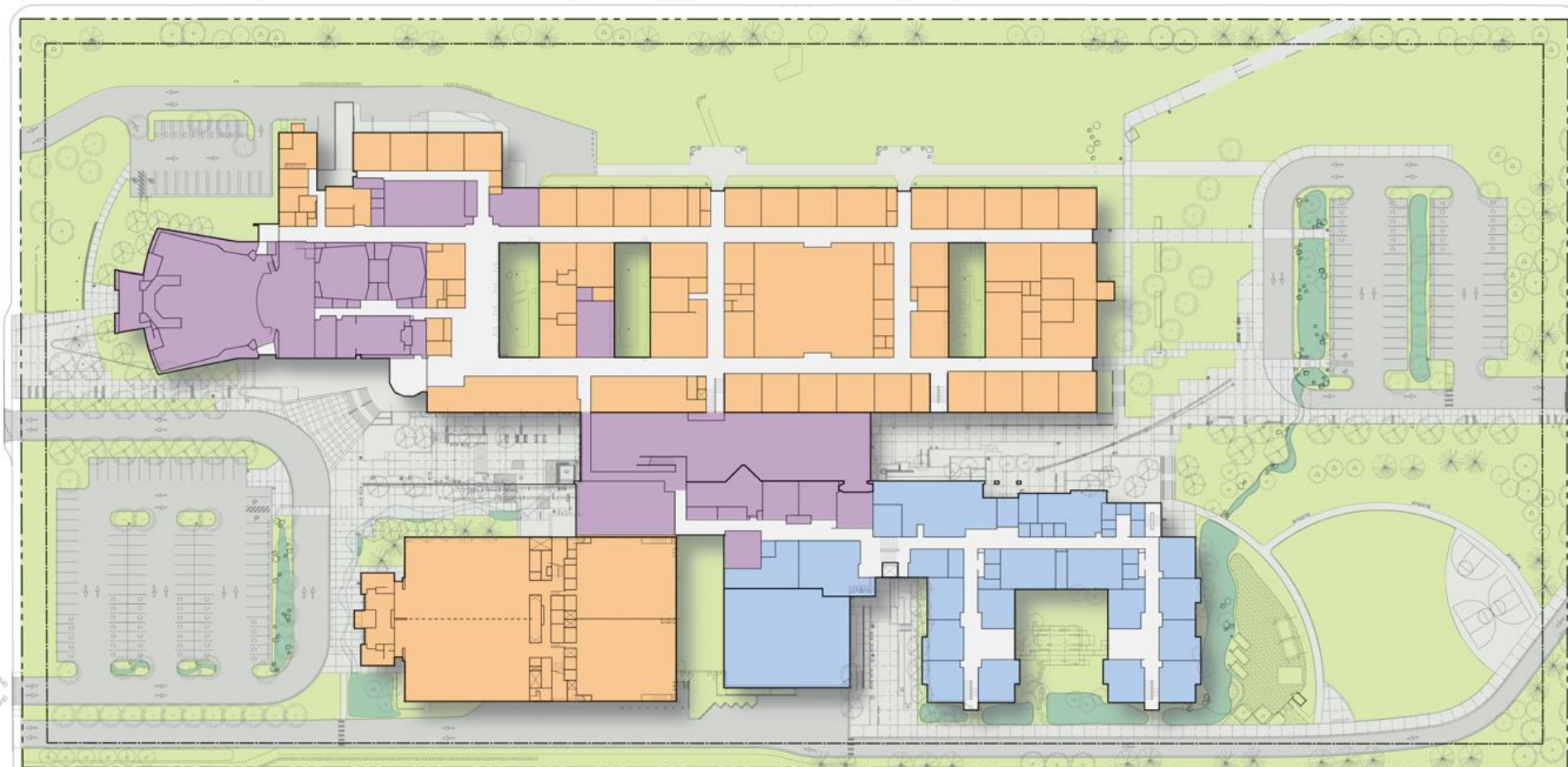
2nd Floor



NORTH



- Chief Sealth International High School
- Denny International Middle School
- Shared





Nathan Hale HS Bond Goals

New gymnasium and new cafeteria

Exterior renovation, new roof, new energy-efficient windows

Technology access and upgrades for classrooms

Structural remediation to address seismic risk

Air and water quality upgrades, new fire alarm and sprinkler system

A design that facilitates small learning communities

ADA accessibility



Nathan Hale HS Stakeholder Goals

Design that supports adolescent
life + learning

“Put Student at the Center”

Welcoming, safe, accessible
school

Flexible facility

Aesthetically pleasing design

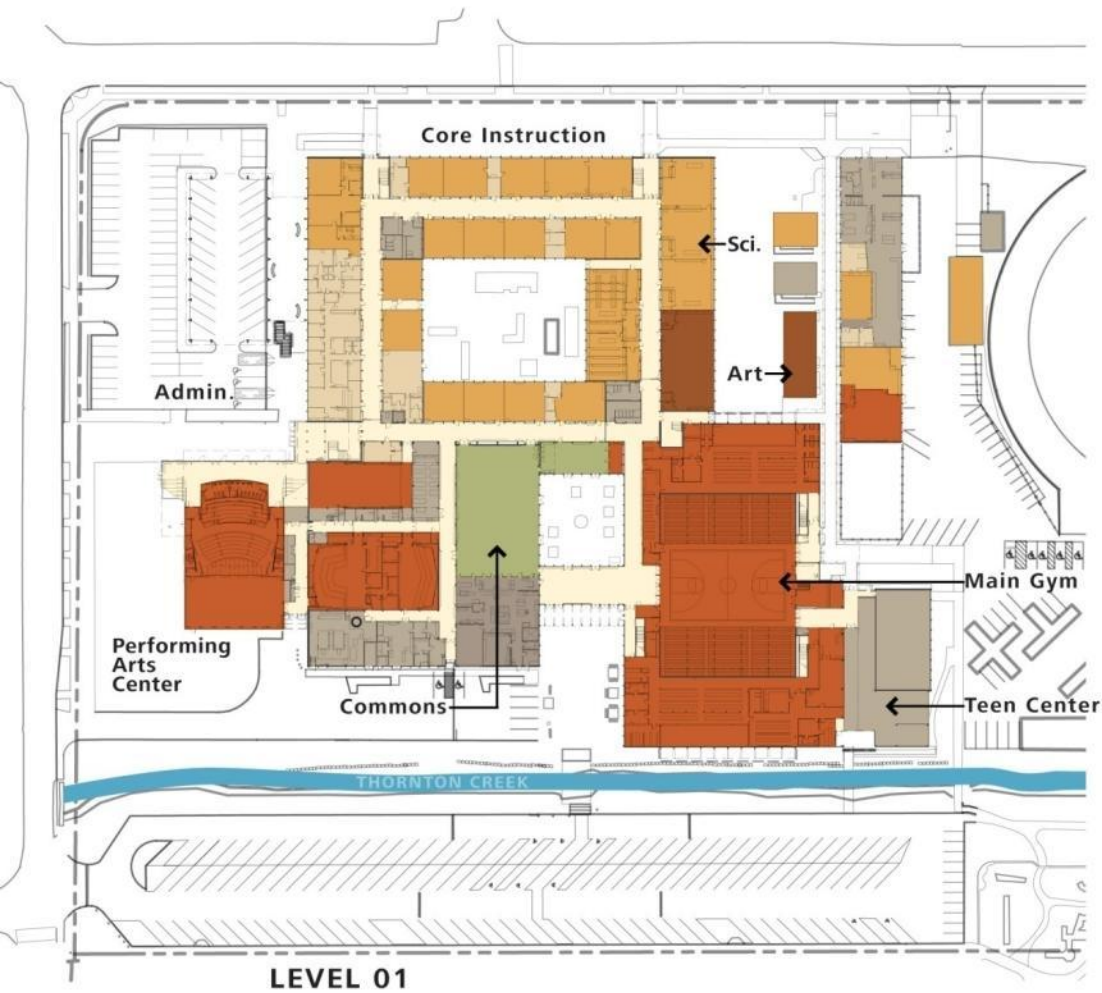
Improve surrounding
community, community
connections

Minimized construction impact

Green school

No more floods!

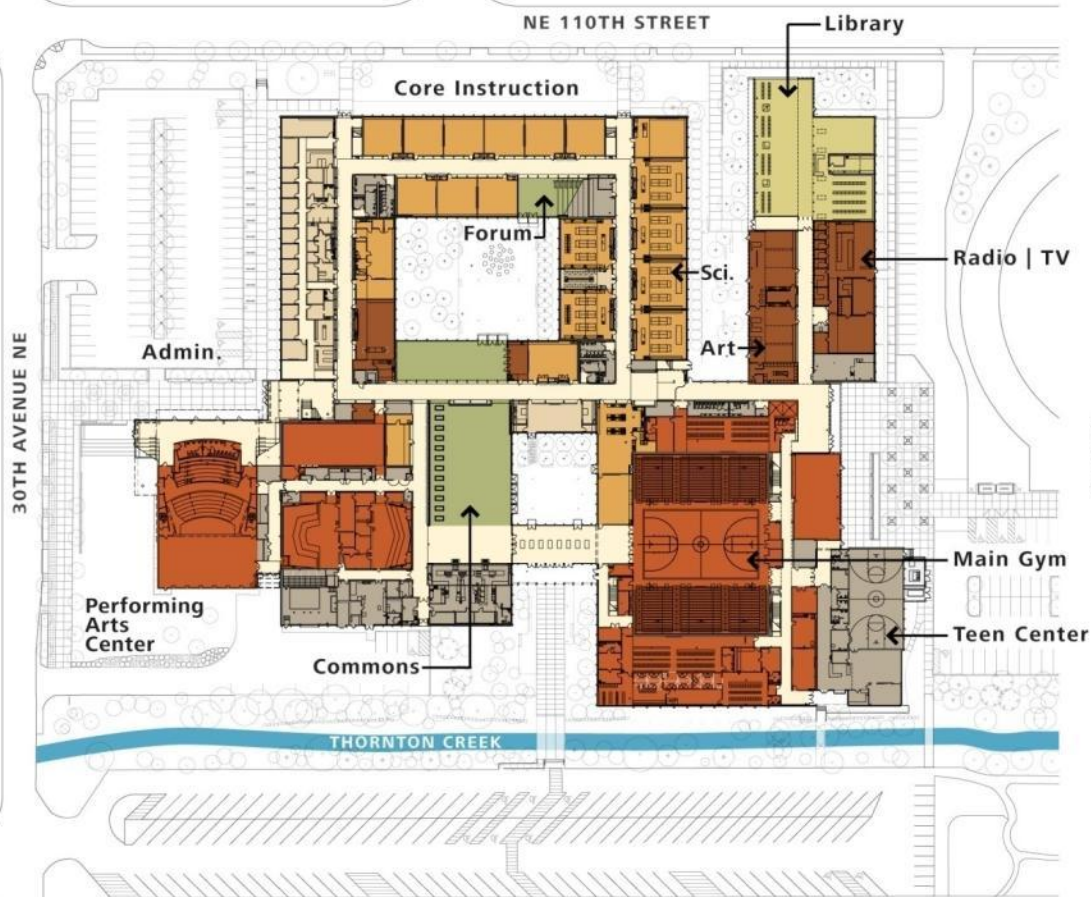
Nathan Hale High School - Before



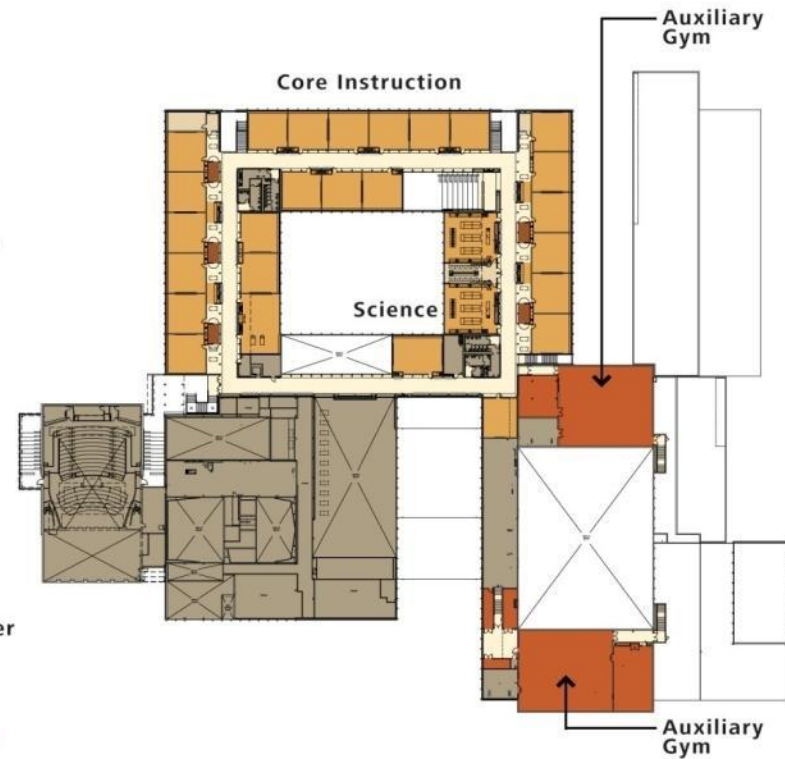
Nathan Hale High School - After

Total Cost: \$54 million
Cost/sf: \$225/sf
Grades: High School (9-12)
Capacity: 1400 students

Site Area: 18.8 acre
Building Area: 218,500sf
Project Delivery: Low-Bid|GCCM



LEVEL 01



LEVEL 02

Solutions



Solutions

Budget + Schedule

Structural

Systems

Learning Spaces

Budget + Schedule



CSIHS

3 projects

3 contracts, 7 Bid dates

General Contractor (low bid) &

GCCM (General Contractor | Construction Manager) (2)

Unoccupied and Occupied Sites

Maintain, upgrade services





Project 01

2009

216,000sf

\$11.3 million

Low-bid (JV Constructors)



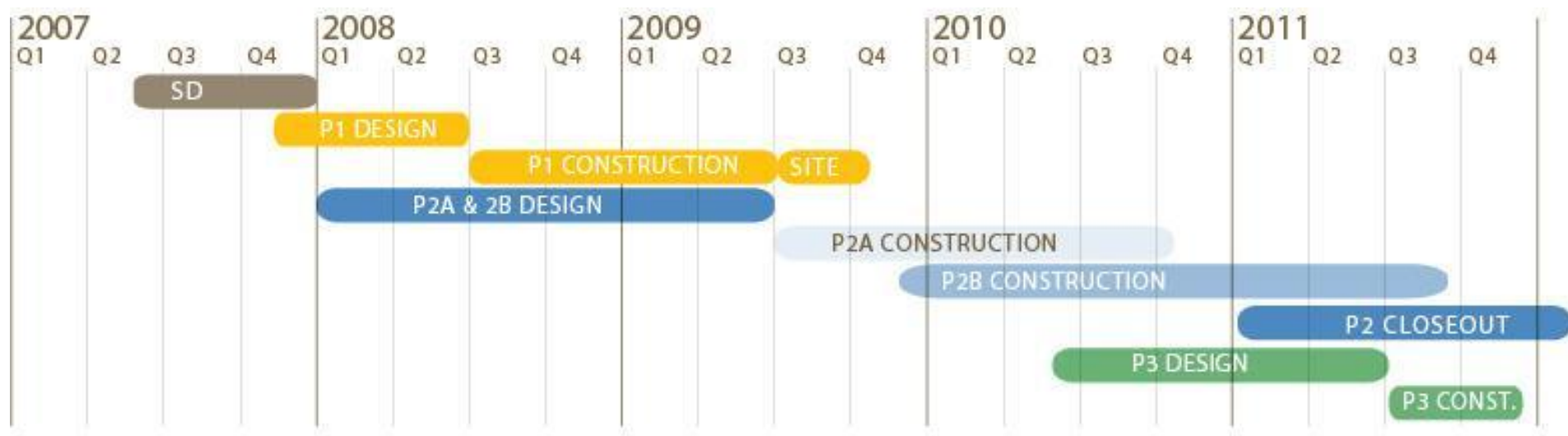


Project 02
 2010 & 2011
 216,000sf renovation
 130,000sf new
 \$84 million
 GCCM (Absher)





Project 03
 2011
 117,000sf demo
 7 acres
 \$6.4 million
 GCCM (BNBuilders)





NHHS

2 projects, 7 phases (excludes the PAC)

4 contracts

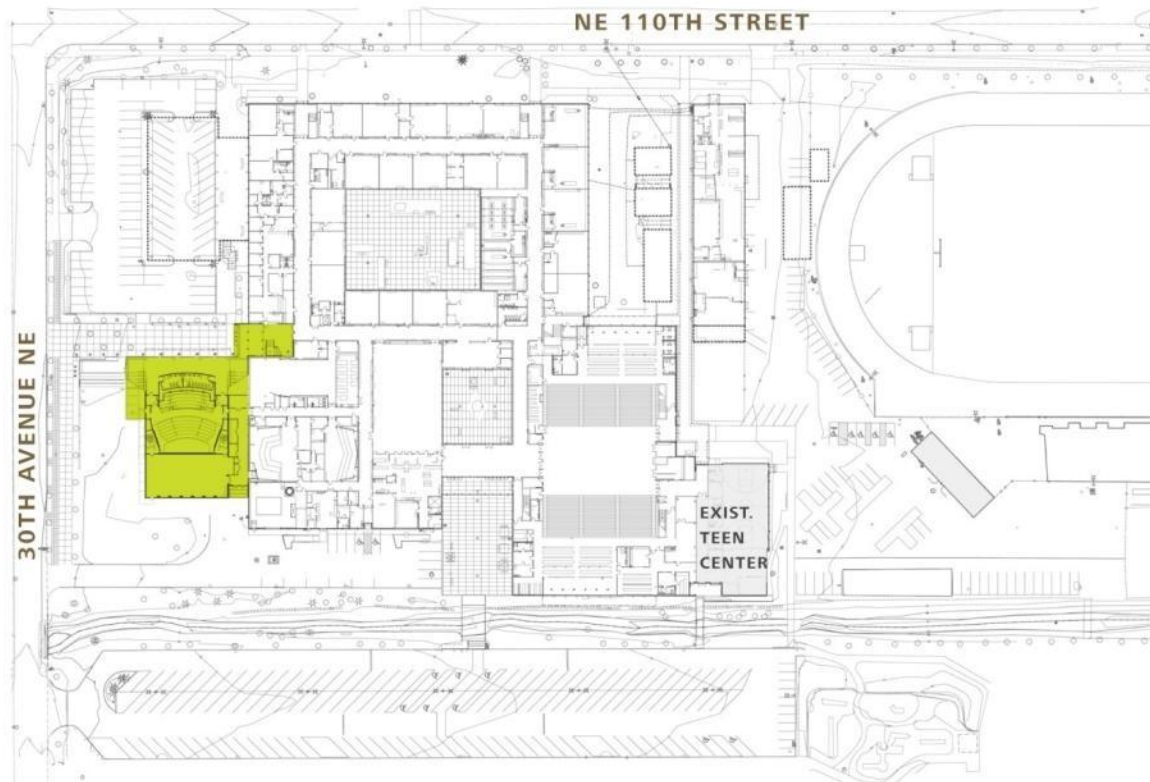
Low-bid

GC|CM (General Contractor | Construction Manager)

Occupied site

Maintaining existing services

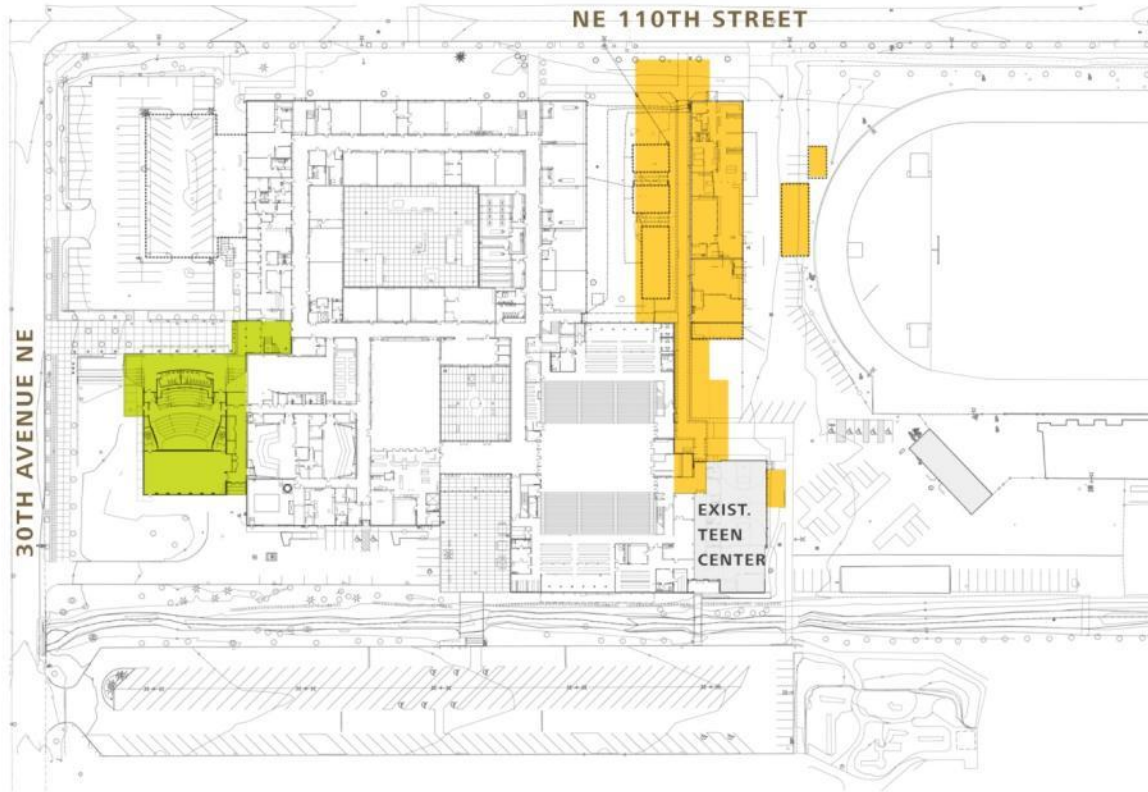
5 Owner moves!



Performing Arts Center
2005
23,500sf
\$6.8 million
GCCM (Sellen)

- PAC (2005)
- PHASE 1.0
- PHASE 2.2
- PHASE 2.3
- PHASE 2.4
- TEMPORARY PORTABLE CLASSROOM





Project 01

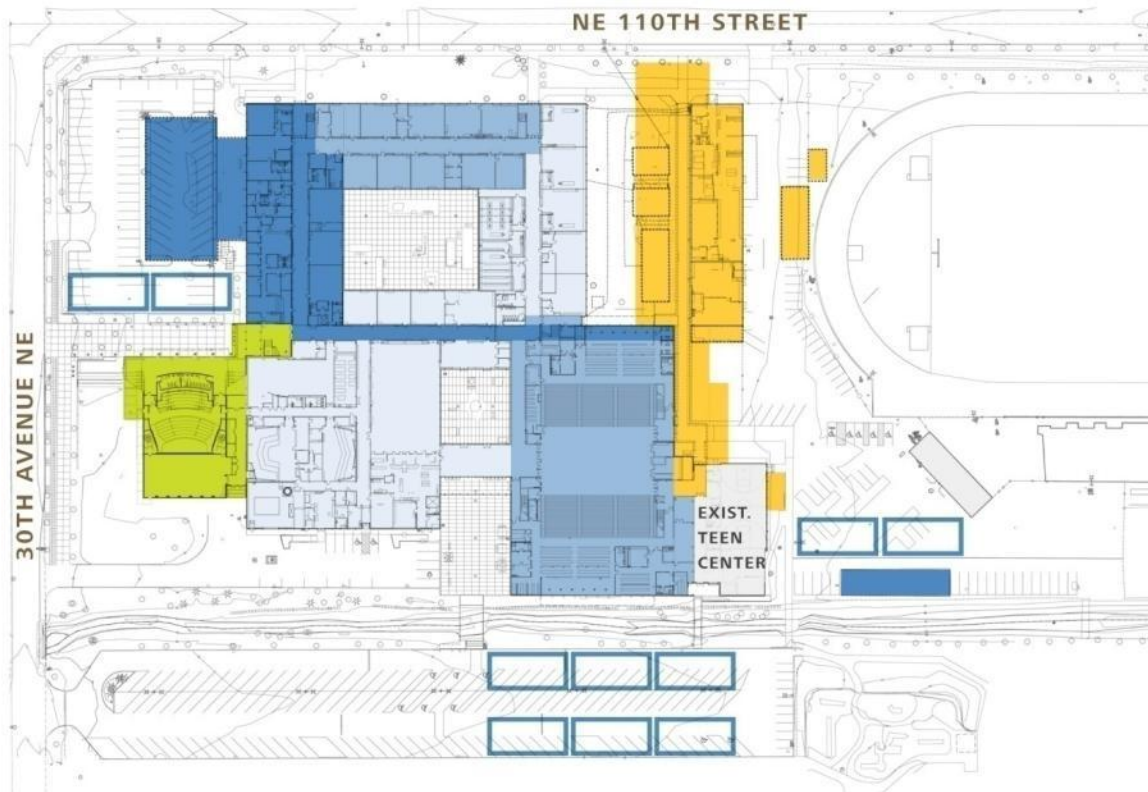
2009

26,940sf

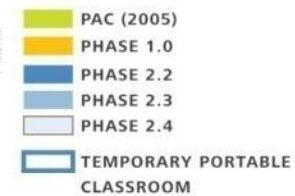
\$10.6 million

Low-bid (Absher)





Project 02
 2011
 191,204sf
 \$43.4 million
 GCCM (Absher)





Bond Dollar Savings

	CSIHS/DIMS	NHHS	
Renovation	\$ 226 /sf	\$ 225 /sf	
New Construction	\$ 300 /sf	\$ 300 /sf	
Savings	\$ 74 /sf	\$ 75 /sf	(25%)

Structural



CSIHS – Structural

Existing 1957 building and 1967 addition, 2004 remodel upgrade

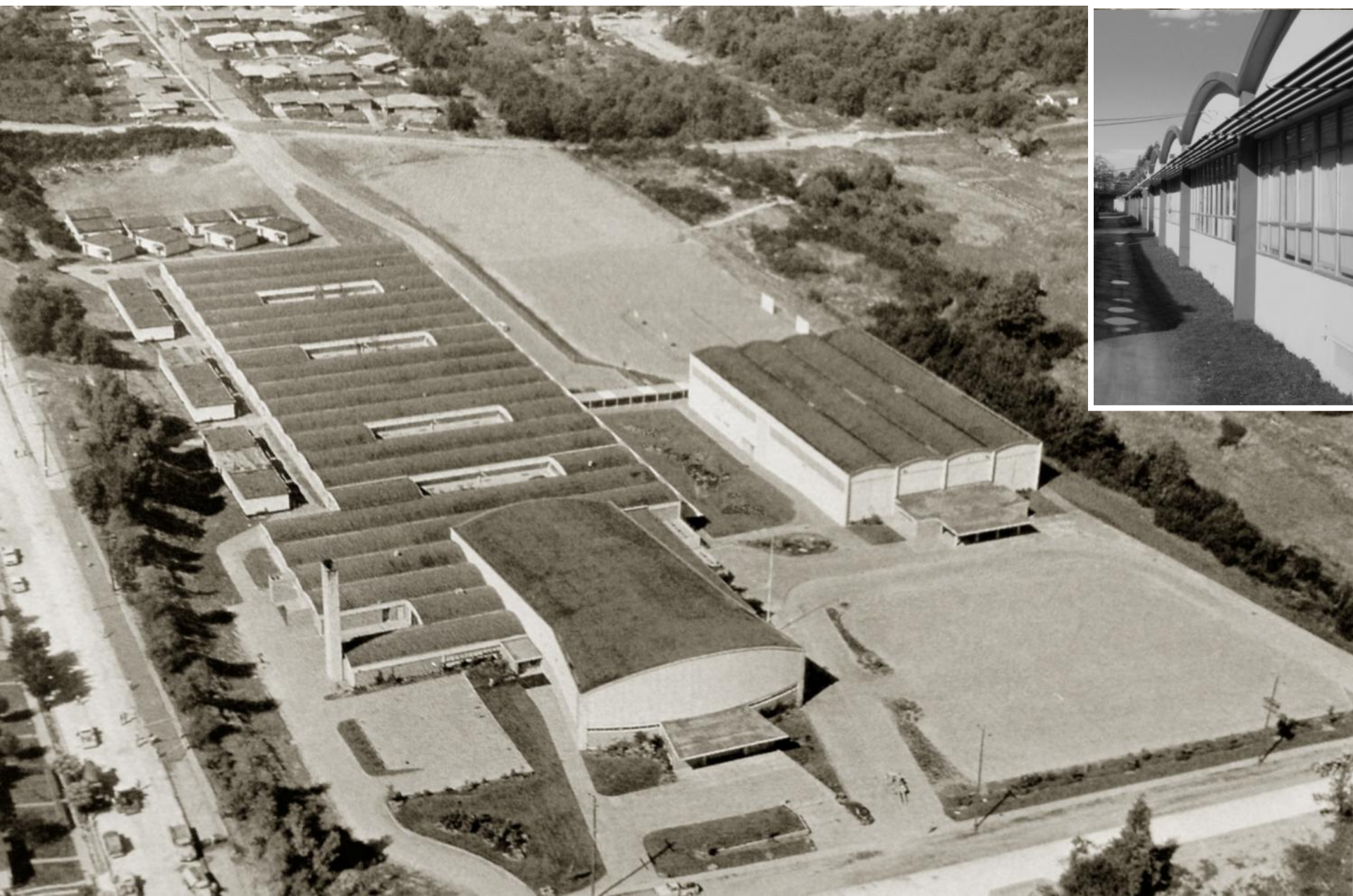
Thin shell concrete barrel vaults with cast-in-place concrete structure

Unreinforced masonry walls



Unreinforced glass blocks

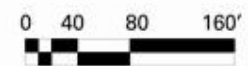
School built into an existing slope. Two stories on low side, one story on upper hill side, structural slab on grade

Maintain existing building & protect existing surfaces





-  New Shear Walls
-  Masonry Wall Mitigation















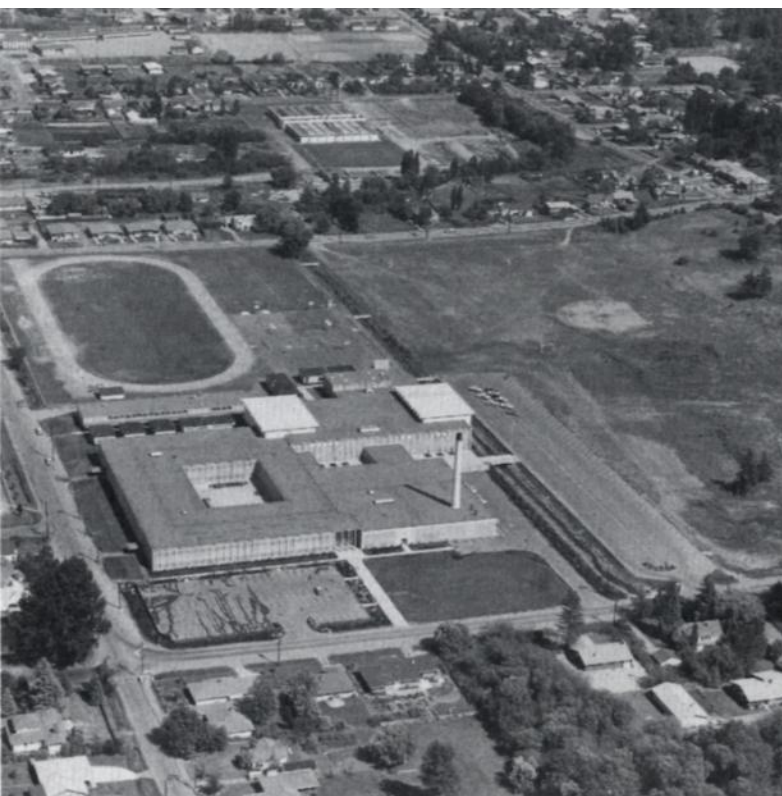
NHHS – Structural

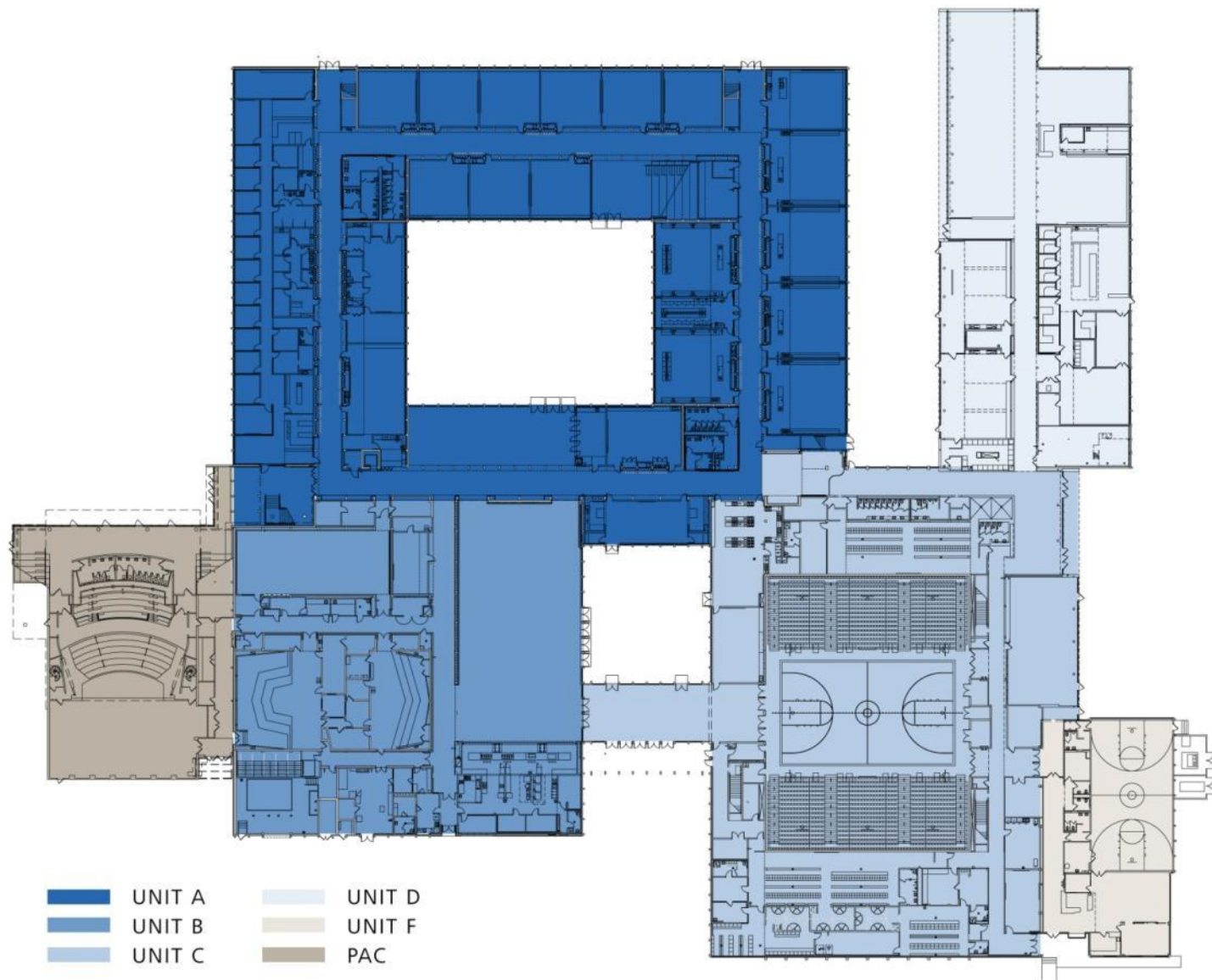
Existing 1963 + 1973 building

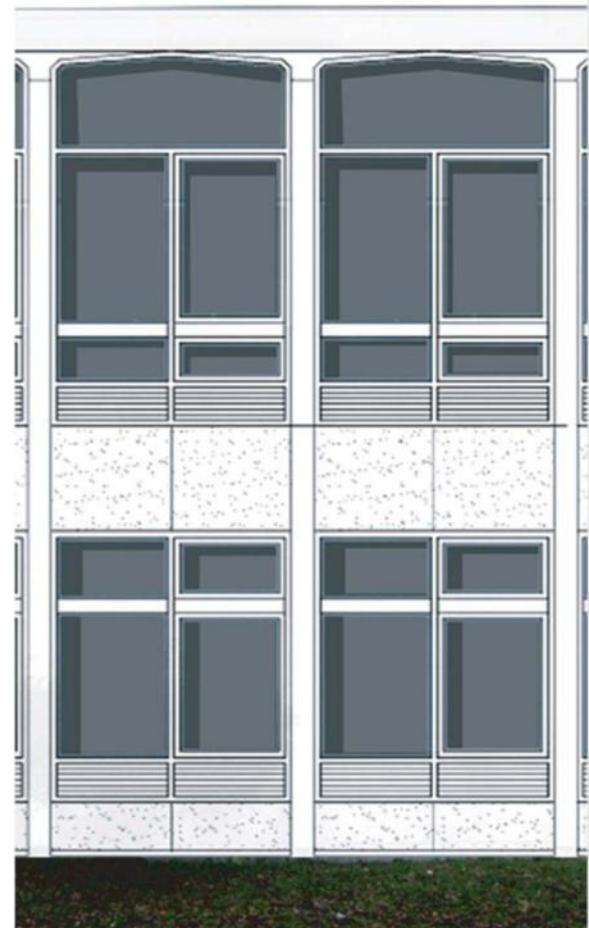
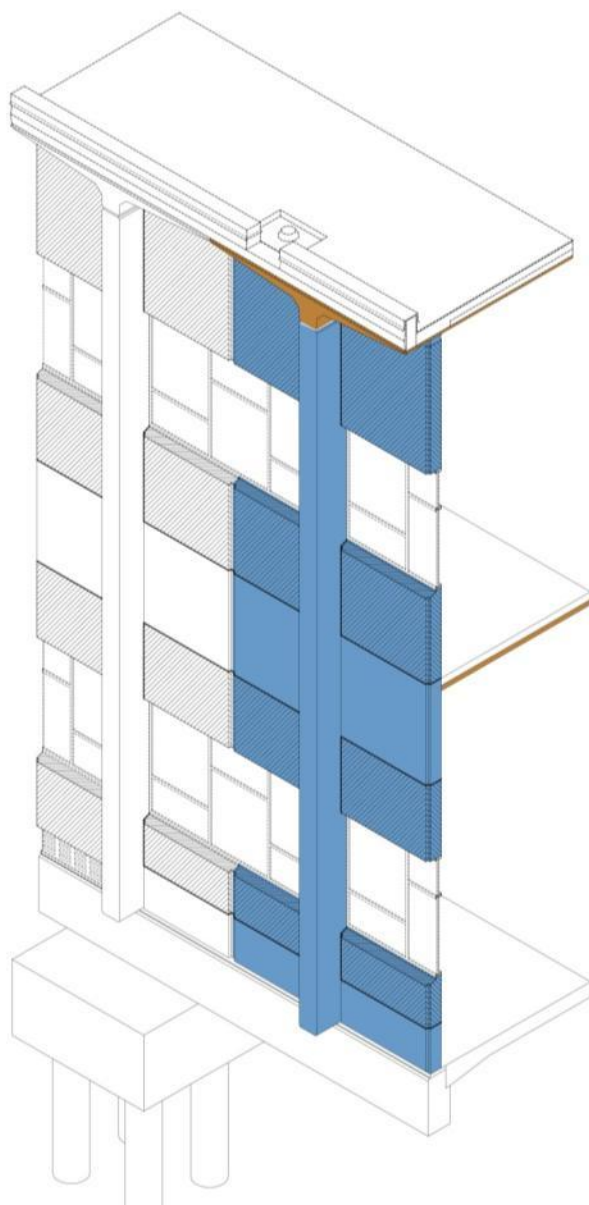
Pre-cast and cast-in-place
concrete structure, one and
two-stories with prestressed
concrete T-beams

Ground floor two-way
structural slab supported by
grade beams on 50-foot
timber piles

Liquefaction zone

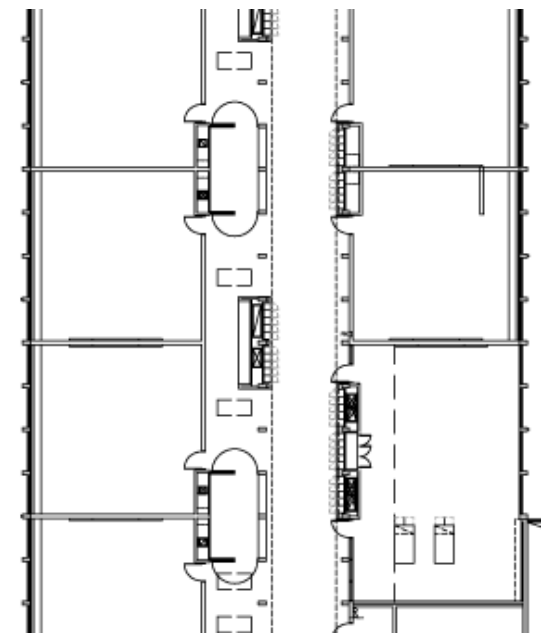






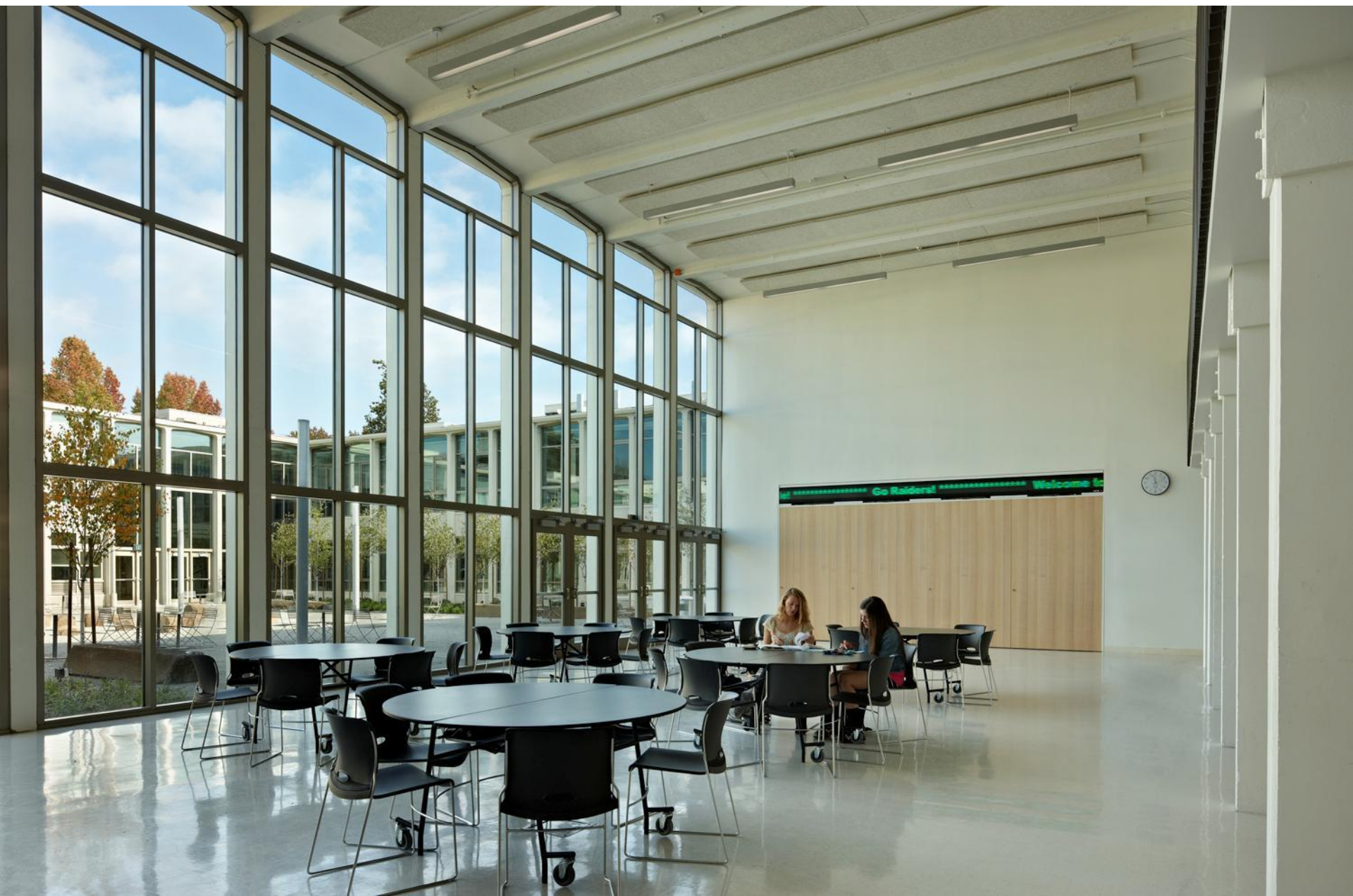












Systems



CSIHS – Systems

Maintain building shell

New addition

Existing tunnel system

Service bulkheads in corridor

Individual fan coil units

Windows – 1957 uninsulated

Walls – 1957 uninsulated

Auditorium roof – 1970

Planted roof - new construction

Exterior sunshades & skylights

On-site stormwater mitigation

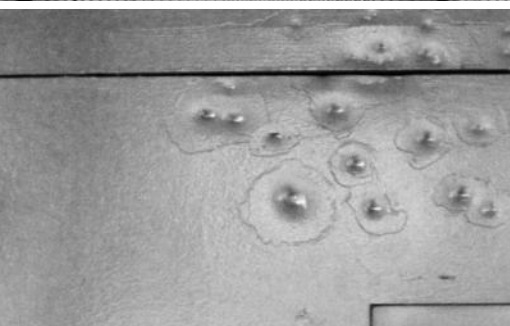
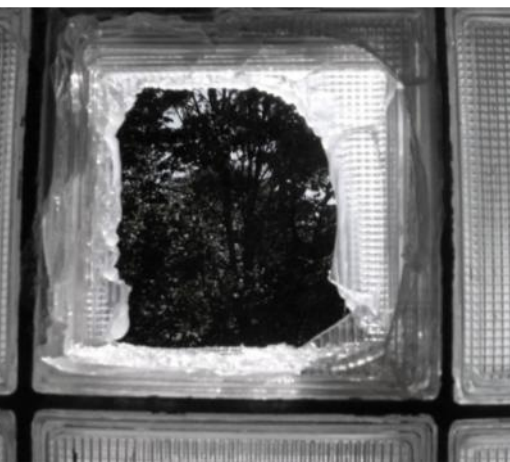
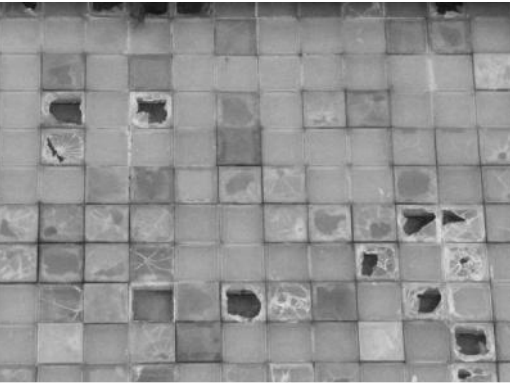
Glass blocks – broken, unsafe

Doors – uninsulated, damaged

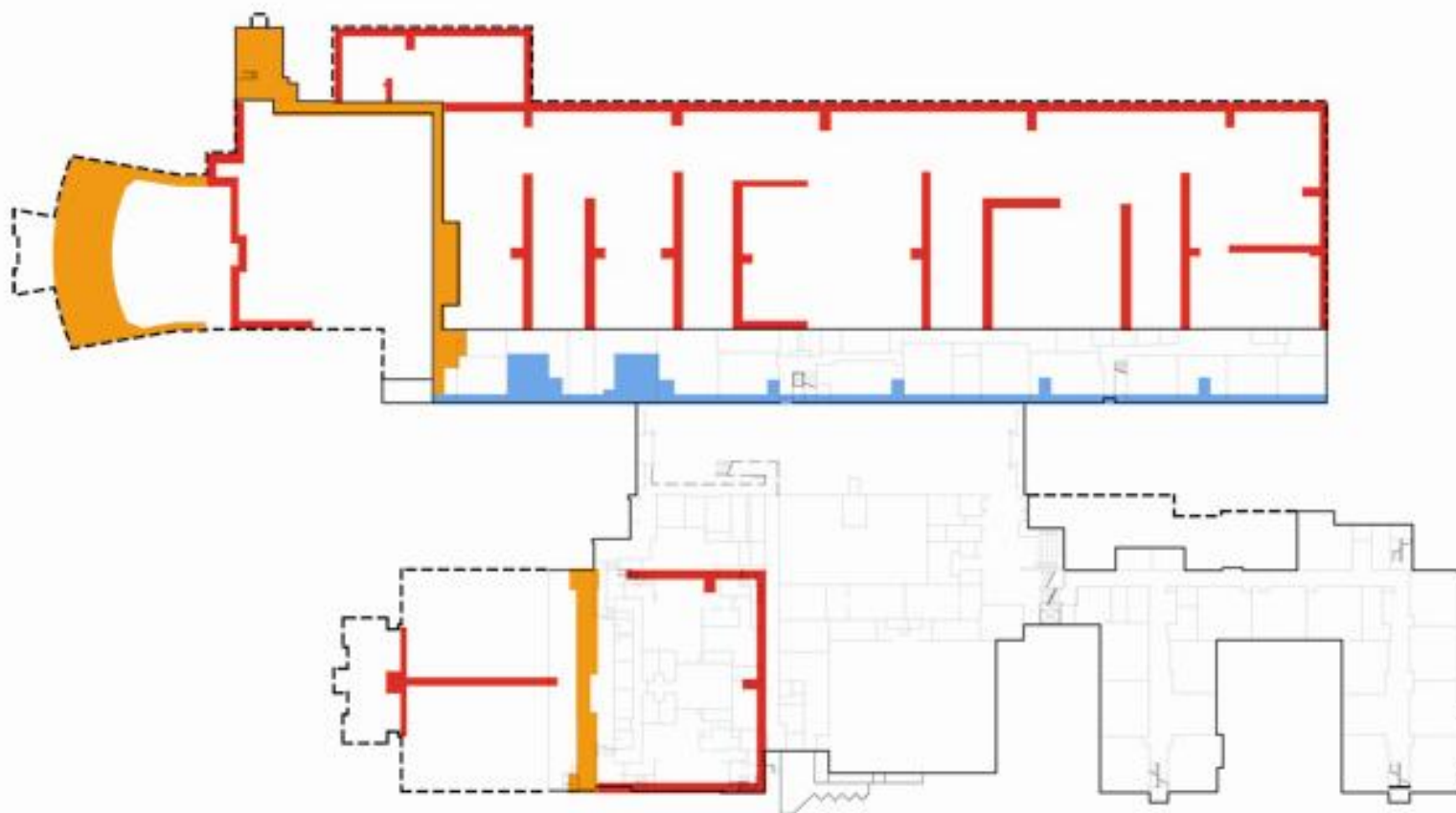
Acoustical & technology systems






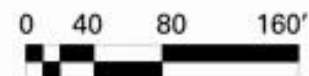








-  Utility Tunnels / Pipe Trenches
Below Upper/2nd Floor
-  Utility Tunnels / Pipe Trenches
Below Lower/1st Floor
-  Existing Mechanical Spaces









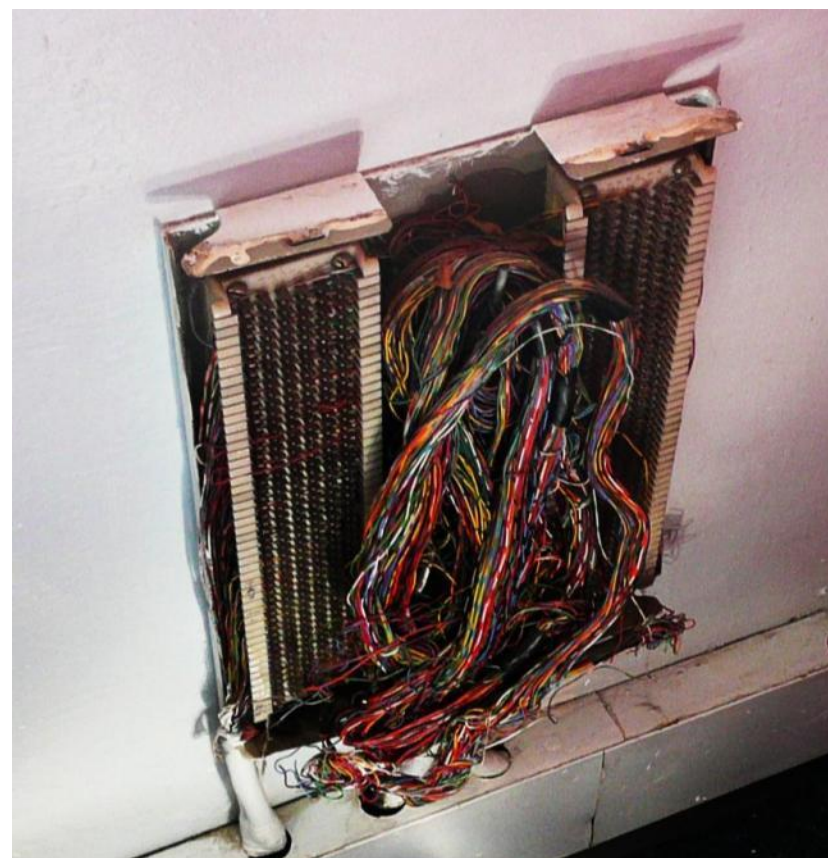
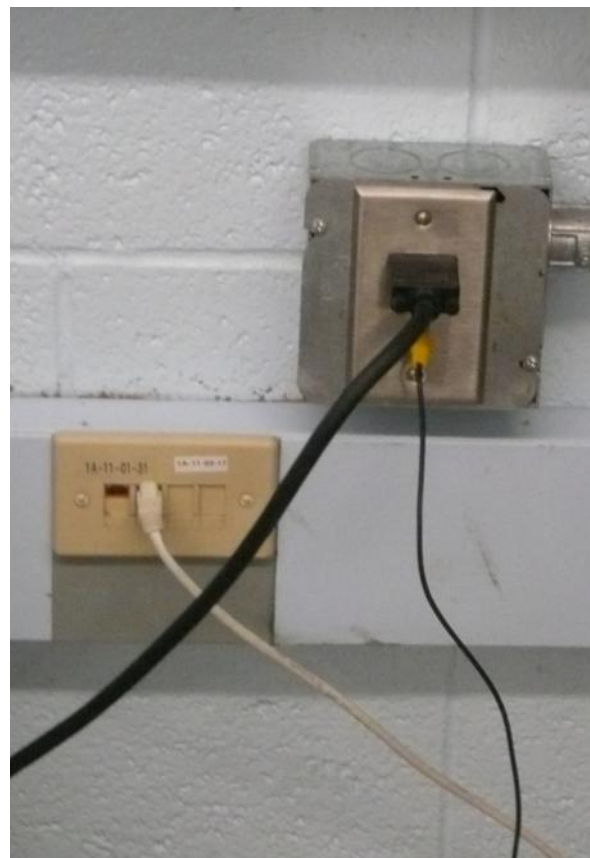






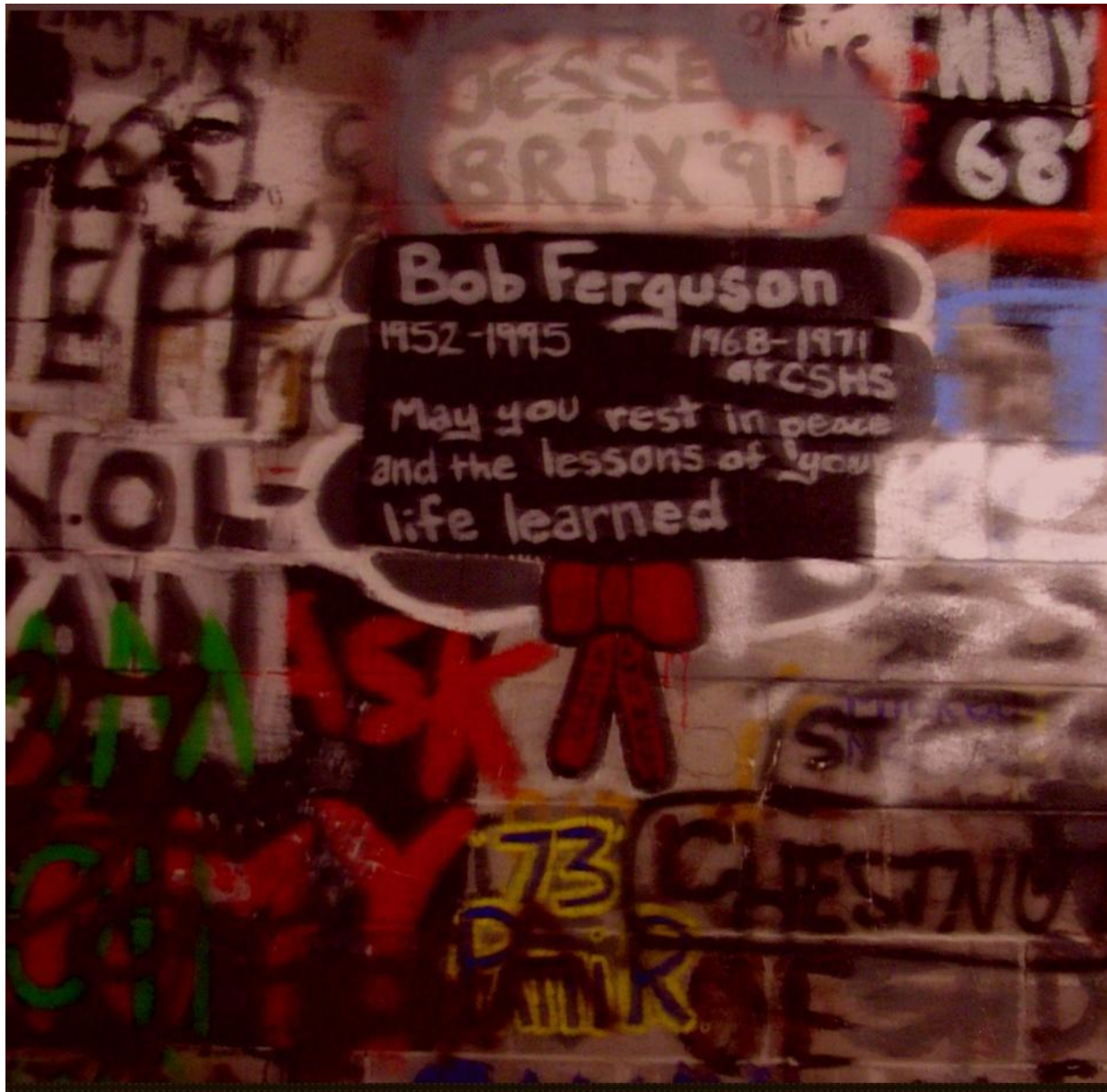




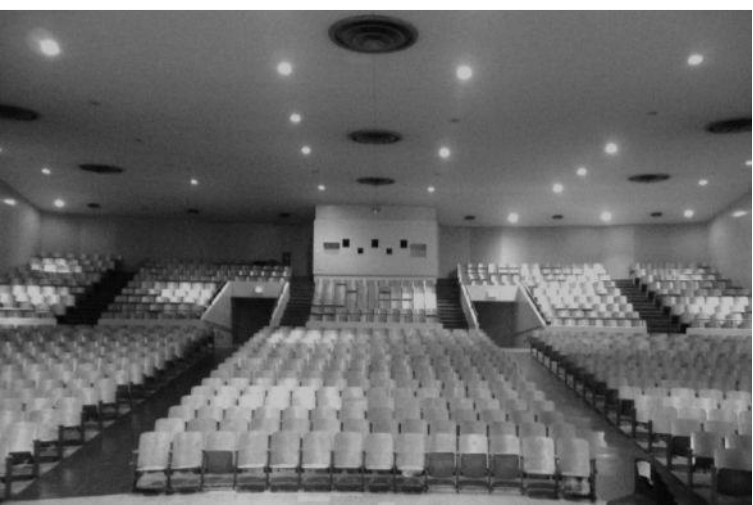














NHHS – Systems

Allow the building to breathe air and daylight

Provide visual & physical connection to the exterior within a deep building footprint

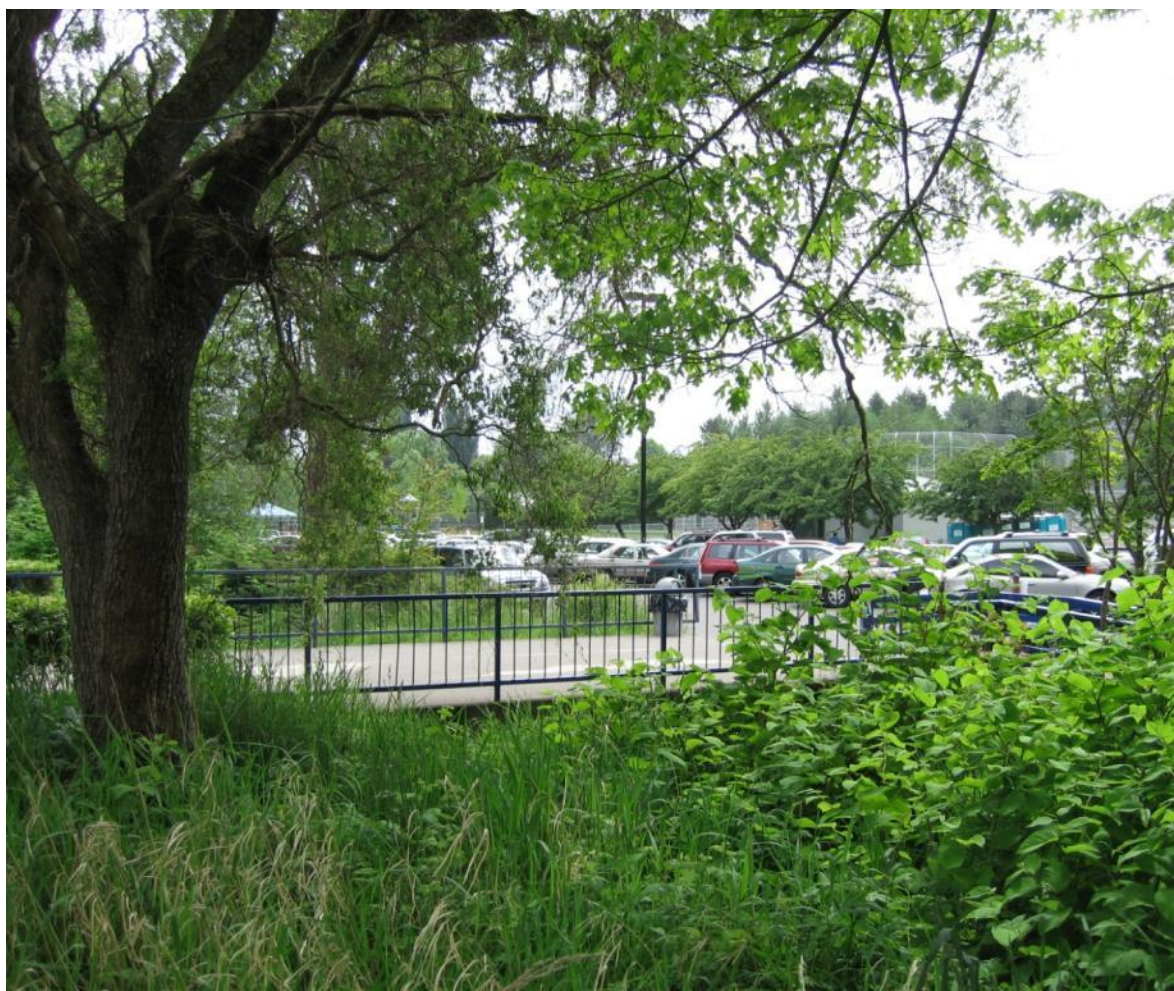
Ground source heat pumps & natural ventilation

Low impact bio retention cells (rain gardens) & green roof

Restore and enhance Thornton Creek





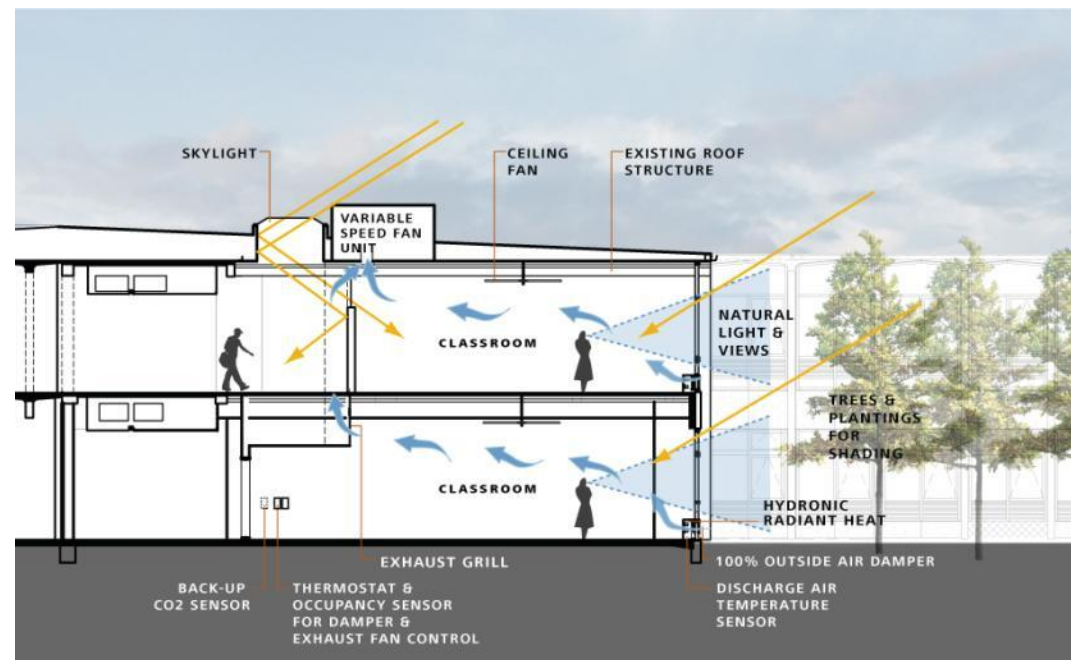














How Your Classroom Works



Breathe in the fresh air!
Your classroom is supplied with outdoor air through a natural ventilation system along the exterior wall.

Ceiling fans and operable windows help keep air moving and provide cooling during warm months.

During cold months, the ceiling fan is disabled and air is warmed by radiators in the cabinets which pull fresh tempered air into all parts of your classroom.

Questions?
Please
contact
Tina Tudor.

If the green signal light is **ON**, you can open the windows to help cool the room or provide fresh air.

If the green signal light is **OFF**, the ceiling fan is disabled; please close the windows.

A thermostat, CO₂ sensor and occupancy sensor help monitor your comfort level and may automatically turn on the rooftop exhaust or ceiling fan to help adjust the room temperature or amount of incoming fresh air.



Electric lights in your classroom won't be needed as often, thanks to supplemental natural daylight.

The zoned lighting system includes an **occupancy and daylight sensor to ensure no energy is wasted**. Lights along the exterior walls may automatically dim during the day.

Learning Spaces



CSIHS – Learning Spaces

Joint Schools

Whole School (high school)

Whole School (middle school)

Assembly / Performing Arts

STEM / CTE (Project Lead The Way)

Technology

Additional Classrooms

Gymnasium (access between 3
exist gyms)

Fitness Rooms

Sports Medicine

Language Labs

Music Lab

Music Rehearsal Spaces















NHHS – Learning Spaces

Place student at the center

Maximize flexibility

Visual interconnectivity

Support a wide range of learning styles

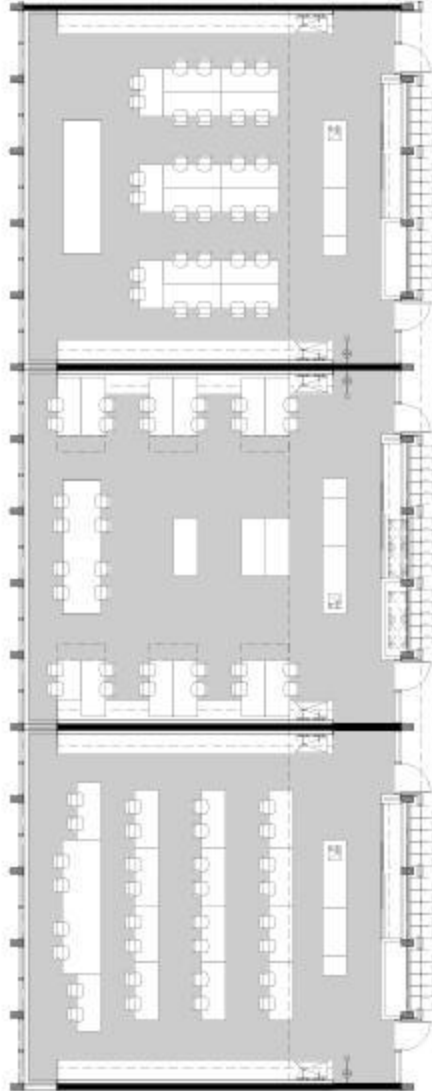
Facilitate learning everywhere

Foster creativity and inquiry

Reinforce positive relationships















Project Walkthroughs

Chief Sealth International High School
and
Denny Middle School



CSIHS / DIMS

Celebrates and enhances
connection between school,
cultures and environment

Connect the two original
buildings

Provide a large shared space

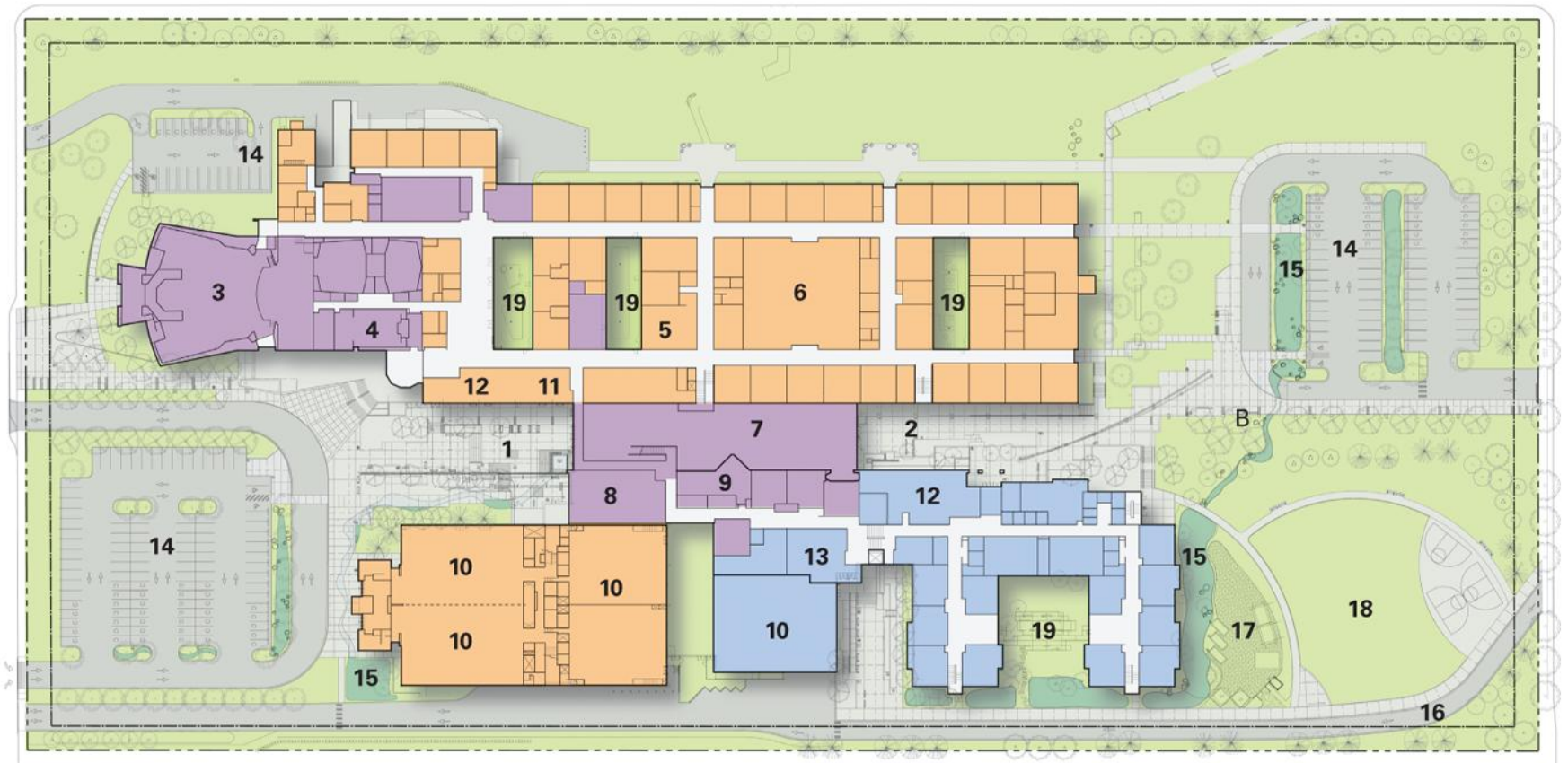
Unique community resources

Teen Health Center

Proyecto Saber

Confucius Institute

Investment into the physical
building to reinforce
commitment to students and
community



- | | | | |
|----|--------------------------|----|------------------------|
| 1 | Chief Sealth Plaza | 11 | Career Center |
| 2 | Denny Plaza | 12 | Main Office |
| 3 | Auditorium | 13 | Fitness |
| 4 | Little Theater | 14 | Parking |
| 5 | Confucius Institute | 15 | Raingarden |
| 6 | Learning Resource Center | 16 | Bus Loading |
| 7 | Galleria | 17 | Wetland Nursery/Garden |
| 8 | Teen Health Center | 18 | Denny Playfield |
| 9 | Staff Lounge | 19 | Learning Courtyard |
| 10 | Gymnasium | | |



NORTH



- Chief Sealth International High School
- Denny International Middle School
- Shared

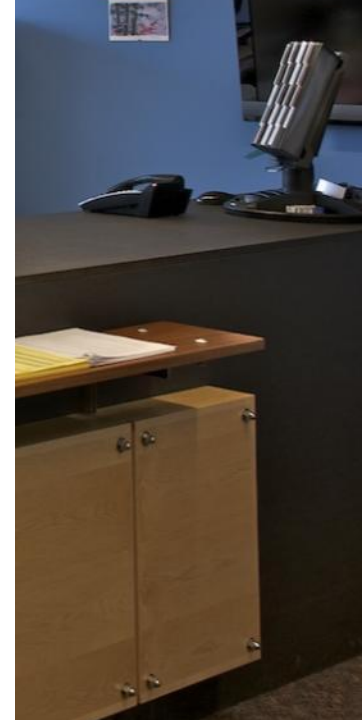
















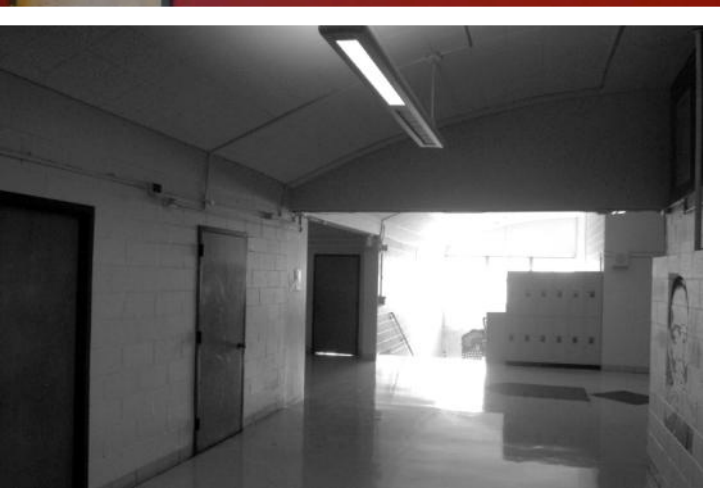






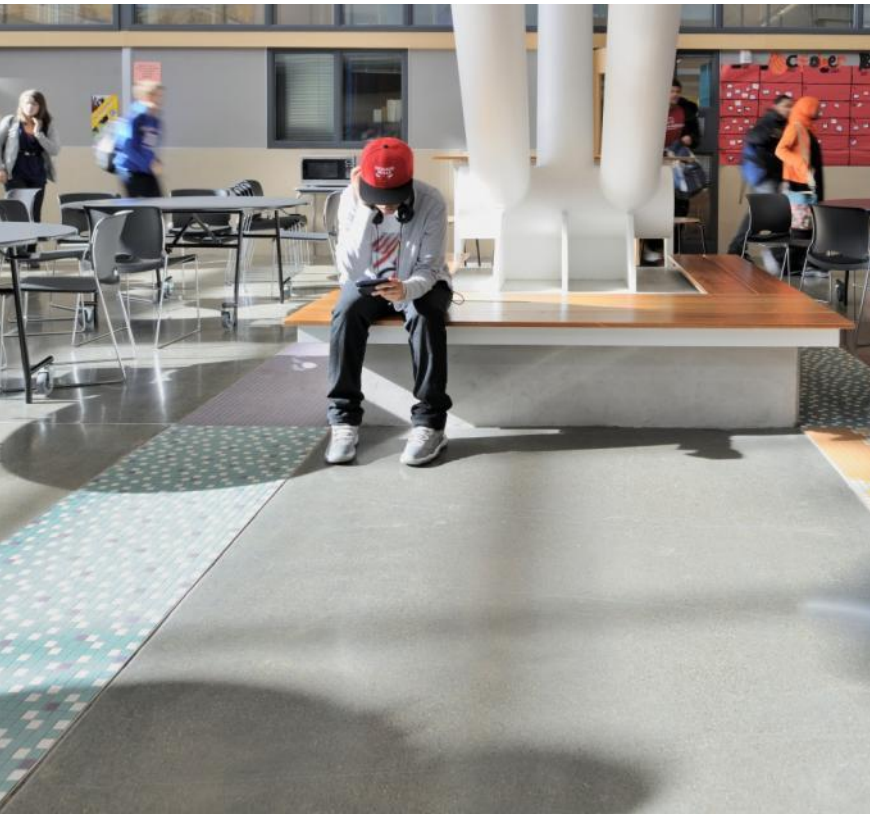
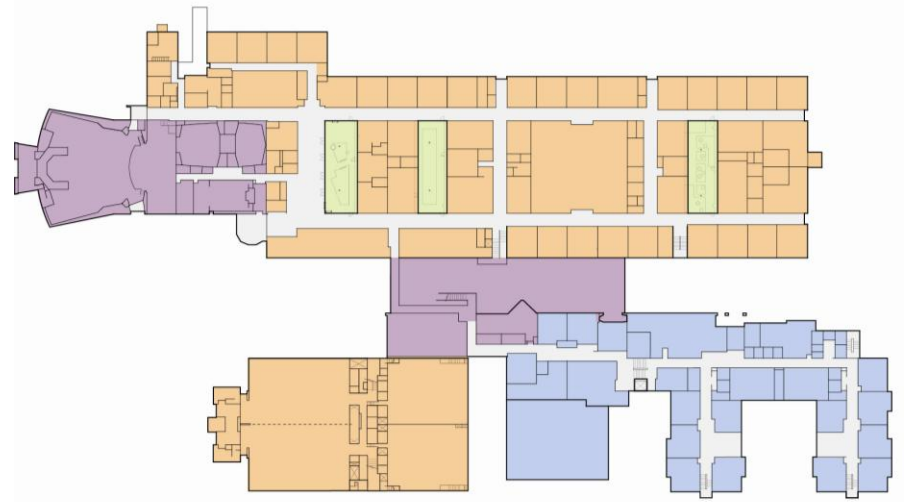






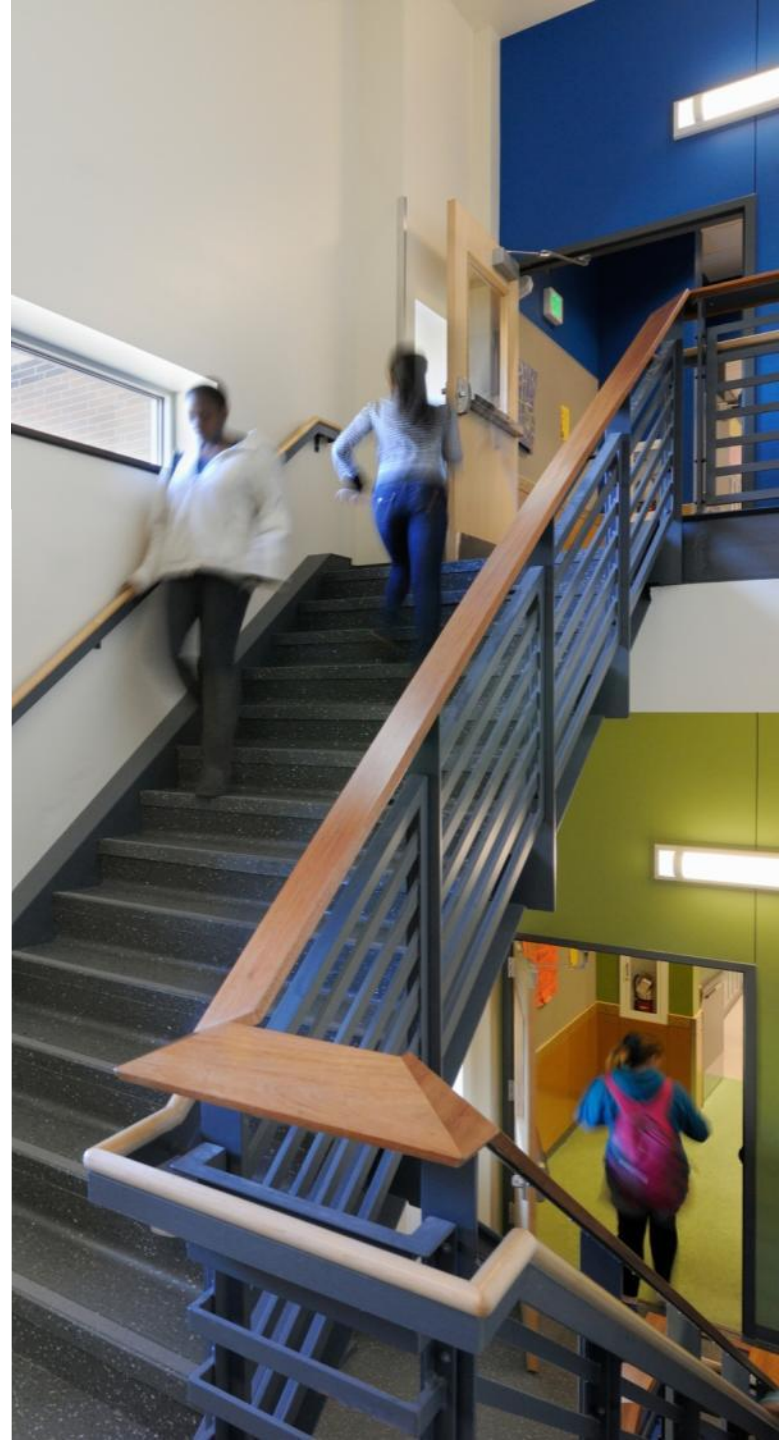




















Nathan Hale High School



Nathan Hale HS Stakeholder Goals

Design that supports adolescent
life + learning
"Put Student at the Center"

Welcoming, safe, accessible
school

Flexible facility

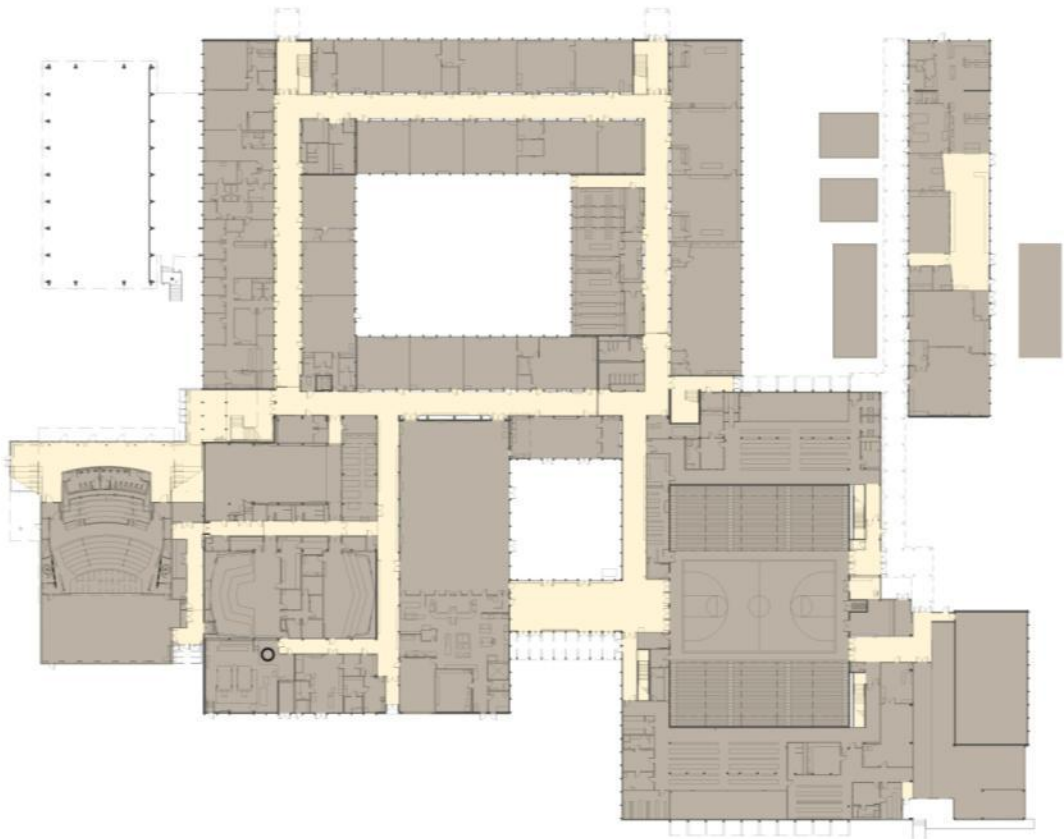
Aesthetically pleasing design

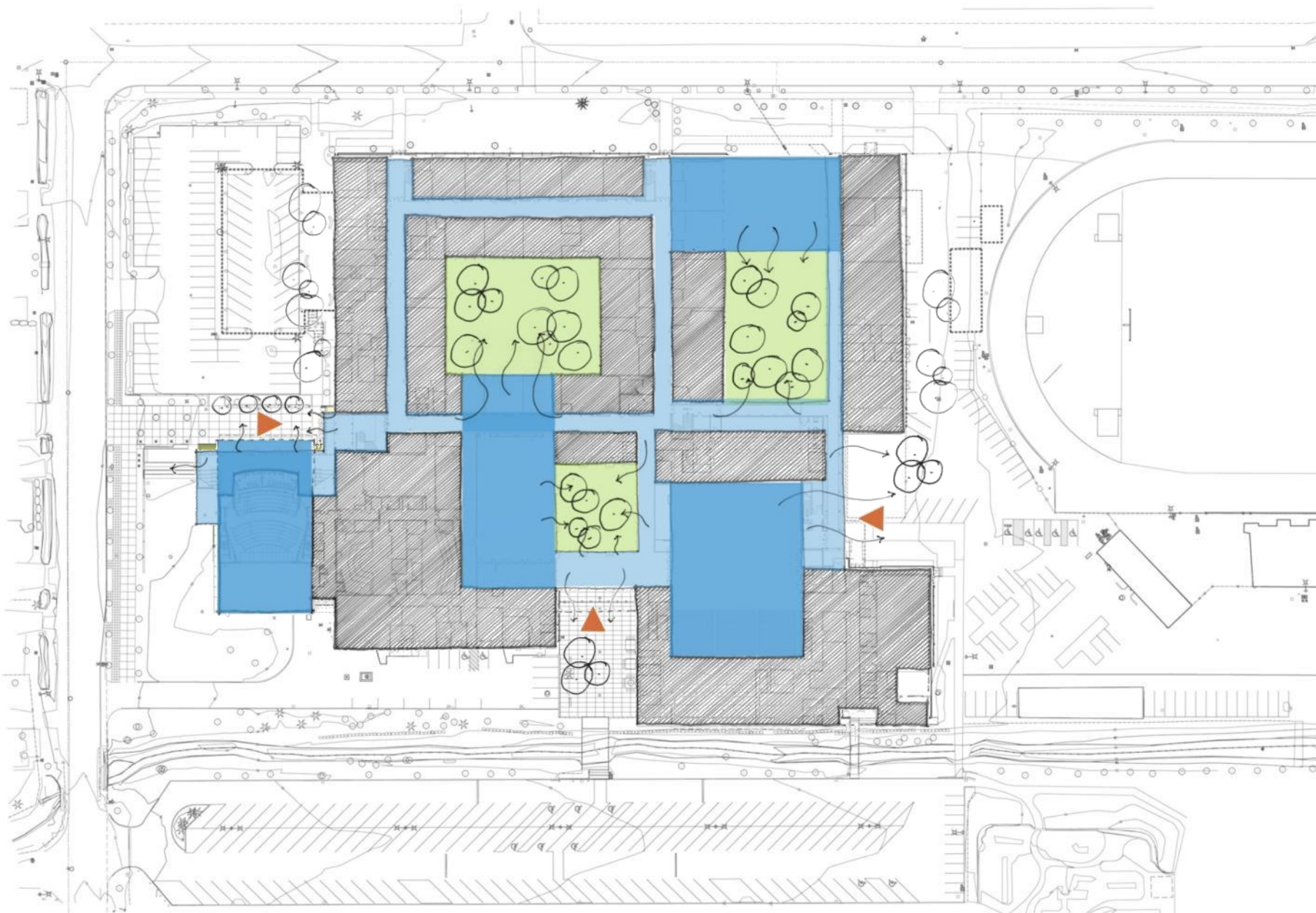
Improve surrounding
community, community
connections

Minimized construction impact

Green school



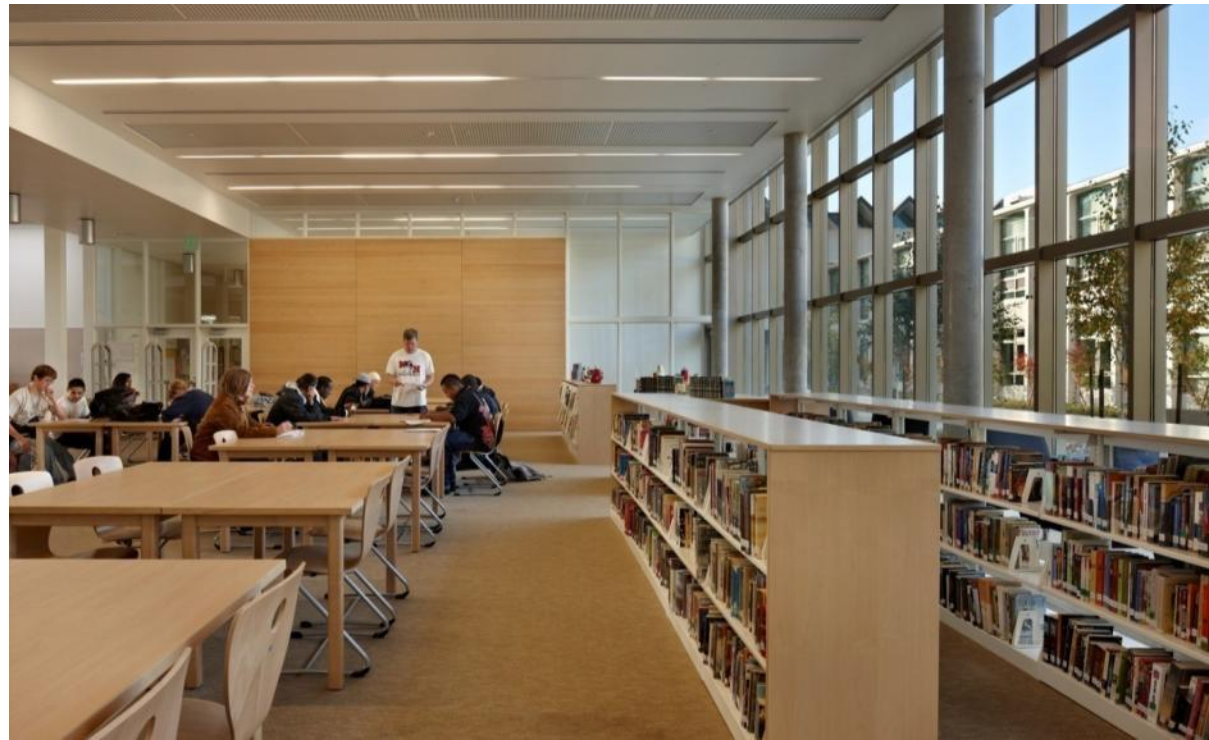




Welcome Community

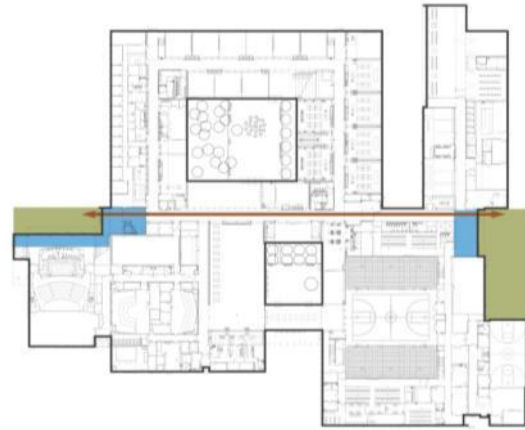


Welcome Community



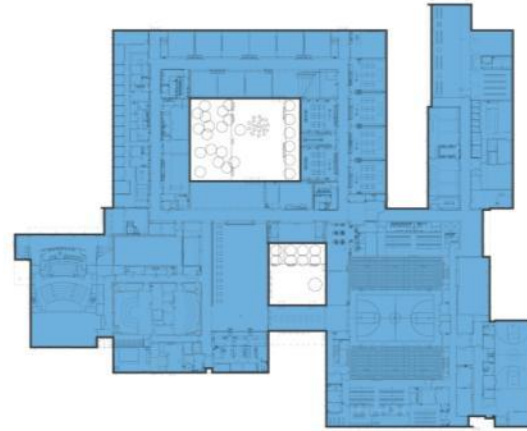


Connect Community





Connect Campus



Commons at the Heart



Commons at the Heart





Activated Spine

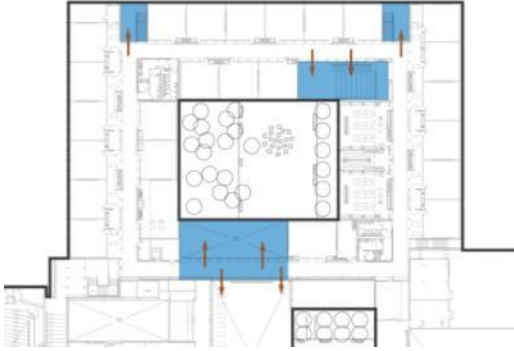


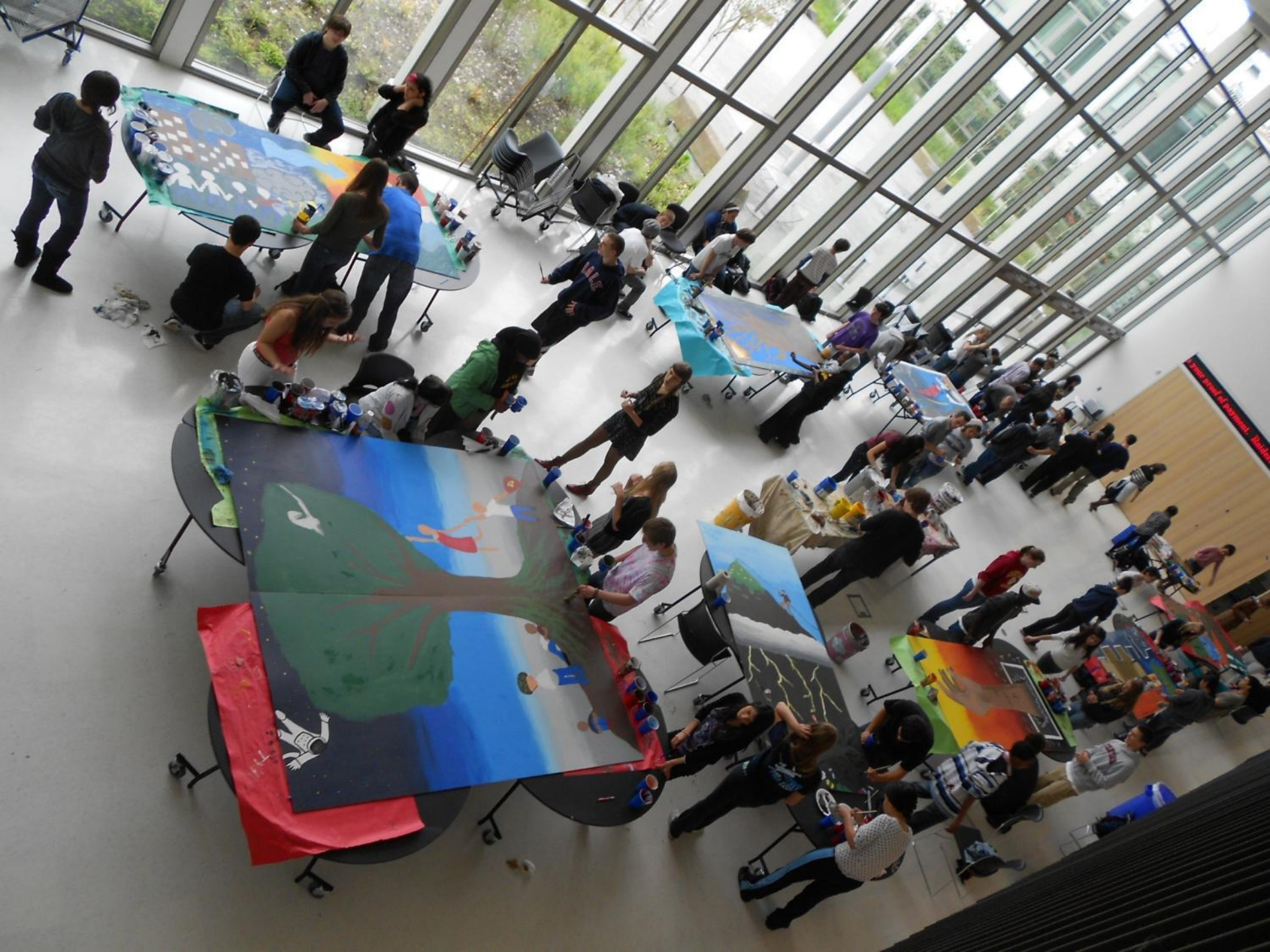
Activated Spine





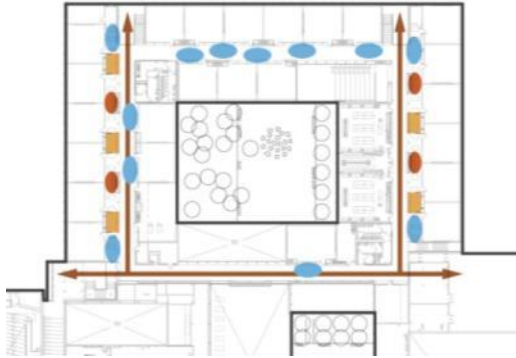
Strengthen Student Community



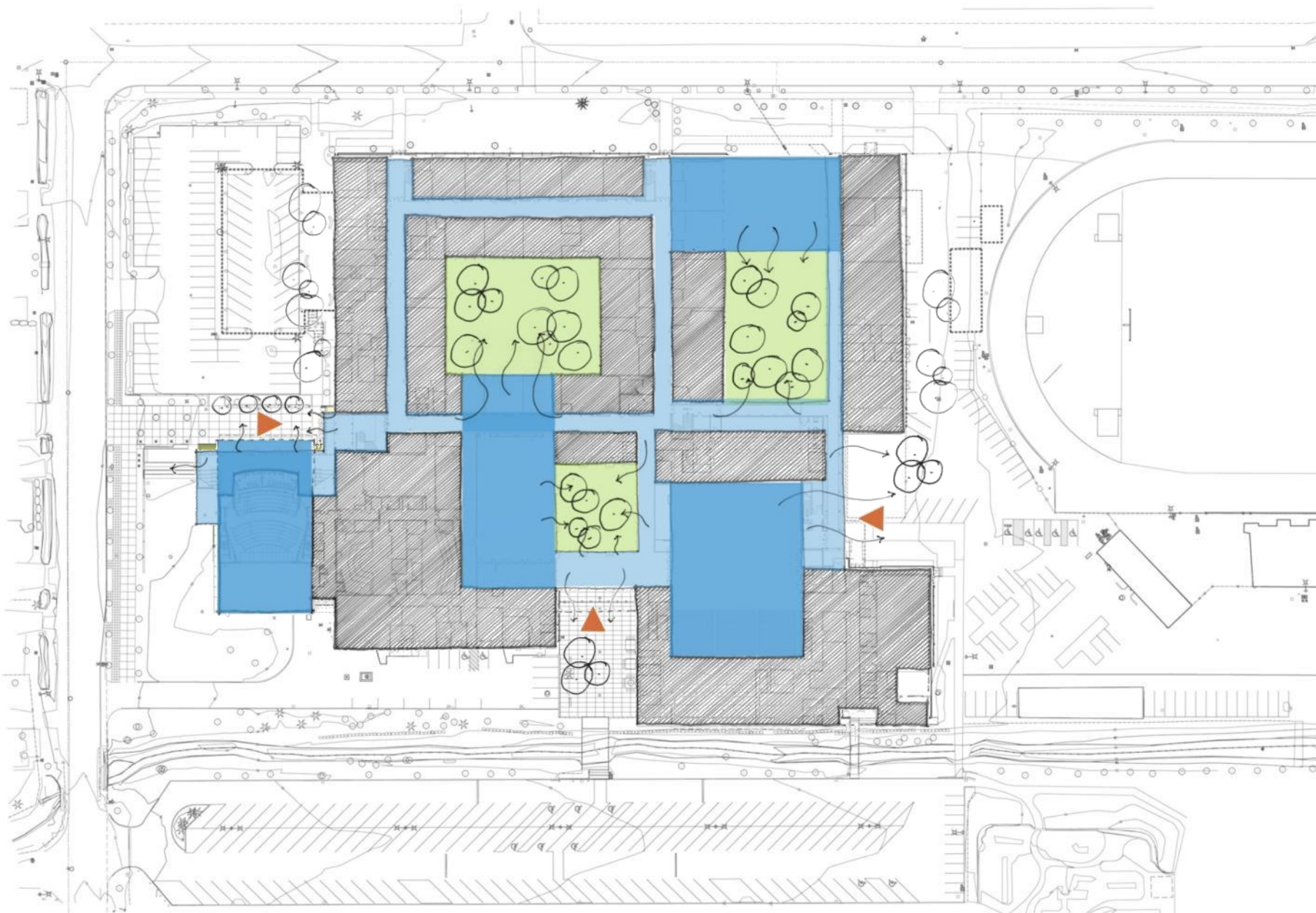




Facilitate Learning Everywhere





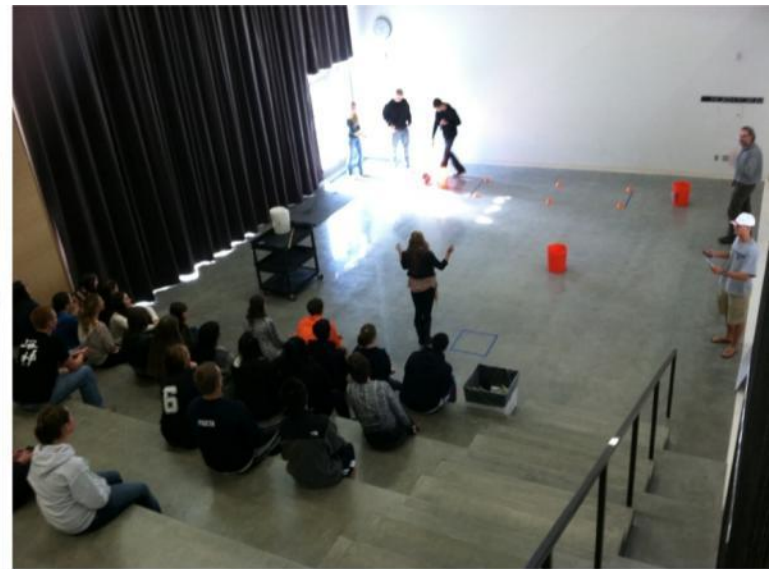




Integrated Studies Mural Painting in the Student Activity Center



ASB in the Student Activity Center



Physics in the Forum



Integrated Studies World Language Event in the Commons



Africa Night in the Commons



Annual Bite of Hale Community Event

Interactive Project Discussion



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Construction Cost CSIHS/DIMS campus: **\$ 89.4m / \$255 psf**
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Areas exist CSIHS: 216,000 sf
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Multi-phased, Occupied Site

General Contractor (low bid) & GCCM (General Contractor | Construction Manager)



Nathan Hale High School

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Cost/sf: \$225/sf

Grades: High School (9-12)

Capacity: 1400 students

Site Area: 18.8 acres

Building Area: 218,500 sf

Project Delivery: Low-Bid|GCCM

Multi-phased, Occupied Site

Thank you