



## **ALICE DEAL MIDDLE SCHOOL**

3815 Fort Drive, NW, Washington, DC 20016

### **SCHEMATIC DESIGN**

**25 February 2004**



### **QUINN EVANS | ARCHITECTS**

FANNING/HOWEY ASSOCIATES, INC

CERVANTES & ASSOCIATES

GHT LIMITED

WOODS PEACOCK ENGINEERING CONSULTANTS

MACTEC/LAW ENGINEERING

27 February 2004

Tracey Twyman, Project Manager  
District of Columbia Public Schools  
Office Planning, Design, & Construction  
Lemuel Penn Center  
1709 Third Street NE; 3rd Floor  
Washington, DC 20002



RE: ALICE DEAL MIDDLE SCHOOL  
Washington, DC  
A/E Contract #GAGA-2003-C-0003E  
QE|A reference 02233.02

Subject: Schematic Design - Final Submission

Dear Ms. Twyman:

QUINN EVANS | ARCHITECTS and our Project Team are pleased to submit the attached Final Schematic Design documents for the Alice Deal Junior High School Modernization Project. The Submission includes the following items:

- Schematic Design Report dated 25 February 2004.
- Schematic Design Drawings (Site, Architectural, Structural, and Mechanical Base/Alternates) dated 25 February 2004.
- Cost Estimate; dated 24 February 2004.
- New Relevant Correspondence, including Response to Comments

Please refer to the draft Submission, dated 18 December 2003, for the following drawings and appendix items:

- Schematic Design Drawings (Complete Mechanical, Plumbing, Electrical and Telecommunications)

- Relevant Correspondence
- Final Geotechnical Report
- Mechanical & Electrical Design Calculations

Consistent with the Feasibility Study, the Schematic Design recommends complete renovation of the existing 1930's buildings and construction of a new three part addition to house new central mechanical and electrical equipment, a cafeteria, secondary circulation, and gymnasium facilities. The Project includes:

- Net Educational Program Space including the historic auditorium of 91,830 SF.
- Selective demolition of the 1960's Northwest Wing and the Boiler Room: 27,300 SF.
- Comprehensive renovation of the 1930's buildings: 123,550 SF
- Construction of a new central mechanical and electrical space, a cafeteria, circulation and gymnasium facilities: 47,890 SF

QUINN EVANS | ARCHITECTS

1214 Twenty-eighth Street, NW  
Washington, DC 20007

v 202 298 6700  
f 202 298 6666

[www.quinnevans.com](http://www.quinnevans.com)

- The gross area of the resulting Project is 171,440 SF.

The Team's current *Opinion of Probable Construction Cost* is \$22.7 Million Dollars. Due in large part to escalation, this amount exceeds the year 2003 preliminary design budget by less than 5%. As further described in the Schematic Design Report, our Team proposes to work with DCPS during to reduce the probable cost during Design Development.

The Team is on schedule to complete design by November 2004. The Schematic Design Report anticipates advertisement of the Project in January 2005 and solicitation of bids would during February and March. If a construction contract is awarded in late spring, then construction would as school closes for summer break. The Report recommends continued occupancy of the school during construction, and that construction be completed within two phases over 30 Months (2-1/2 years). If a construction contract is awarded in Spring 2005, students will be impacted during the 05-06 and the 06-07 school years, and the Project would be fully complete with capacity for three grades or 838 students come Fall 2007.

The proposed Design was presented to the Commission of Fine Arts (CFA) at the 15 January 2004 Commission meeting. "The Commission commends the school district and project team for saving the historic school while developing an addition that meets contemporary needs both programmatically and aesthetically. (CFA approval letter dated 28 January 2004)". The concept submission is approved, and the Team is to present the project for final approval when the Documents are nearly complete.

We thank you and the Office of Planning and Design for your considered review. This package includes edits and revisions as agreed upon during our review meeting held on 18 February 2004.

As agreed upon, our Team will begin the design development in March 2004. We look forward seeing you at the Design Development kickoff meeting, this coming Thursday 4 March 2004.

Cordially,

QUINN EVANS | ARCHITECTS

Jeffrey C. Luker, AIA  
Principal

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## INTRODUCTION

### Purpose

In September 2003, the Facilities and Finance Committee approved the School Feasibility Study and authorized the A/E Team to proceed with Schematic Design. During this phase a conceptual design is developed that illustrates the scale and relationship of the Project components. The documents include a computer-based three dimensional model of the building; preliminary plans, sections, elevations, structural and building system drawings. Further, the Schematic Design Report includes a general description of the project; a listing of the architectural elements and building systems; tables demonstrating compliance with the required space program; an opinion of probable cost; a code compliance analysis; and recommendations relevant to construction planning.

### Participants

DCPS Superintendent  
Elfreda W. Massie, PhD

DCPS Board of Education  
Peggy Cooper Cafritz, President  
Mirian Saez, Vice President (At Large)  
Julie Mikuta, District 1 (Wards 1 & 2)  
Dwight Singleton, District 2 (Wards 3 & 4)  
Tommy Wells, District 3 (Wards 5 & 6)  
William Lockridge, District 4 (Wards 7 & 8)  
Carrie Thornhill, (At Large)  
Robin Martin, (At Large)  
"Vacant", (At Large)  
Nathaniel Cole, Student Representative  
Terrence K. Pleasant, Student Representative

Alice Deal Junior High School  
Administration and Teachers  
Reginald Moss, Principal  
Manuel Dacoba, Assistant Principal

Parents and Community  
Whitney Watriss, Chair - Modernization Committee  
Mary Giffin, President - PTA

District Of Columbia Public Schools (DCPS)  
Dr. Sydney Cousin, Associate Superintendent of Facilities  
Sarah Woodhead, Former Chief of Facilities  
Frederick Parker, Project Director  
Tracey Twyman, Current Project Manager  
Kenneth Postell, Former Project Manager  
Bruno Ertem, DCPS Project Representative  
Sal Cosentino, Mechanical Reviewer

### Architect and Engineering Team

Quinn Evans | Architects  
Architecture and Planning  
Michael Quinn, FAIA  
Jeffrey Luker, AIA  
William Drewer, AIA  
Christine Cho, AIA  
James Thompson, AIA  
Tina Roach  
Atsuko Sakai

Architect and Engineering Team - continued

Fanning/Howey Associates, Inc. (FHA)  
Educational Architecture Planning  
James Jelliffe, AIA  
Michael Stenberg, RA

Nyikos Associates  
Food Service  
Robert Nyikos, FCSI  
Jay Garcia

Acoustic Design Collaborative, Ltd  
Acoustical Consultant  
Neil Thompson Shade

Cervantes & Associates  
Civil Engineering and Survey  
Rafael Cervantes, PE  
John Elliott Dent, PE  
Alisa Cowen, ASLA  
Tom Conlon, CLS

GHT Limited  
MEP, Telecom, & Fire Protection Engineering  
Richard Haun, PE  
John McGee, PE  
Kevin Youssefi - Mechanical  
Bill Hittle, RCDD - Telecommunications  
Phil Simmons - Electrical  
Paul Niemiec - Plumbing

Woods Peacock Engineering Consultants (WPEC)  
Structural Engineering  
Theron Peacock, CE  
Laura Moore, CE  
Stewart Staton

MACTEC/LAW Engineering  
Hazardous Materials Evaluation & Geotechnical Consulting  
Pete Frederick  
Frank Yodie  
Ravi Bassi

Protection Engineering Group  
Life Safety Consultant  
Mike Thompson

R.W. Brown & Associates  
Cost Estimating  
Robert Brown

## EXECUTIVE SUMMARY

In late September 2003, the District of Columbia Public Schools (DCPS) Facilities and Finance Committee authorized continued development of Option A-1 as recommended in the Feasibility Study. This Report presents the results of Phase III: Schematic Design for the Alice Deal Junior High School Modernization Project.

### Architecture

As proposed the Schematic Design preserves the structure, valuable finishes, and significant ornament of the original Alice Deal school building and of the adjacent 1930's wing additions. These 1930's buildings will be completely renovated to house the core educational spaces program, administrative offices, the media center, arts spaces and the full complement of necessary support spaces. At the rear of the historic building, the 1960's wing and 1-story boiler room will be demolished, and new additions will be built to house completely new mechanical and electrical systems, a cooking kitchen, a 280-seat capacity cafeteria, a secondary circulation spine, and a gymnasium facility. Notably, the secondary circulation spine completes the circulation loop of the existing building and, at the same time, supports community use of the new gymnasium and cafeteria facilities after school hours. It also would allow ready access to the adjacent Reno/Rose School building at some future date.

With minimal deviations, the proposed design fully accommodates the Educational Program as confirmed in the approved Feasibility Study. The layout creates six smaller learning communities, two per grade, that are especially well suited to support a modern middle school program. It includes over 83,320 of fully modern educational program space and retains, with code-related improvements, the historic 8,510 SF Auditorium, resulting in a net program area of 91,830 SF. As proposed, the renovated and expanded facility will be accessible to students with

disabilities; it will comply with the Americans with Disabilities Act (ADA) and all mandated special education requirements.

### Site

To complement the proposed building design, the site design is targeted to separate building service areas from student activity zones; to resolve ball-field drainage problems; to provide additional parking; and to introduce a second entrance located to facilitate separate community access to the gymnasium and the cafeteria. The proposed work includes development of a public drive turn-around adjacent to Howard Drive; and a new service drive with parking accessed from the existing Fort Drive turn-around west of the existing Alice Deal building.

The Alice Deal JHS site is located within Fort Reno Park, a National Park Service (NPS) property managed by the director of Rock Creek Park. Except for a small amount of sidewalk work, all of the site work recommended in the Base Project is on the Alice Deal School Property. However, permissions from the Park Service will be required because development of this Project will require utility work on Fort Drive, Howard Street and on park land between the School and Fessenden Street. Further, our Team reiterates the Feasibility Study recommendation that a full Master Plan be prepared to coordinate future development of the Park with the forthcoming Alice Deal Middle School and Wilson High School modernization Project.

Especially relevant to the Alice Deal Project, our Team recommends that DCPS and the Alice Deal Community should explore the possibility that the NPS would return ownership of Fort Drive and Howard Street to the DC Government. Given this transfer, the DC Government would become responsible for the development and maintenance of these two deteriorated streets that serve not only the Alice Deal School, but the adjacent City Water Reservoir, DC WASA water pumping station, and

the Reno/Rose school building. The goal is to have the DC Government improve the subject roads as recommended in the Feasibility Study. These improvements would resolve significant student pedestrian safety, traffic flow, parking, and water run-off problems.

Of equal importance to the Alice Deal Project is the fact that the adjacent and historically significant Reno/Rose school building is currently vacant and as such presents a security risk to the Alice Deal property. While the building is sited on the DCPS Alice Deal school parcel, ownership responsibility for the Reno/Rose building currently resides with the DC Government. DCPS has presented a letter to the DC Government requesting temporary permission to use the Reno/Rose school building as construction support and possible swing space during construction of the Alice Deal Project. If allowed, this action would resolve the vacancy concern and protect the Reno/Rose building during the planned construction effort, and it would provide time for the DC Government and DCPS to select an appropriate tenant to the building.

### Structure

The existing central building, the east and west wings and the associated connectors will remain in this project with minor modifications to the existing structure. These modifications include several localized areas of underpinning of the foundations in all three remaining existing building components, steel framing in the central building where existing load bearing walls are removed, and steel framing and composite concrete and metal floor deck in the east and west wings where the south stairwells are to be filled in.

The proposed cafeteria, gallery, crossover, gymnasium and east and west infill additions will be steel framed structures, with open web steel joists and joist girders and wide flange beams and columns. The exterior walls will be infill masonry with veneer. The gallery, crossover and

cafeteria lateral support framing systems will be steel moment frames. The gymnasium and cafeteria will require combinations of steel moment frames and masonry shear walls for the lateral bracing systems. At the interior, the new wide flange structural steel framing will be coated with fire-retardant paints and remain exposed as ornament. The exterior of the new additions will be finished with a combination of brick masonry with cast stone detailing similar to that of the existing buildings.

### Mechanical

The existing building services will be completely replaced. Evaluation of the existing mechanical, electrical, plumbing, telecommunications, security, and AV systems confirms that they have served their useful lives and are due for replacement.

The proposed HVAC system is a decentralized, single zone type, utilizing 4-pipe, air handling unit systems to allow concurrent heating and cooling throughout the building. A new central cooling/heating plant will be constructed at the new west service /cafeteria addition. Multiple boilers and chillers will provide chilled/hot water to individual classroom air handling units and to all of the energy recovery units.

Classrooms and similar sized zones shall be served by dedicated air-handlers, an efficient system that includes individual control at each classroom. Outside air will be added at every air-handler. The acoustic design criteria in ANSI S12.60 recently adopted by DCPS identifies key objectives that will be addressed by increasing ductwork sizes and locating terminal units in separate stacked closets. Interior acoustical duct lining is not allowed by DCPS. Additional acoustic analysis will be completed during Design Development, but without the use of duct lining, it is unlikely that the ANSI noise criteria will be fully met. Further, DCPS should be aware that complying with the stringent noise criteria introduces significant additional MEP cost to the Project.



At the request of DCPS, we have further explored use of the Edwards Valance system in the Classroom Wings. The Edwards Valance system is a perimeter radiant heating and cooling system with acoustic and energy benefits. The Valance system mitigates the building envelope loads while smaller ventilation equipment provides the necessary fresh air. The preliminary system plan is included with the drawings and identified as an alternate in the Cost Estimate. At a 28 January 2004 meeting with DCPS, we agreed to integrate the system into the Project during Design Development.

### Plumbing

Considering the age and overall poor condition of the plumbing system, fixtures and equipment, the entire plumbing system will be replaced. This includes a new water service and complete domestic water piping system; a new sanitary service, as well as a complete sanitary waste piping system; and a new storm service and piping system. All plumbing fixtures will be replaced with new fixtures that comply with ADA and current water conservation requirements.

Other major plumbing systems to be replaced include the domestic water heating system that will consist of two instantaneous gas boilers capable of keeping up with the hot water demands of the entire building, as well as two tanks sized for adequate storage with a re-circulation pump for maintaining hot water at all fixtures.

A new fire protection water service will be required to provide water for the standpipe/sprinkler system throughout the building, as well as a dry-pipe sprinkler system for the entire attic. Flow tests have determined that a domestic booster pump will be required, and an additional fire pump will be required.

### Electrical / Telecommunications / Security & Multimedia

The electrical system will be all new and in compliance with the DCPS standards. The original electrical system is inadequate to serve the loads introduced by the modernization. Due to the system's age, many of its parts are damaged, have been abandoned or have temporary repairs since replacement parts are not available. The new system will be all copper conductors and, based on the school size, it is anticipated to be 3,000 amp, 480 volts, 3 phase, 4 wire. The electrical distribution will provide power to the mechanical equipment and lighting systems at 480 volts. All of the power for receptacles, kitchen equipment, AV equipment, etc., will be at 208/120 volts.

The telecommunications systems for this project include new data, voice, video, and security systems.

The existing data network is a mixture of copper running an Ethernet network and optical fiber that is dark (unused). The copper cabling will be replaced, and the installed fiber will also need to be replaced due to the pathway used for the existing installation. The A/E Design Team will design new MDF/IDF closets, cable trays, conduit and raceways necessary to accommodate new data cabling, equipment and racks that will be procured and installed by DCPS or DCPS vendors. Our Team anticipates that the network will be evaluated for migration to Fast Ethernet, Gigabit, or wireless (802.11). Distribution will be redesigned at both the intermediate distribution frame (IDF) and the main distribution frame (MDF) to accommodate new technologies. Internet access and connectivity to the Wide Area Network (WAN) are anticipated.

The existing voice system supports various functions including voice mail, public address, and analog lines for fax machines, modems, and security. The existing category 3 copper infrastructure will be replaced to allow greater efficiency and integration with other systems. DCPS or

DCPS vendors will design and install a new voice infrastructure (cabling and equipment), using a Voice over IP (VoIP) system that reflects the current needs of the school while allowing some measure of future expansion capability. The A/E Design Team will design the pathways including cable tray, conduit, and raceways to be installed by the General Contractor.

The A/E Design Team will design and specify a completely new integrated public address/intercom system and master clock system to be installed by the construction contractor. New analog lines will be provided for the fire alarm system, security cabinet, elevator, fax machines, and the phone master calling system connection to the main telephone room.

Today's schools make much greater use of multimedia. The current video system will be upgraded to take advantage of that trend by allowing a wider distribution of viewable materials. Support for components such as VCR's, DVD's, Electronic Bulletin Board, and others will be incorporated. Again, DCPS will procure the video system cabling and equipment, except the television mounting brackets. The A/E Team will design closets, wire-ways, and structural mounts necessary to support installation of new video equipment. The General Contractor will install the complete video system. Our Team anticipates that the video distribution system's coaxial infrastructure will be upgraded to RG-11 or .500" coaxial cable, and the outlets will be upgraded to RG-6 coaxial cable allowing video transmission from sources that include in-house components; educational materials originating from a provider; or streaming material. This upgrade will also allow interactive activities.

To accommodate a new security system, the A/E Design Team will design new conduit, raceways and junction boxes to support the new security sensors, cameras, cabling and other equipment that will be procured and installed by DCPS or DCPS vendors.

### Cost

Our Team's current opinion of probable cost for the Base Project is \$22.7 Million Dollars. The Amount includes a design contingency of 5% or \$1 Million but it does not include hazardous materials removal nor permit fees. Further, the Amount anticipates construction starting in Spring 2005 and includes escalation from December 2003 to the midpoint of construction, June 2006, 7.75% or 1.6 Million. If the project is delayed, DCPS should anticipate additional escalation a 3% per annum, or \$0.7 Million Dollars per year.

Our design contract, anticipating a construction start in Spring 2004 requires that our Team develop the Project within a preliminary design budget of \$21.7 Million Dollars. In this context, our Team is prepared to work with DCPS to reduce the probable cost of the project during Design Development. We recommend the following approaches:

- First, our Team will work with the Office of Planning, Design and Construction to value engineer the proposed building and site-work; and carry this conservative approach into Design Development and beyond.
- Second, the project start date has been delayed and a large portion of the estimate, \$1.6 Million Dollars is required to cover escalation. To control this cost the A/E team is prepared to complete design this year so that the documents are ready for bidding in February 2005.
- During Design Development, our Team will carefully study construction phasing requirements. It may be possible to reduce the required construction time which would reduce both the escalation cost, and the Contractor's overhead costs.

### Sustainable Design

Notably, the proposed project retains the Alice Deal school building at the existing urban site - an inherently sustainable design strategy. In addition, the full range of sustainable design strategies recommended by the Leadership in Energy and Environmental Design (LEED) Green Building Rating System were evaluated at the beginning of Schematic Design. Applicable strategies have been identified and integrated into the proposed design. A chart summarizing the evaluation and identifying the applied strategies is included with this Report.

### Phasing & Implementation

To facilitate phased construction of the Project while occupied, the proposed design continues use of the existing building with minimal structural demolition. New additions will enable construction of the central mechanical plant, the cafeteria and the gymnasium facility independent of and prior to rehabilitating the main building. Briefly stated, we currently recommend continued occupancy during construction over a 2-1/2 year construction period. If a construction contract is awarded by Spring 2005, then the Modernization would be fully completed by Fall 2007.

If the project is coordinated with planned conversion from the current junior high school program (grades 7-9) to a middle school program (grades 6-8), the student population at Alice Deal may be reduced by a third during construction. This is accomplished by moving the ninth grade into the high school program, and keeping sixth graders at their current feeder schools until construction is complete. Given this approach, we recommend the following Phasing Plan:

#### *School Year One: Fall 04 - Spring 05*

- Alice Deal begins the Middle School team teaching program.

- A construction contract is awarded in winter or early spring 2005.
- The contractor begins site work and construction of the new additions.
- In spring 2005, the Eighth Grade class graduates from Alice Deal Middle School to Wilson High School.

#### *Summer One 05*

- A temporary trailer campus is established (one grade / 14 classrooms)
- The existing Northwest Wing is demolished
- Renovation begins within the west portion of the existing building.
- Construction of the new additions continues.

#### *School Year Two: Fall 05 - Spring 06*

- Construction of the new additions and renovation existing building continue.
- Seventh and Eighth graders attend Alice Deal MS; Eighth Grade classes are held in the east portion of the existing building. Seventh Grade classes are held in the temporary trailer campus; both grades make use of the existing building for lunch, administration, and related services.
- In Spring 2006, the Eighth Grade class graduates from Alice Deal MS to Wilson High School.
- Late spring or early summer, the new additions and the west renovations are complete and certified for new occupancy.

#### *Summer Two 06*

- Alice Deal moves its programs from the existing east portion of the Alice Deal School to the new additions and renovated west portions of the building.

- Renovation of the east portion of the existing Alice Deal building begins.

*School Year Three: Fall 06 - Spring 07*

- Renovation of the east portion of the existing Alice Deal building continues.
- Seventh and Eighth graders attend Alice Deal MS, Eighth Grade classes are held in the renovated west portion of the existing building. Seventh Grade classes are held in the above described trailer campus, both grades make use of the removed building and new additions for lunch, administration, and related services.
- In spring 2007, the Eighth Grade class graduates from Alice Deal MS to Wilson High School.

*Summer Three 07*

- All construction work is completed and the trailer campus is removed.
- Alice Deal moves completely into the renovated and expanded facility.

*School Year Four: Fall 07*

- The full Alice Deal Middle School program, including Sixth Grade, is implemented.

In sum, the Project is on track for continued design development. Relevant to budget and student impact concerns, our team is prepared to work closely with DCPS to develop a more detail construction plan and the necessary school logistics necessary to coordinate with the construction effort.

## GRAPHICS

3D Model – Perspective View From the Southeast

3D Model – Perspective View From the Northwest

3D Model – Section Perspective of East Lightcourt

Site Plan

Ground Floor Plan

First Floor Plan

Second Floor Plan

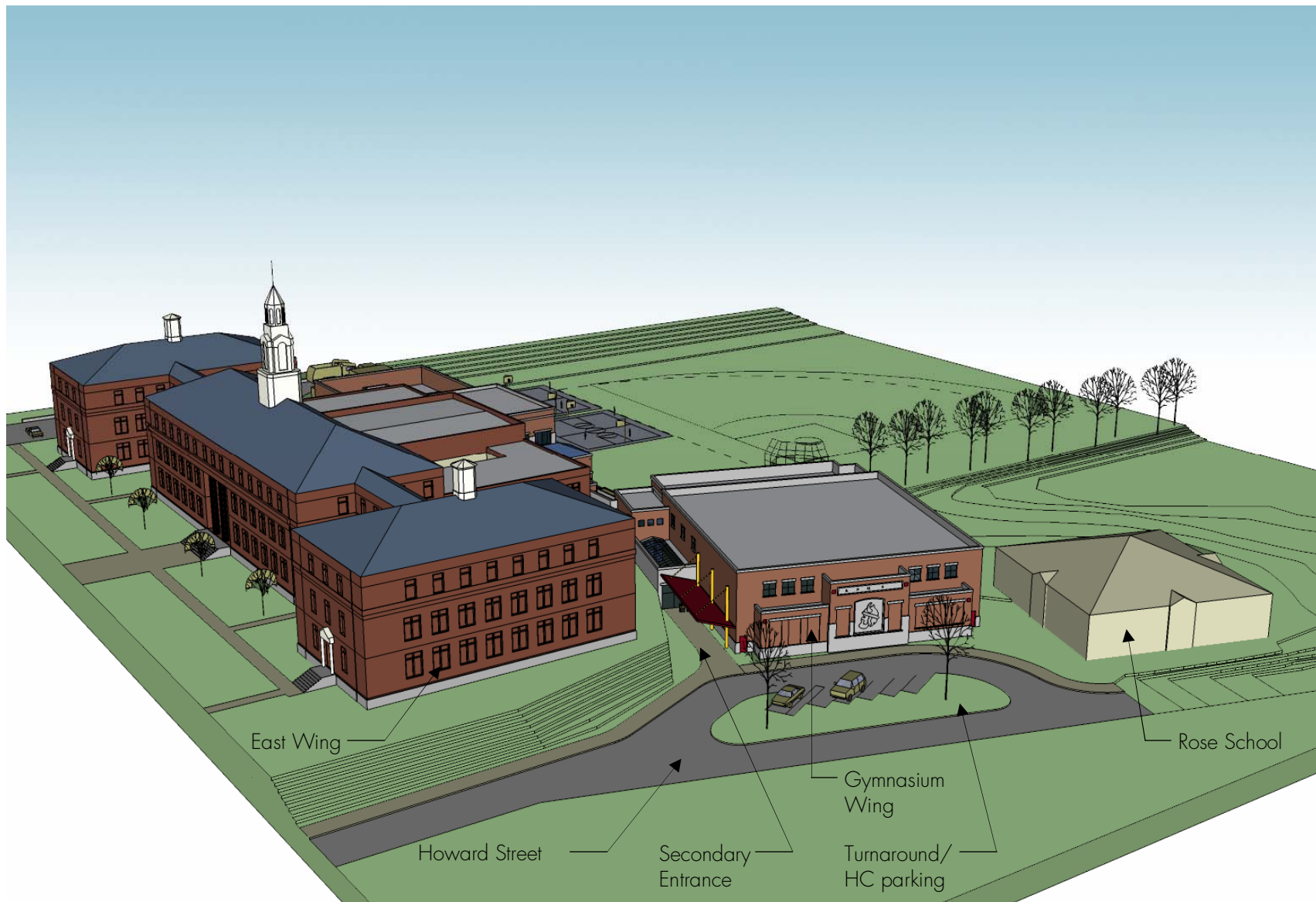
Third Floor Plan

South Elevation

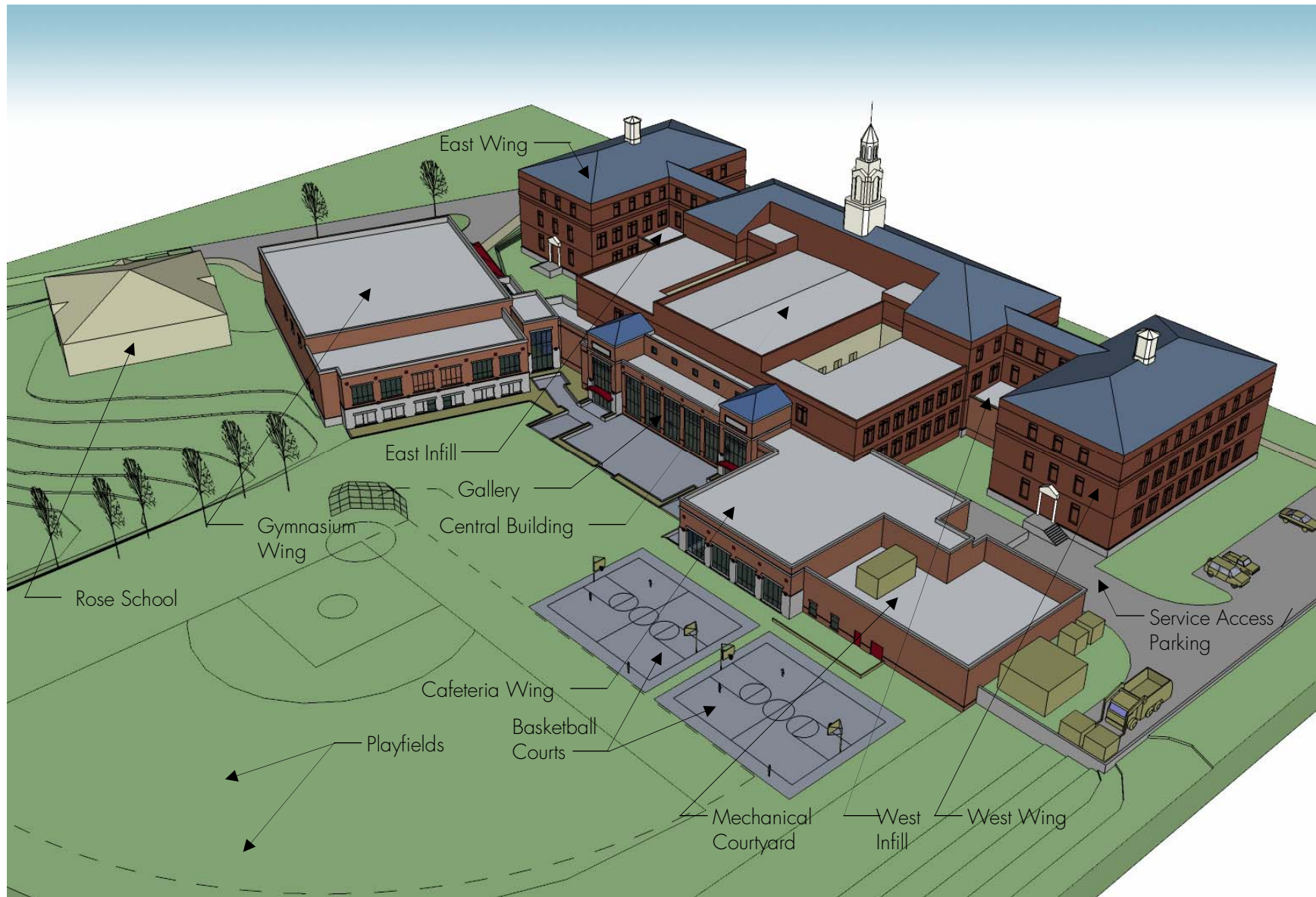
Howard Street Elevation

Gymnasium Wing Elevation

North Elevation

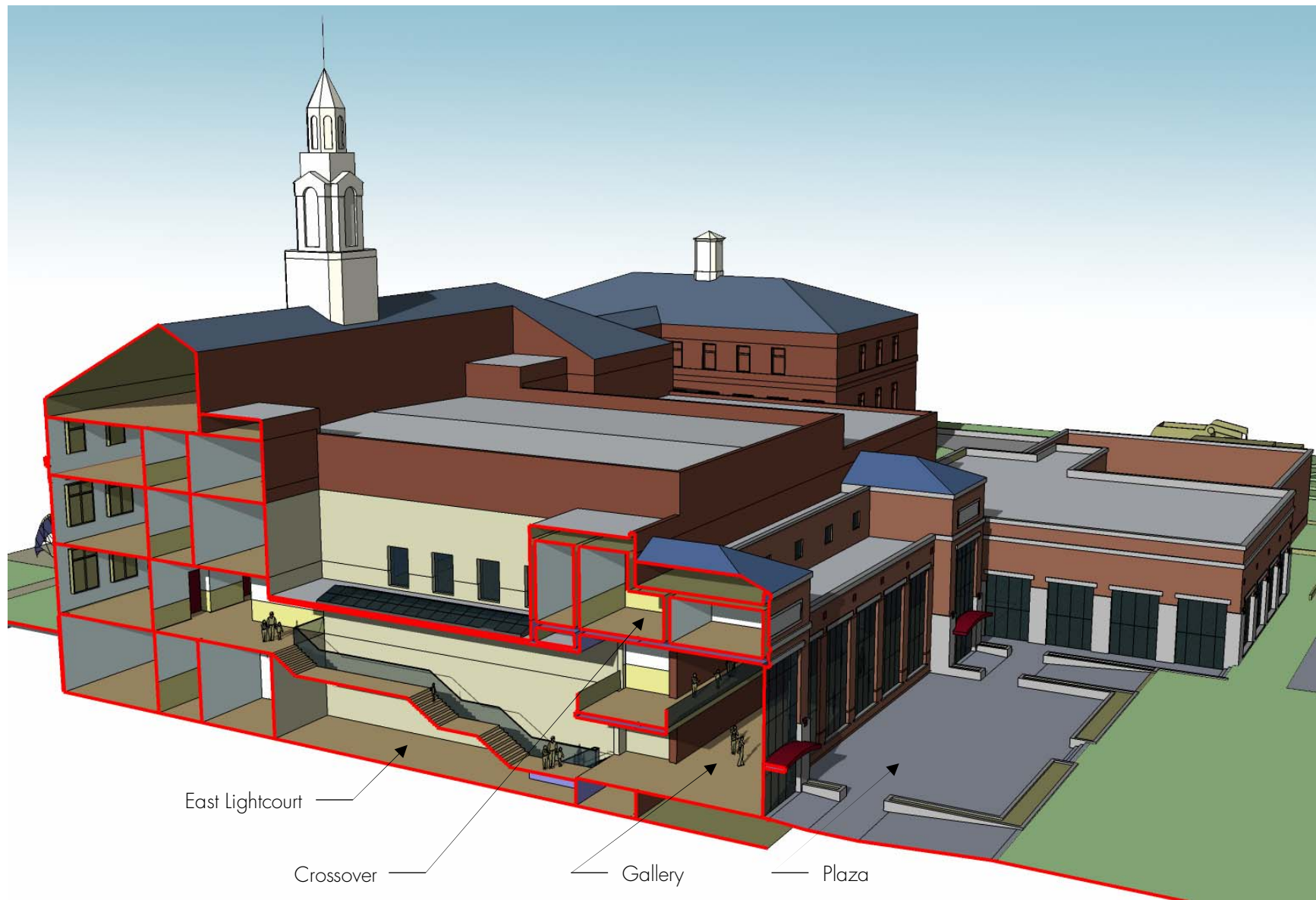


3D MODEL – PERSPECTIVE VIEW FROM THE SOUTHEAST



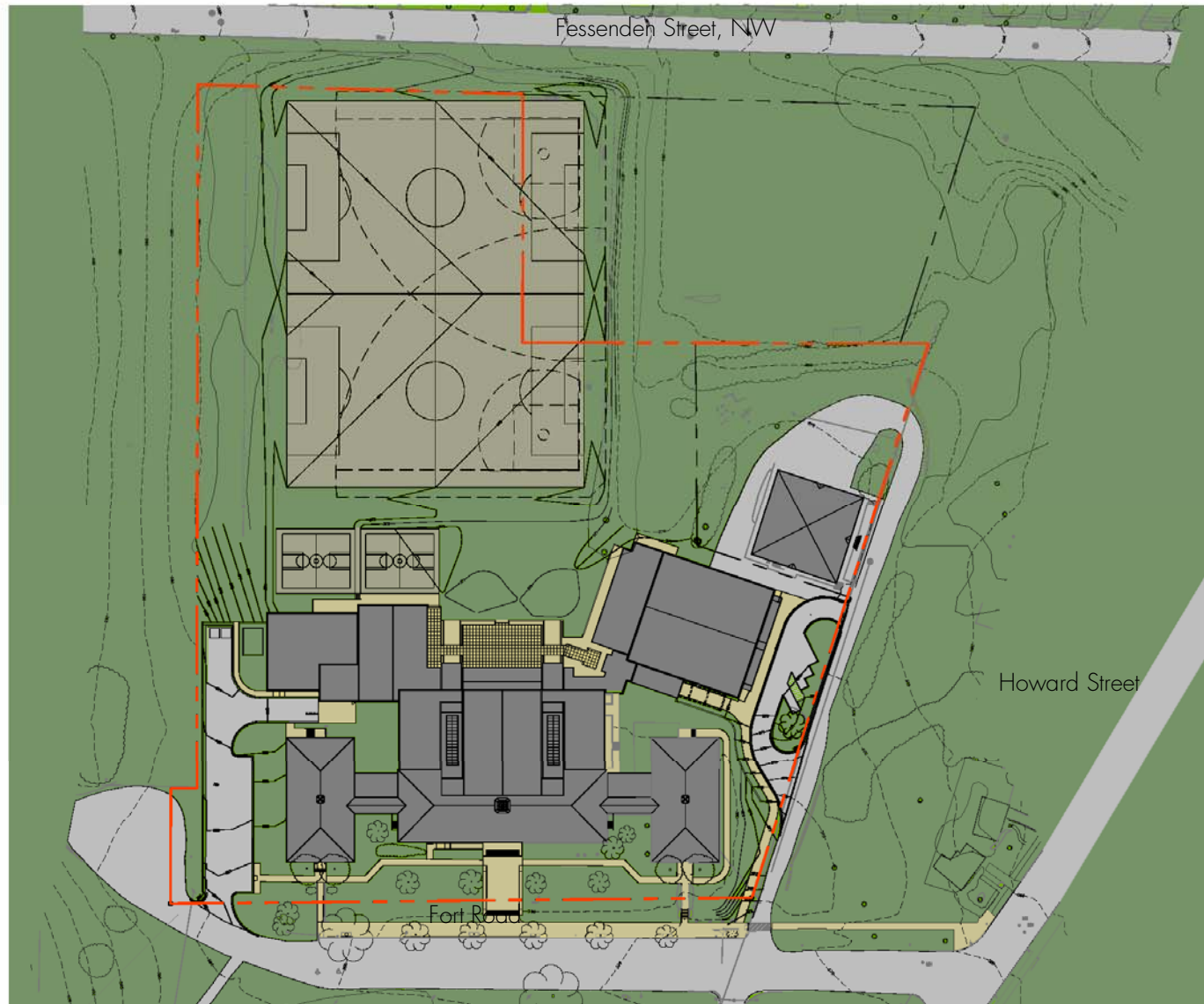
3D MODEL – PERSPECTIVE VIEW FROM THE NORTHWEST



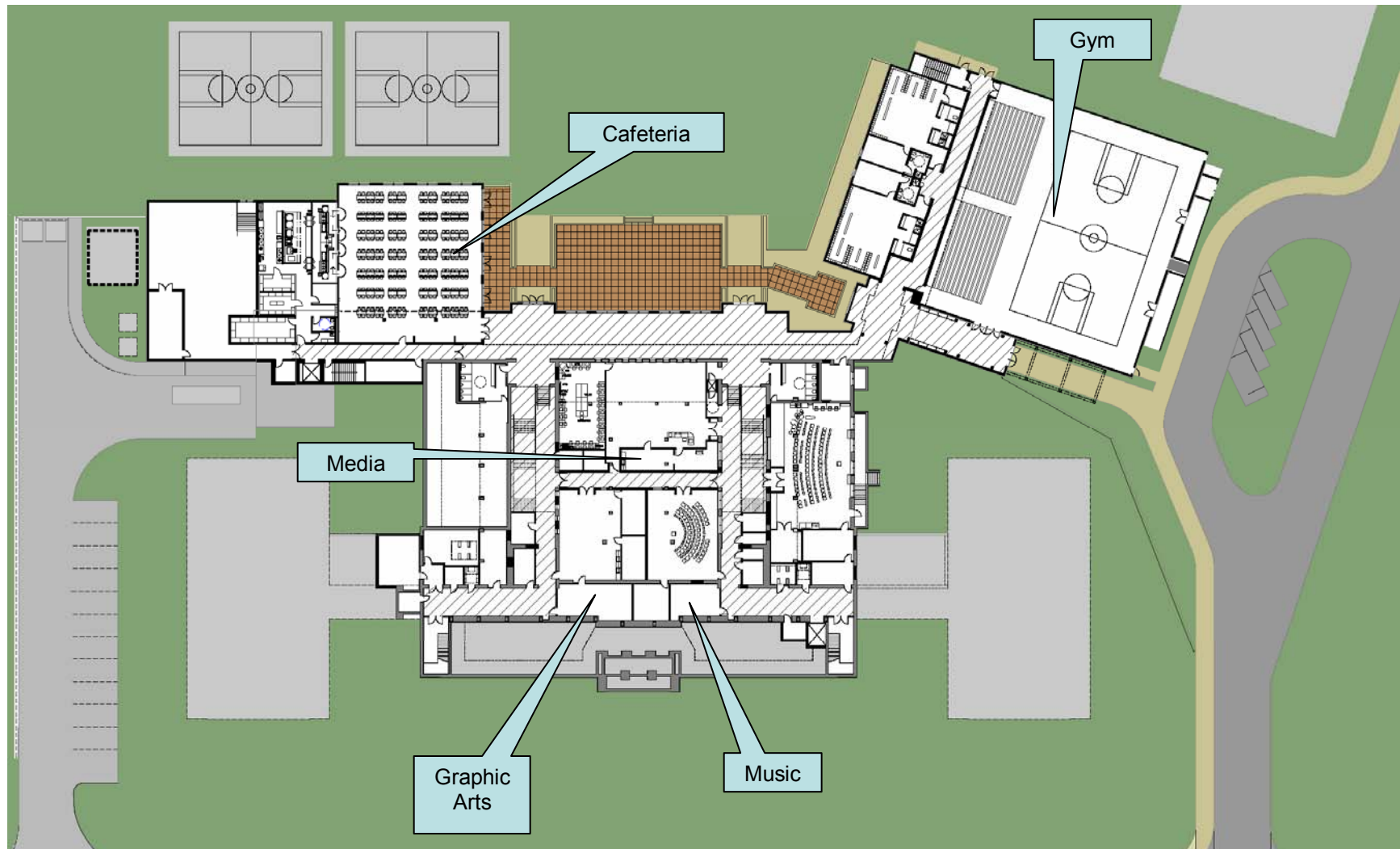


3D MODEL – SECTION PERSPECTIVE OF EAST LIGHTCOURT

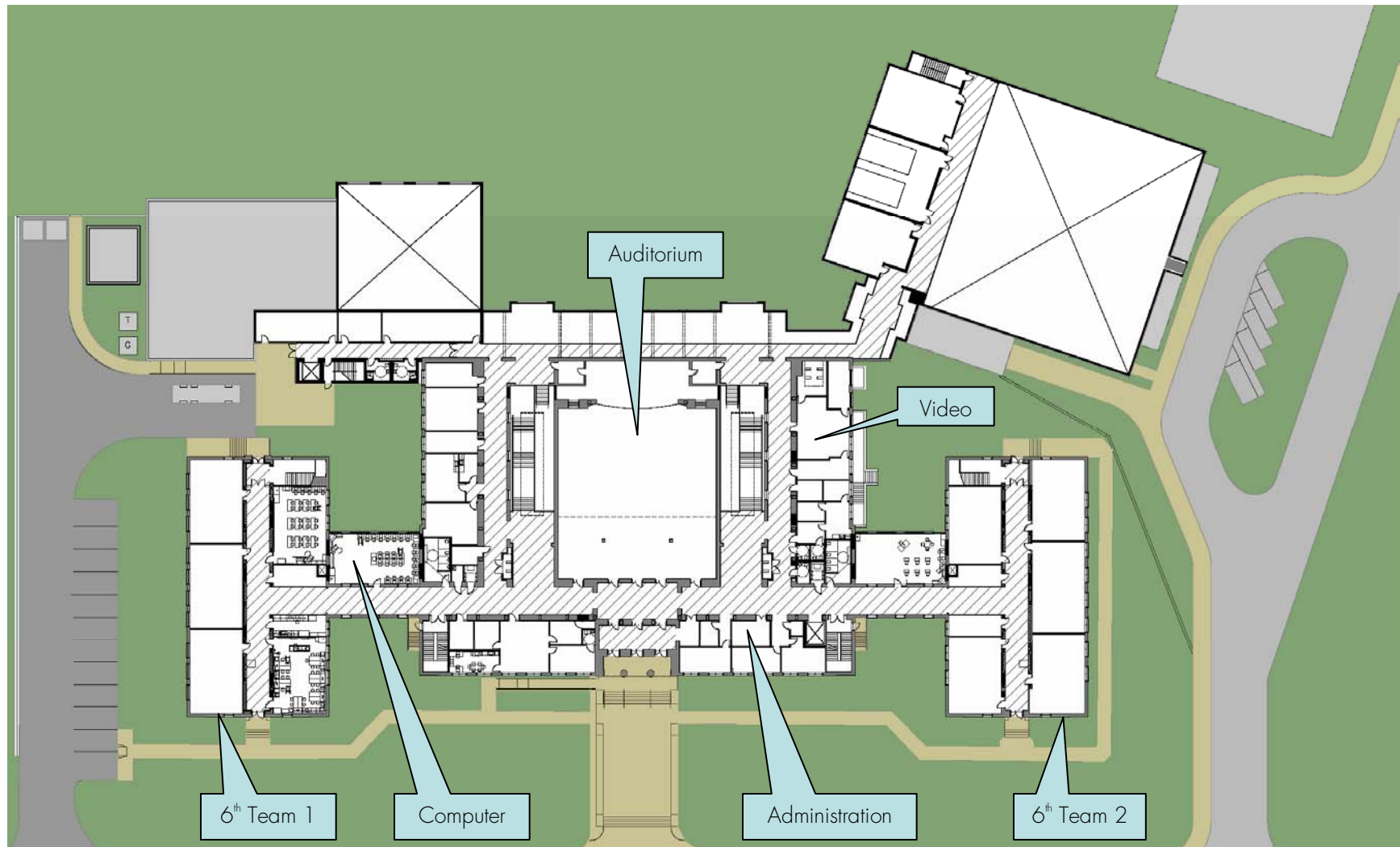




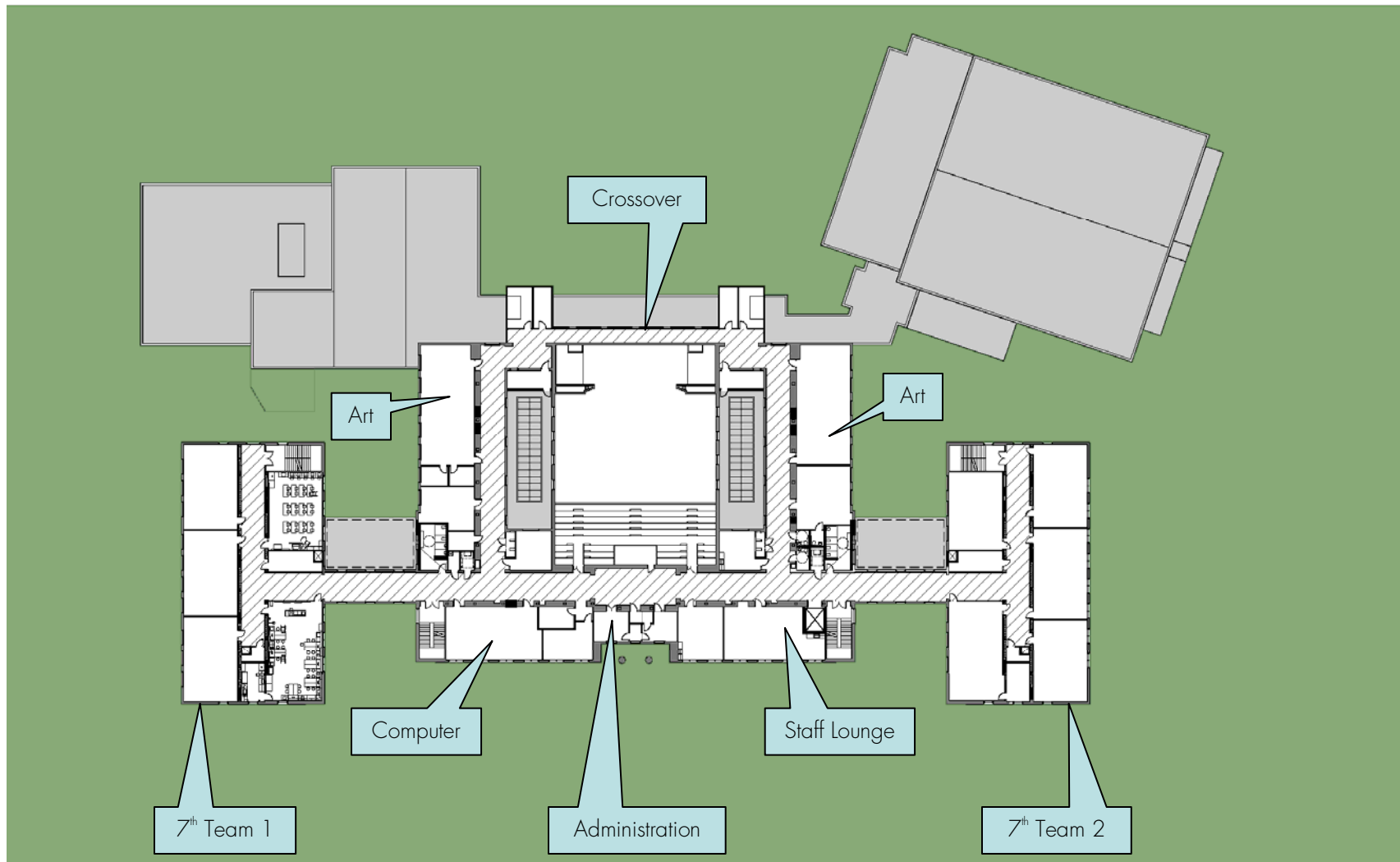
SITE PLAN



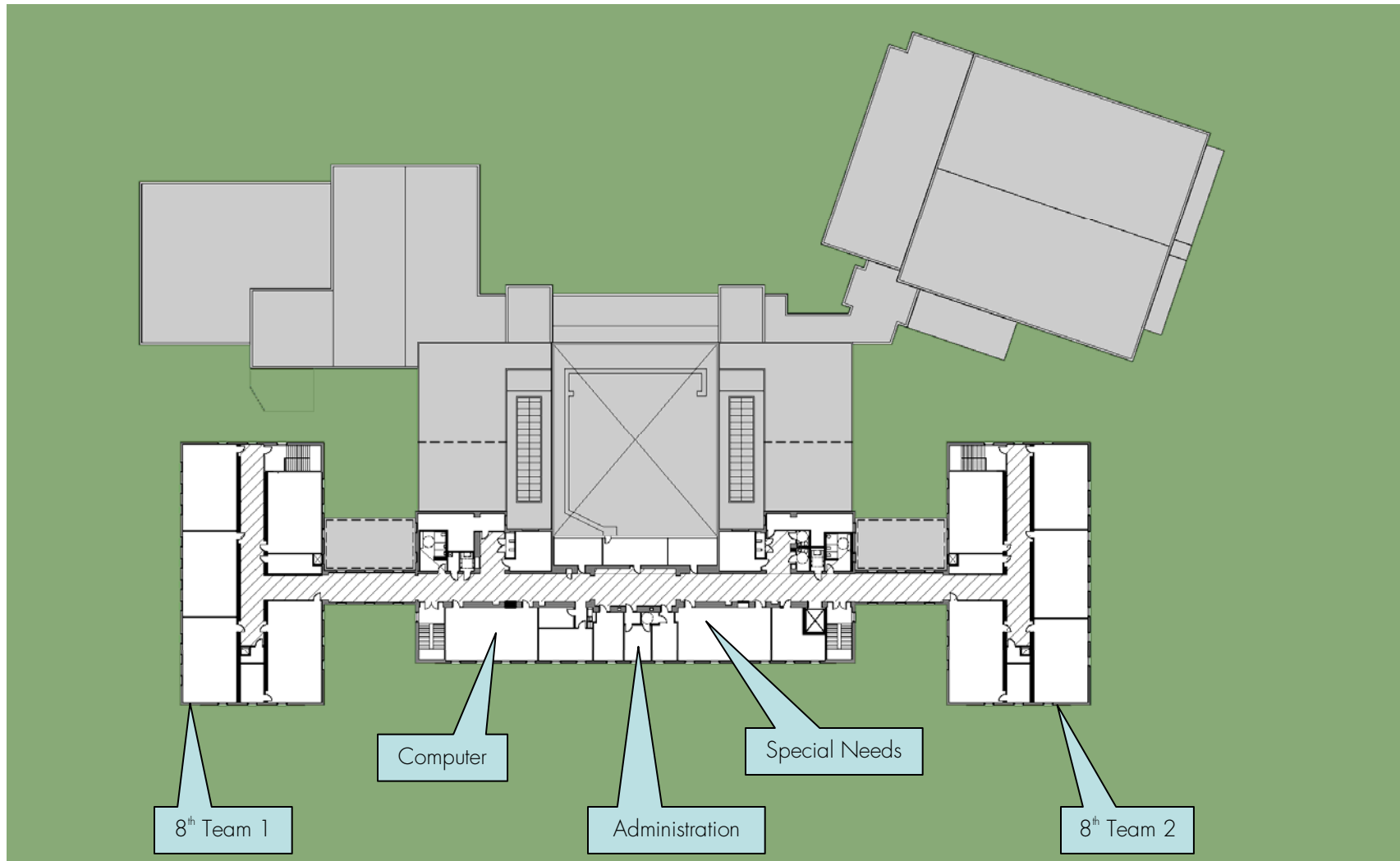
GROUND FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN



THIRD FLOOR PLAN





SOUTH ELEVATION

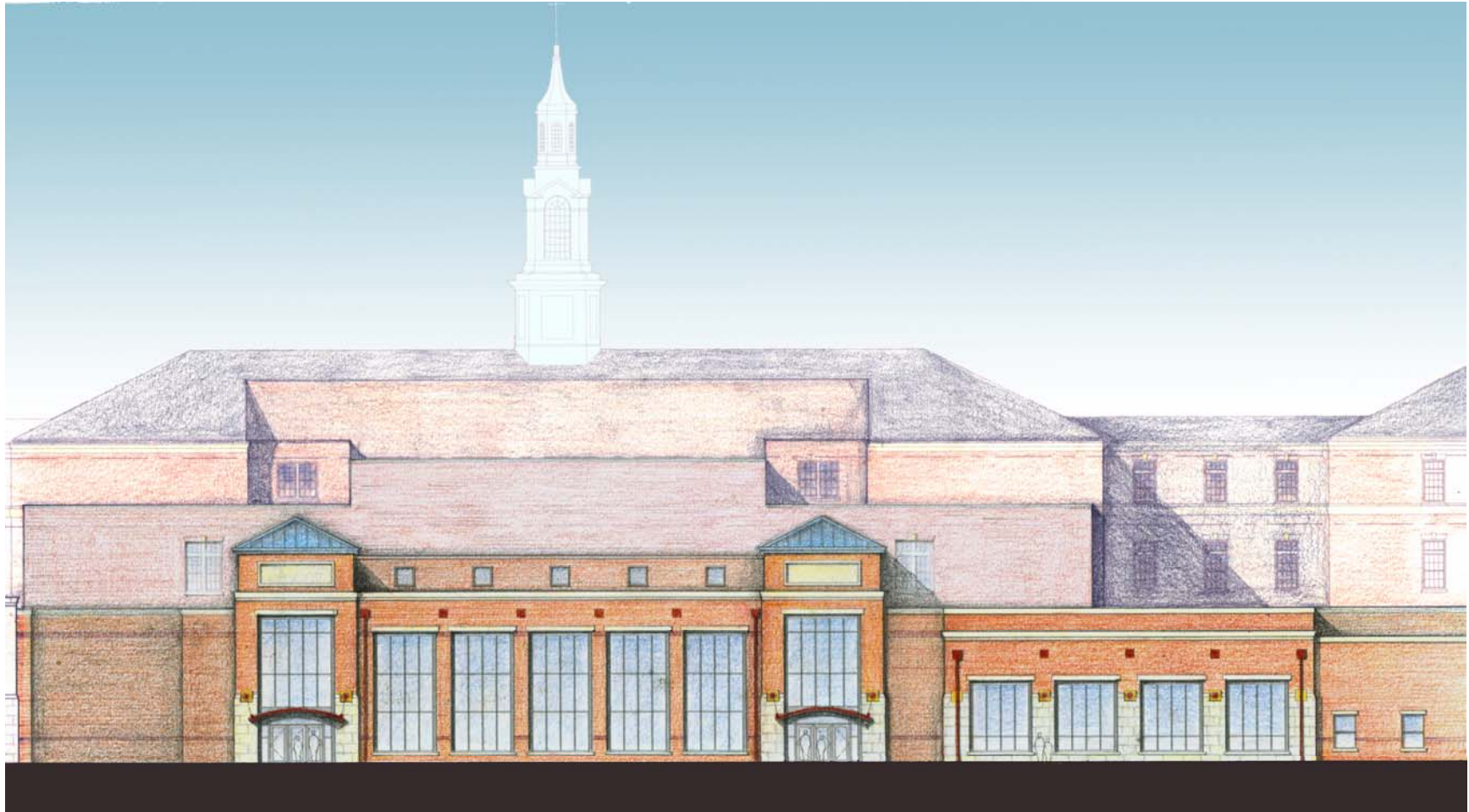


HOWARD STREET ELEVATION



GYMNASIUM WING ELEVATION





NORTH ELEVATION