

San Dieguito Union High School District  
MASTER PLAN FOR CANYON CREST ACADEMY  
November 2011



## Overview

Situated on a 51 acre campus, Canyon Crest Academy (CCA) was originally built in 2006, and is currently the newest high school in the District. It is a “school of choice”, and admission to the Academy is determined through an annual lottery.

The existing facility is relatively new and in good repair; but the District expressed a desire to incorporate 21st Century learning environment principles into the campus. There are several areas on campus which are not being used efficiently, and some areas that are not meeting the current programmatic needs of the school. Additionally, the District intends to increase the enrollment from its current level of around 1,800 students to 2,400 students.

The District is considering exercising an option to buy two adjacent parcels, one eight-acre parcel at the eastern boundary of the site, and one six-acre parcel at the southwest corner of the site. The six-acre parcel would be used for expansion of the Academy campus, whereas the eight-acre parcel would be for the possible creation of a new 1,000 student middle school.

If the District decides to build a new middle school on this site, it would require allocation of current CCA land to the new middle school for athletic field and entrance driveway purposes.

This master plan will deal only with Canyon Crest Academy, but will make reference to the middle school inasmuch as its development might affect planning at the Academy.



6 ACRE ATHLETIC FIELD  
EXPANSION SITE

8 ACRE FUTURE  
MIDDLE SCHOOL SITE

## 21st Century Learning Environments

*Flexible, adaptable facilities encourage teaching and learning that is responsive to the needs of the user. Small learning communities, interactive public spaces and “anytime, anywhere” access to technology will expand the boundaries of the traditional classroom setting.*



Areas for individual and small group study are key elements of a 21st century learning environment.

## Goals

The Site Committee's vision for Canyon Crest Academy embraces the goals that have been established by the District as well as some specific goals for the CCA community. These goals were as follows:

- Increase the capacity of the site to 2,400-2,500 students.
- Provide a new “black box” theater space in order to repurpose the current black box as a new “Quest Lab”.
- Provide a larger dance studio.
- Consolidate under-utilized resource spaces between classrooms to create larger classrooms and labs.
- Provide technology infrastructure to accommodate the increasing number of wireless devices used by students, and provide spaces outside the classroom where students could use these devices.
- Reduce vehicular congestion on Village Center Loop Road.
- Construct a new all-weather track and synthetic soccer field with bleachers.
- Construct a new restroom and concession building for the athletic complex.

## Process

The design team met 3 times with the site committee to determine the needs for the campus, and to discuss lessons learned from their existing operations.

Meeting #1: Process Review and Goals Discussion. The purpose of this meeting with the CCA committee was to set the vision and goals for the campus. The meeting allowed the discussion of parity and equity to inform the discussion. In general, larger classrooms were the number one goal of both committees. This is also a District wide goal, as 21st Century teaching and learning modalities suggest more project-based learning and small group learning. District budget impacts suggest larger class sizes when students are in class, and more online learning for lectures and direct instruction. Also discussed was the need for a new “black box” theater space so that the space currently used for the black box theater could be converted into a new Quest research lab for the science and math departments. The need for additional dance studio space was discussed, and the possibility for expansion of the existing space was explored.

Meeting #2: 21st Century Spaces. A second meeting focused on how “core spaces” could be transformed into more relevant, functional spaces. For example, how can libraries be transformed into student unions



for media use, gathering, and research? The discussion was prompted by images of 21st century learning environments. Potential configurations and sizes of classroom were explored

Meeting #3: Review of Design Alternatives. The design team presented design options for discussion the group. The feedback from the group is incorporated into the final master plan document.

The results of this process were shared with the District-wide facilities Steering Committee for their review and comment.

In addition to meetings with the site committee, a number of meetings were held with the contractor providing preconstruction services to the District for CCA, Balfour Beatty Construction. The purpose of these meetings was to develop phasing and scheduling strategies as well as estimated costs for the work proposed. The resulting schedule and cost models were submitted to the District Steering Committee for their review and recommendation for the final scope of the project.

The recommendations of this Master Plan document reflect the full scope of needs as identified by the CCA Site Committee.

## Capacity and the Building Program

The District's 2008 Facilities Master Plan determined a capacity of 2,400 students at Canyon Crest Academy. The District's methodology for calculating school site capacity assumes a 30:1 student/teacher ratio, and then applies an "efficiency" factor of 85% to accommodate teacher preparation periods which occur in the classroom. There will be 10 new teaching stations added (6 classrooms, 4 science labs) whose size will allow for greater loading. The model capacity is shown below:

Teaching Stations(existing):	75 TS @ 30:1 (.85) =	1,913
Teaching Station(new):	10 TS @ 42:1 (.85) =	357
Special Education:	2 TS @ 15:1 (1.0) =	30
PE Stations:	5 TS @ 30:1 (1.0) =	150
	Total	2,450

### BUILDING PROGRAM AREAS (Base Program):

New Classroom Bldg.:	23,160 GSF
New Dance Studio:	2,400 GSF
New Black Box Theater:	2,750 GSF
Student Union/Media Center:	9,070 GSF
Quest Lab:	2,400 GSF
Restroom/Concession Building:	1,000 GSF
TOTAL BUILDING AREA (Base Program):	40,780 GSF

### BUILDING PROGRAM AREAS (Optional Additional Program):

Reconfigure Existing Classroom Buildings C, D, and E	
to match configuration of New Classroom Building B	
3 buildings @ 23,160 GSF each:	69,480 GSF

### Vision

The vision for the facilities of San Dieguito Union High School District is focused on creating learning environments that embrace variety in teaching and learning styles, are responsive to our rapidly changing world, and will encourage students to be good stewards and citizens of a greater community. The three areas of focus are:

- Flexible, Adaptable and Technology Rich Facilities
- Sustainable, High Performance Environments for Learning
- Community Focused Campuses



Sustainable, High Performance  
Environments for Learning

*The facts have shown that high performance learning environments improves student performance and attendance. Sustainably designed facilities are models of energy efficiency, but more importantly are teaching tools that model behavior for living in our resource challenged world.*



*School gardens are an important component of a sustainable school.*

## Sustainable, High Performance Learning Environments

San Dieguito Union High School District brought forward a vision for sustainable, high performance learning environments focused on saving energy, improving student performance and on creating future environmental stewards with a strong understanding of the impact of the built environment on the world. The district has already invested in renewable energy resources (solar energy) in its pursuit of their sustainable vision. As the pyramid demonstrates (facing page), solar energy is the proverbial “icing on the cake” in the sustainability plan. As Canyon Crest Academy moves through the design process, the team will focus on those items that will make the most difference, namely:

- **Building Envelope/Energy Conservation:** The building envelope is the most effective way to save energy. Proper building orientation, high quality building materials (insulation, dual paned windows, etc.) and energy management systems that promote conservation are the most important first steps in sustainably designed buildings. The first and most important goal is to first reduce the demand for energy.
- **Daylighting:** Daylighting, or natural light, when appropriately oriented and controlled saves energy and improves user well being. By reducing the electric lighting needed, energy is saved – both from the reduced electricity and the lowered demand on air conditioning systems when less heat is generated from electric lights. Also, appropriately designed daylighting in classrooms has been proven to improve student performance. This is the most significant benefit to schools.
- **User Control/Operational Performance:** Why do sustainable strategies fail when placed in to operation? The answer is usually in the area of user control. When users have some control of their environment, and understand the system, they are more likely to behave in a way that saves energy. Examples such as thermostat control, lighting controls and appropriate window blinds influence the user’s experience.
- **High Efficiency HVAC:** The more efficient the system, the greater the savings. After demand is reduced to its lowest level, the size of the system can be reduced as well. Displacement ventilation, as an example, is a system that may be considered here as well as passive cooling which is possible in many climates in California.
- **Solar:** Solar and other renewable create energy to meet the demand, or a portion of the demand. By reducing demand first, the investment in renewable can be lessened.

Renewable, recycled and local material choices are important characteristics of sustainable buildings and will be incorporated where the long term maintenance properties align with the district’s operational goals.

High performance schools are more than energy efficient. The high performing school will incorporate strategies that positively impact student health and performance such as classroom acoustics, natural ventilation and indoor air quality.

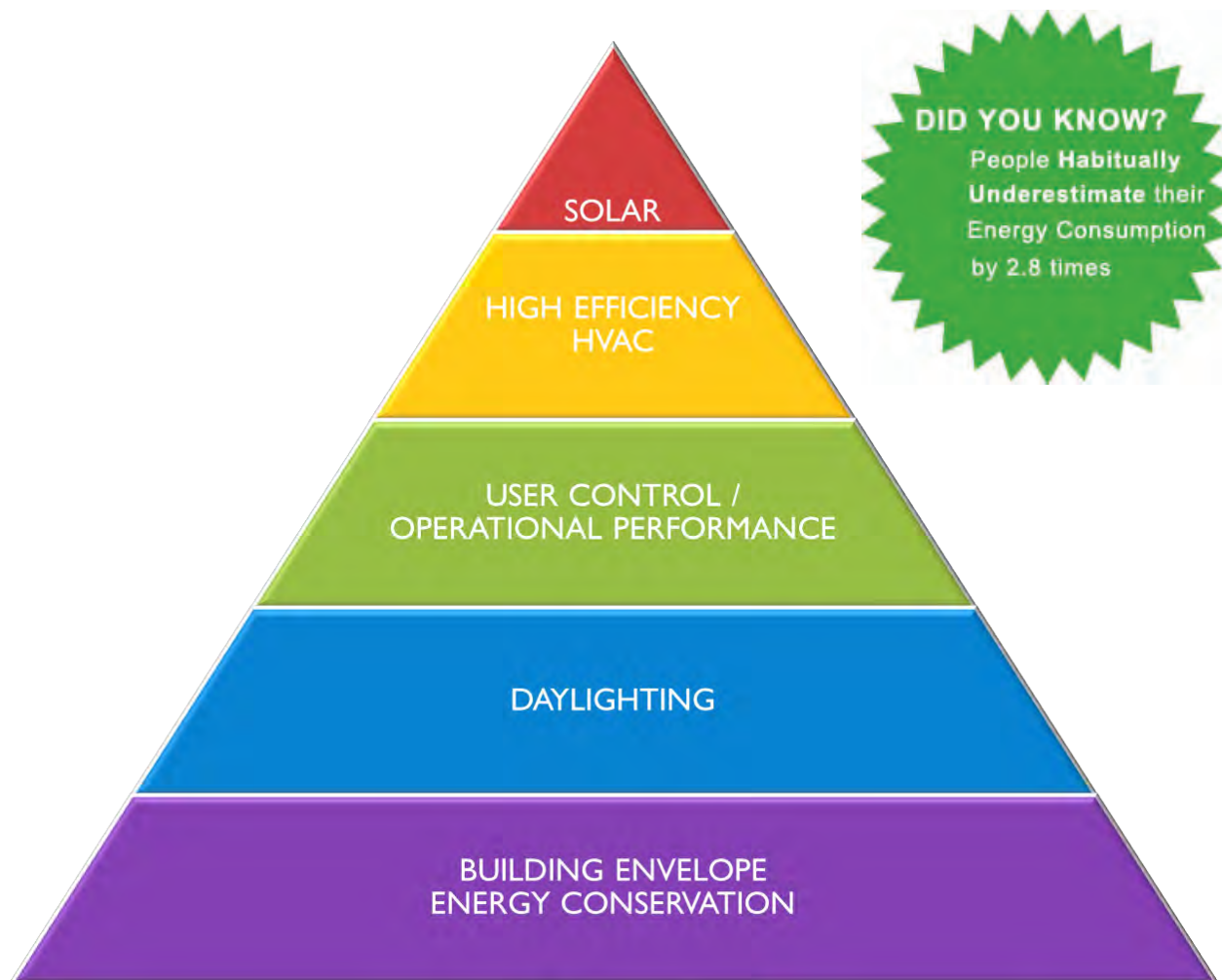
## Sustainability (cont'd)

Sustainable design principles are essential to high quality building design. The pyramid below reflects an efficient and effective prioritization of these strategies. Especially in the design of public buildings, emphasis is on providing the “biggest bang for the buck” whether in energy (and general fund) savings, improving occupant comfort or bolstering student performance.

For example, the foundation of the pyramid is to first save energy, thereby reducing the overall demand on the system. Next, effective daylighting not only enhances student performance and well being, it also allows lights to be turned off and heat gain in the classrooms to be reduced, saving energy.

User behavior has a big effect on the effectiveness of sustainable design - do they understand the systems and compliment them by say, keeping the lights off?

Creating new energy, with solar or other renewables is the final strategy. Often expensive, good sustainable design should rely on renewables primarily to offset an already minimized demand.



*“Natural daylighting not only reduces energy consumption with the reduced need for electric lighting and by covering the heat generated by electric lighting, it has been proven to improve student academic performance”*

*CHPS - The Collaborative for High Performance Schools  
CHPS, the standard for sustainable K-12 school design, establishes a point system to measure the anticipated sustainability “index” for school projects in the categories of:*

- Leadership, Education and Innovation
- Sustainable Sites
- Water
- Energy
- Climate
- Material and Waste Management
- Indoor Environmental Quality

## Master Plan

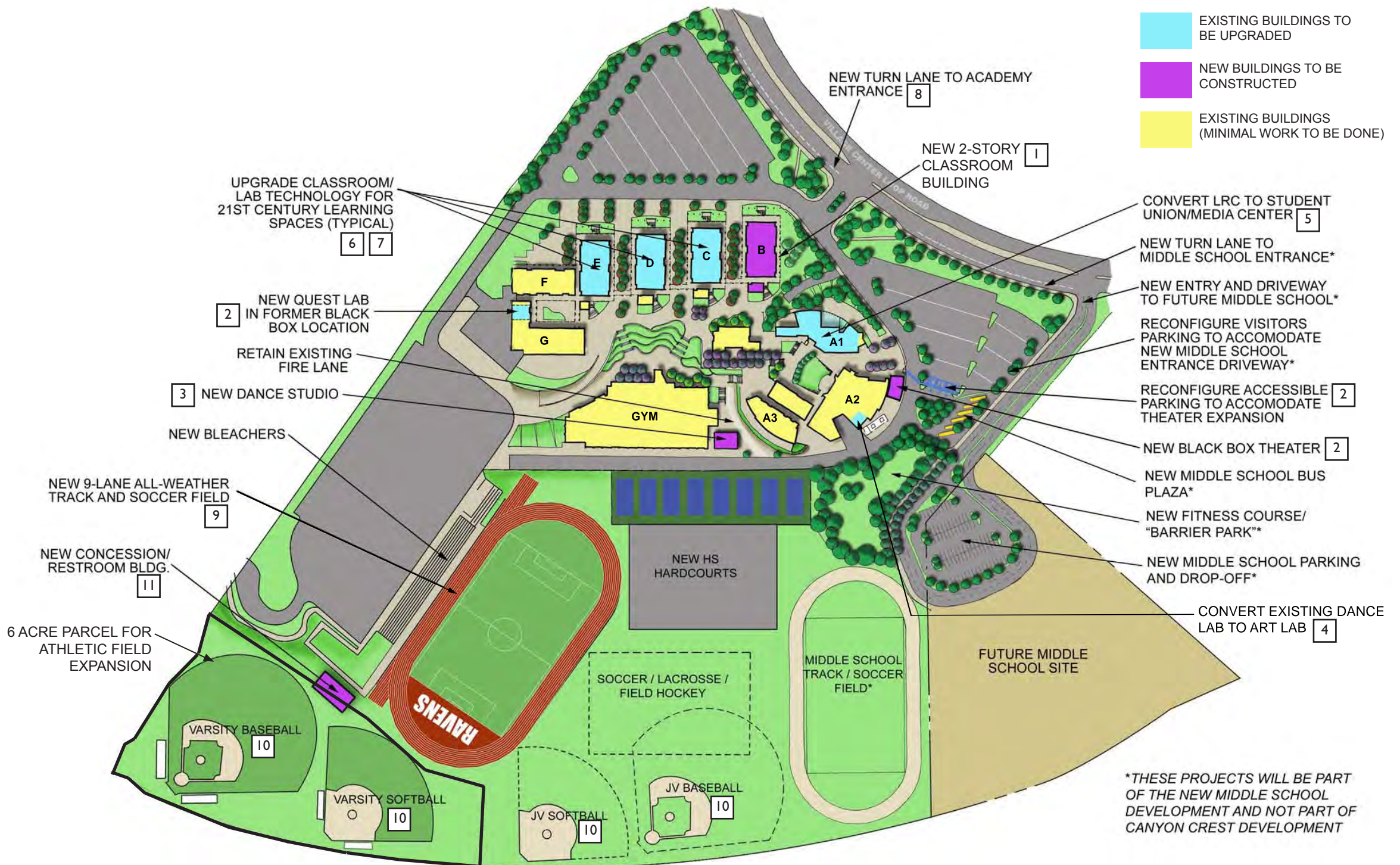
The scope of this Master Plan generally covers the following:

- 1 Increase the capacity of the site to 2,400 students through the construction of a new two-story classroom building.
- 2 Provide a new “black box” theater space. Convert existing “black box” into new Quest Lab
- 3 Provide a new, larger dance studio.
- 4 Convert existing dance lab into new art lab
- 5 Convert existing library/LRC into new Student Union/Media Center
- 6 Consolidate under-utilized resource spaces between classrooms to create larger classrooms and labs.
- 7 Provide technology infrastructure to accommodate the increasing number of wireless devices used by students.
- 8 Create a new vehicular deceleration lane to the campus entrance from Village Center Loop Road.
- 9 Construct a new all-weather track and synthetic soccer field with bleachers.
- 10 Construct a new varsity baseball and softball complex.
- 11 Construct a new restroom and concession building for the athletic complex.



# LEGEND

- EXISTING BUILDINGS TO BE UPGRADED
- NEW BUILDINGS TO BE CONSTRUCTED
- EXISTING BUILDINGS (MINIMAL WORK TO BE DONE)



\*THESE PROJECTS WILL BE PART OF THE NEW MIDDLE SCHOOL DEVELOPMENT AND NOT PART OF CANYON CREST DEVELOPMENT

## Student Union/Media Center

Part of the District's plan to create 21st Century Learning Environments is the recognition that the role of traditional libraries on high school campuses will change. As more library resources become digital versus printed media, the need for storage of print media will diminish. The library will become more of a student union/media center, where students will access online resources from their own devices, working independently or in small groups.

The existing library at Canyon Crest Academy is a large volume space with pleasant natural daylight that lends itself well to the creation of such a space. Seating would be a mix of soft upholstered chairs and couches and work tables and counters to provide a variety of gathering and work spaces. The ambiance would be similar to that of a cafe, where students could eat and work in a more casual setting.

Media Center:	6,140 GSF
Coffee Bar:	455 GSF
Reference Library:	1,425 GSF
Library Technician:	375 GSF
Storage:	110 GSF
<u>Project Rooms:</u>	<u>565 GSF</u>
TOTAL:	9,070 GSF



*Access to various forms of food service, such as a snack bar, to energize and enrich the health of the students and provide an alternative to a traditional cafeteria.*



LIBRARY  
TECHNICIAN

STORAGE

COFFEE  
BAR

MEDIA CENTER

PROJECT ROOMS

REFERENCE LIBRARY

## Dance Studio

The site committee indicated that the existing dance studio located in the arts complex building A2 is too small to accommodate the demand for dance classes. The feasibility of expanding the existing space was explored, but the building's layout, structural system, and site topography make expansion of the existing space difficult. It was determined that it would be more cost effective to build a new dance studio elsewhere on the campus.

The new dance studio will be a 2,400 square foot free-standing building that will be located adjacent to the existing gymnasium. The adjacency to the gym works well, as most dance courses are PE courses rather than performing arts. Large light-filled volume spaces with wood dance floors and mirrored walls will provide flexible spaces suitable for the instruction of ballet, jazz dance, as well as aerobics and yoga.

Dance Studio: 2,400 GSF



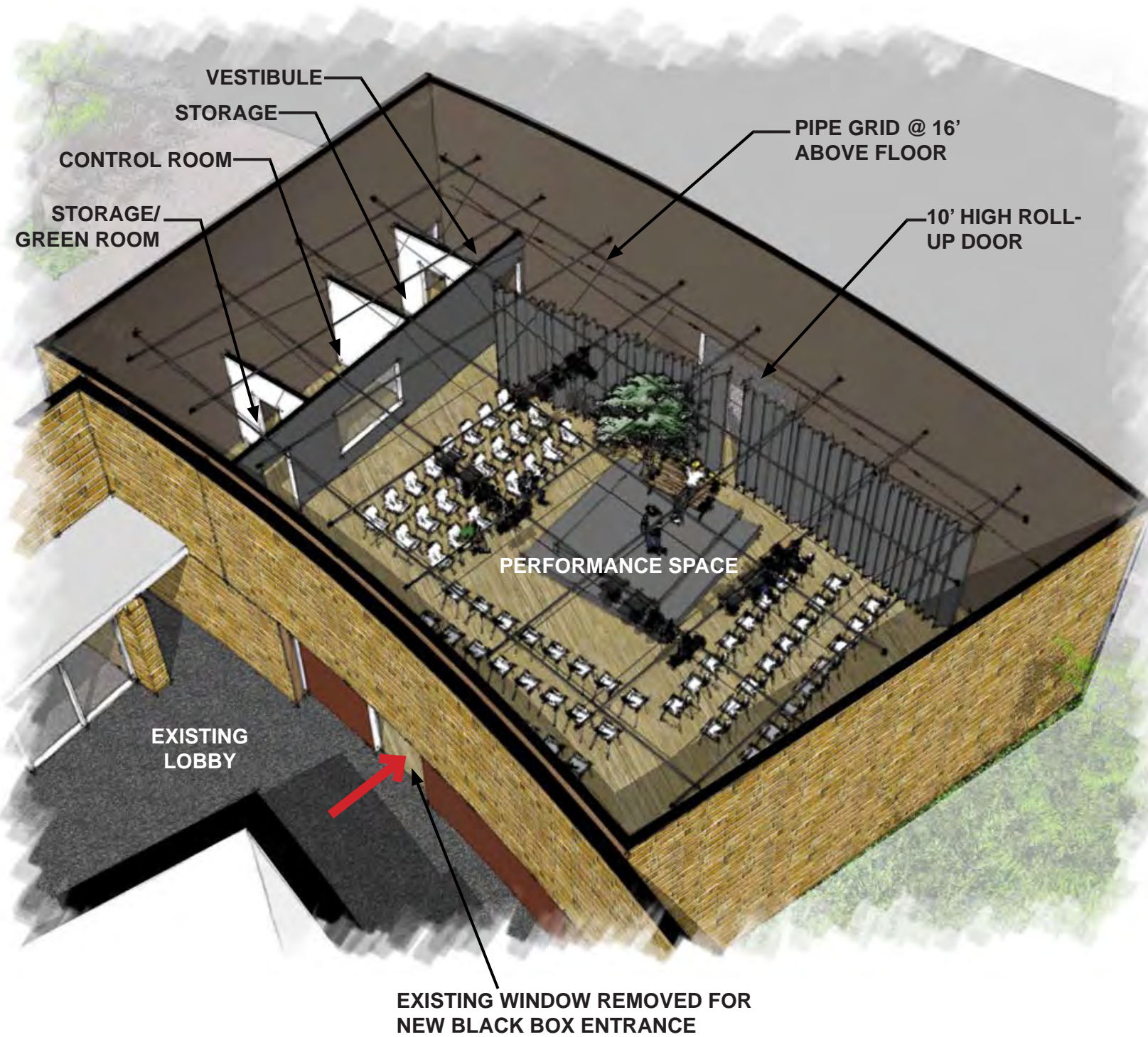
## Black Box Theater

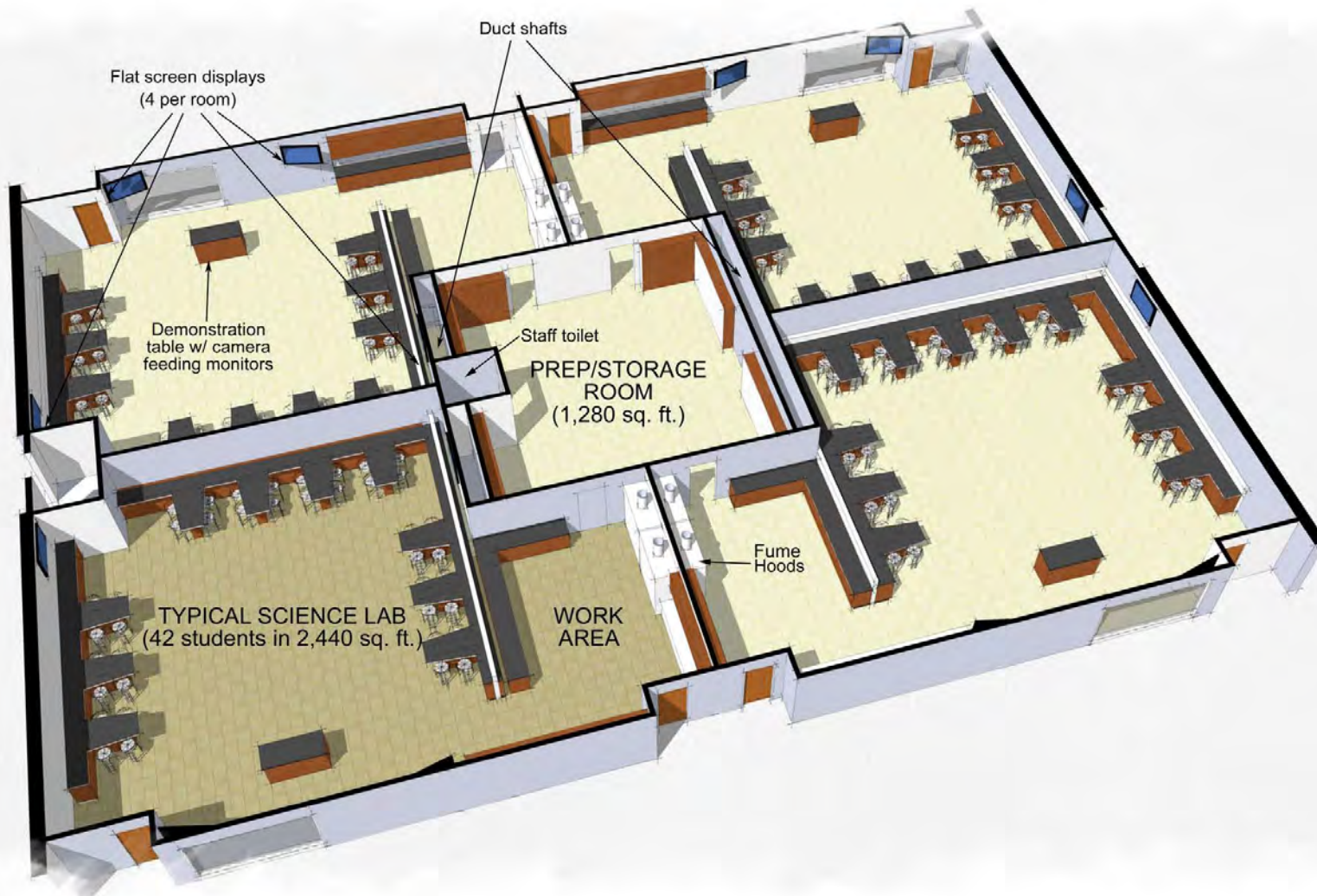
Growth in CCA's Envision arts program has led to the construction of a black box theater space in Building G. However, the black box is remote from the campus' other arts facilities located across the campus in buildings A2 and A3. The space currently occupied by the black box would be more ideally used by CCA's "Quest" research and development program. These factors lead to the decision to build a new black box theater space in a location more convenient to the rest of the campus' arts programs.

The new black box will be approximately 2,400 square feet, the same size as the current black box. The new black box will be located adjacent to the lobby that serves the main stage theater, so amenities such as box office, concessions, and restrooms will be readily available to patrons of events held in the black box theater.

The new space will have a 16' high pipe grid for rigging of curtains, lighting and scenery. There will be no fixed seating to allow for a variety of presentation orientations. There will be a separate sound and lighting control room, with connections around the theater space to allow remote lighting and sound control.

Performance Space:	2,340 GSF
Storage/Green Room:	140 GSF
Control Room:	125 GSF
Storage:	85 GSF
<u>Vestibule:</u>	<u>60 GSF</u>
<b>TOTAL:</b>	<b>2,750 GSF</b>





## Science Labs

One area of concern identified by the site committee was the size of existing science labs. The small size of the labs has proven difficult to work in (and potentially unsafe) because the desks and equipment impede sight lines and efficient movement in the space.

The master plan is to provide larger 2,550 square foot labs on the second level of the new Classroom Building B, with the option to reconfigure the labs in the same fashion in the existing buildings. The larger lab size will allow lecture and lab work to be done easily in the same room. Ample space will be provided for specialty equipment and hoods in a separate work area that can be supervised by the teacher from the main lab area. The teacher's demonstration bench will be provided with a camera to allow students to watch demonstrations on video monitors around the room or on their own mobile devices. Moveable furniture and lab benches will allow flexibility in the configuration of the lab spaces and the types of experiments students can do.

The campus' technology infrastructure will be enhanced to allow for the simultaneous use of numerous wireless devices streaming various types of media.

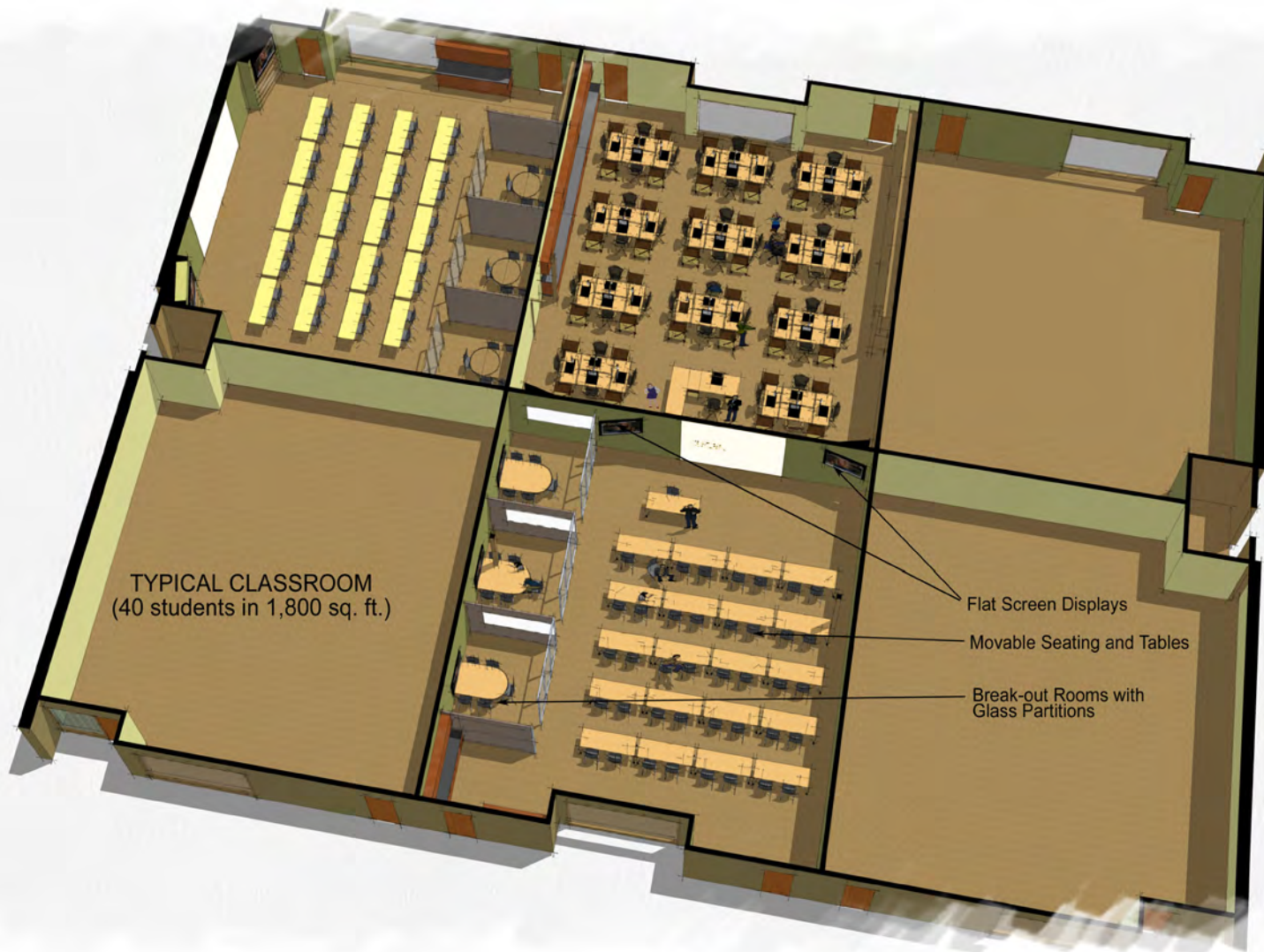


New Classroom Building			
New Classrooms	6 x	1,930 GSF	= 11,580 GSF
New Science Labs	4 x	2,550 GSF	= 10,200 GSF
Science Prep Area	1 x	1,380 GSF	= 1,380 GSF
Total, New Classroom Bldg.			23,160 GSF

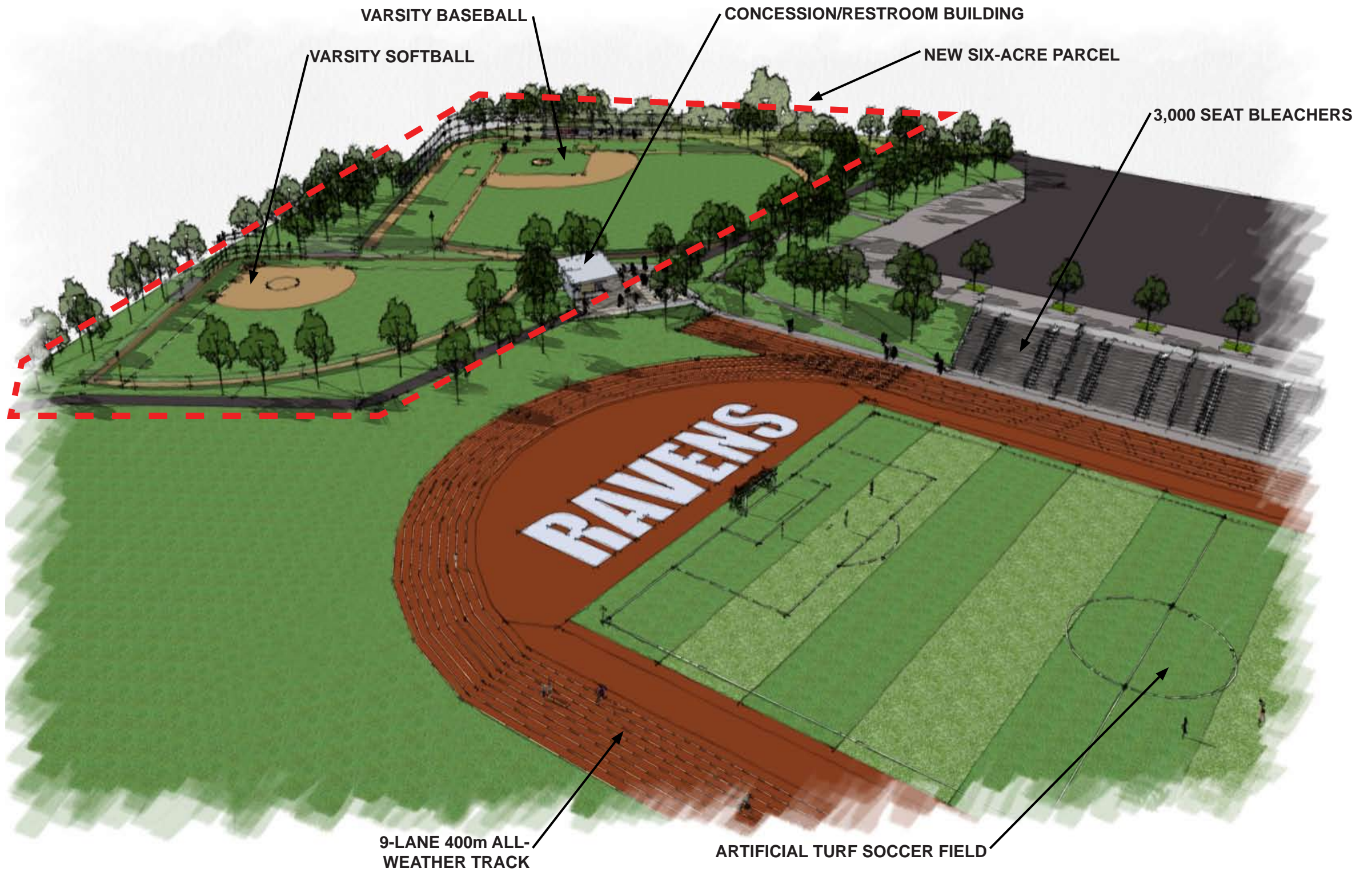
## Classrooms

The new classroom/lab building will have footprint similar in dimension to the existing adjacent classroom buildings. However, the new Classroom Building B will have 6 classrooms on the lower floor and 4 science labs on the upper floor as opposed to the existing buildings' configuration of 8 classrooms and 6 science labs. By fitting the new classroom configuration into the existing buildings' "footprint" the existing buildings can be reconfigured match the new building layout in the future.

Located on the ground level of the new classroom building, the new classrooms will be approximately 1,900 gross square feet in keeping with 21st Century Learning Environment principles, allowing for a variety of instructional methods, such as small group breakout and project-based learning.



*Movable furniture and partitions allow the classrooms to be set up to adapt to various learning modalities and instructional methods.*



View looking south-west at the new athletic fields.



## Overview of Site Improvements

The proposed site improvements represent the most visible changes that will occur on the CCA site, particularly as they affect PE and athletics. There will also be significant changes made to the CCA site in preparation for the construction of the new middle school, however these changes are not considered part of the CCA building program and are referenced here to provide a complete understanding of their impacts to the CCA site.

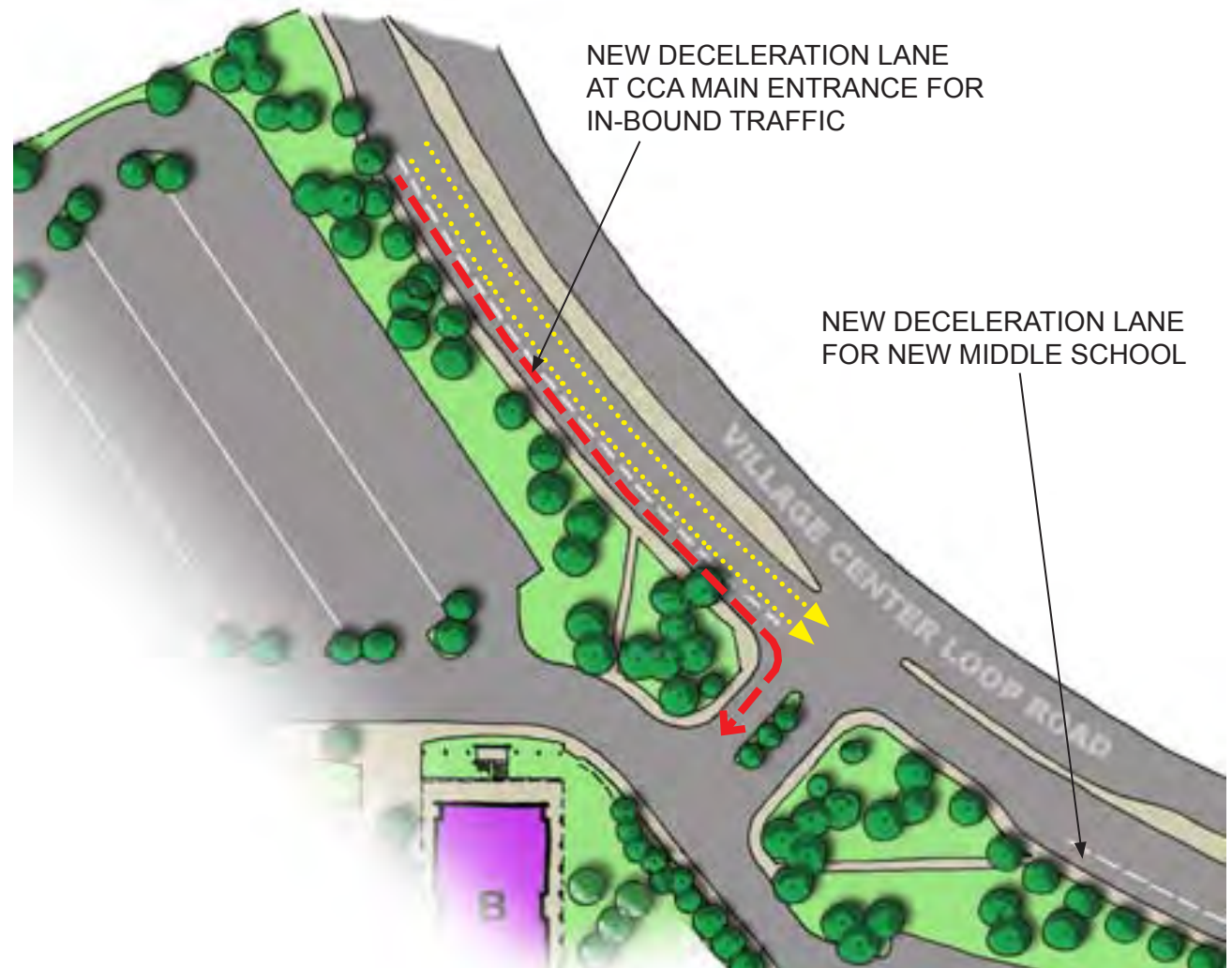
### ***New Deceleration Lanes***

There will be two new deceleration lanes provided on the southeast-bound lanes of Village Center Loop Road fronting the CCA site. The first lane will run from the northern-most point of the site boundary to the main entrance driveway to the campus. The second lane will be part of the new middle school improvements, and will begin just to the east of the CCA entrance driveway and run to the eastern-most boundary of the site. These lanes are intended to lessen the impact of traffic associated with student drop-off and pick-up.

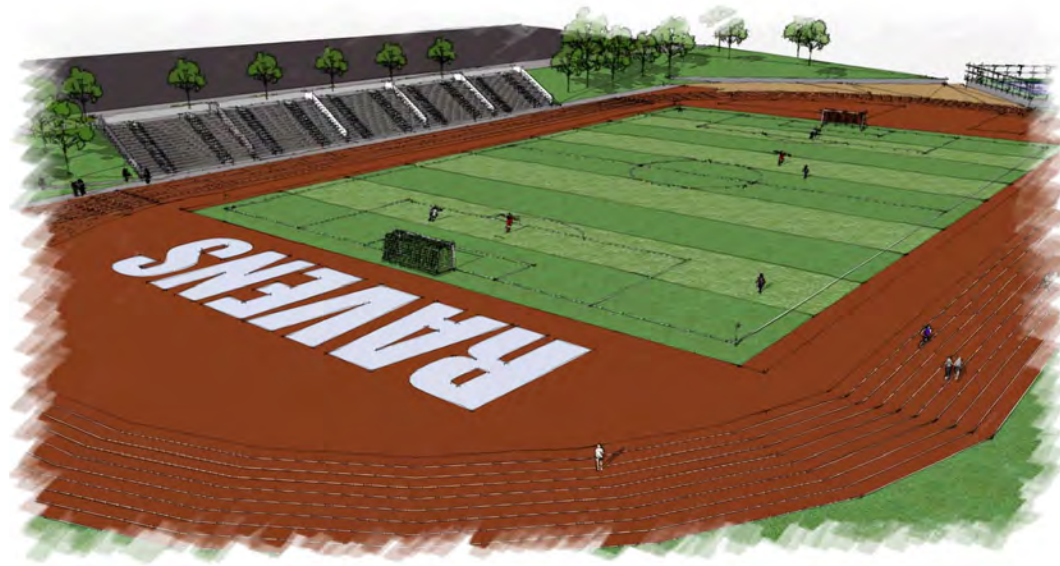
### ***Athletic Fields***

As an offset to the field space that will be designated for the new middle school, the District intends to purchase the six-acre parcel that adjoins the CCA site to the southwest. Significant grading will occur at the athletic fields to minimize grade differentials between fields and to allow for more effective use of the entire site by minimizing slopes. New topsoil will be imported to provide a suitable medium for turf growth.

A description of the new athletic facilities is on the following page.



*New Deceleration Lanes at Campus Entrance*



## New Athletic Facilities

### *Track/Soccer*

The existing decomposed granite running track and football field will be replaced with a 9-lane 400 meter all-weather running track. The proportions of the track will be adjusted to accommodate an artificial turf soccer field. New bleachers seating for 3,000 spectators will be built into the embankment alongside the track, making the facility suitable for hosting regional sporting events.



### *Baseball/Softball*

The baseball and softball facilities will consist of four fields; a varsity baseball field, a varsity softball field, a JV baseball field, and a JV softball field. The varsity fields will be dedicated, fenced fields with natural turf. The JV fields will have backstops and "skinned" infields, but their outfields will be defined by movable fencing to allow the turf to be used for other PE and athletics uses.



### *Concession/Restrooms*

A new concession/restroom building will be located in an area central to the track, soccer, softball, and baseball fields. Besides meeting concession and restroom needs, this facility will anchor the athletic fields creating a sports complex at Canyon Crest Academy.

## New Middle School Site Accommodations

As stated earlier, these accommodations for the new middle school are not part of the Canyon Crest Academy master plan; however they are presented here because of their impacts on the planning at CCA.

### FITNESS COURSE/BARRIER PARK

Situated between the new middle school parking and the CCA theater building is a small portion of the CCA athletic fields that is generally unusable for athletics due to its sloping topography. This area will become a fitness course that would be available to both CCA and the middle school. With a dense planting of trees, this area could also serve as a "barrier park", limiting visual connection between the two campuses and minimizing the assumption that the two are programmatically connected.

### MIDDLE SCHOOL TRACK & FIELD

A portion of the existing playfields at Canyon Crest Academy will be designated as PE space for the new middle school. To offset this, a six-acre parcel will be annexed to the CCA site at the south-west corner.



### NEW ENTRANCE DRIVEWAY

A new entrance driveway from Village Center Loop Road serving the new middle school site will be constructed along the easterly edge of the site where CCA visitor parking is located. Because of the large amount of traffic associated with middle school drop-off and pick-up there will be two lanes for both inbound and outbound traffic.

### NEW SCHOOL BUS PLAZA

In order to prevent the comingling of buses and cars coming into the middle school site, a bus plaza will be created in the current CCA visitor parking area. This location allows six full-sized buses to approach from the current bus route across the CCA site and drop students approximately 300 yards from the middle school entrance. A wide pedestrian path guides students from the bus plaza to campus entry. Fencing along the path prevents students from "short-cutting" the path by crossing the driveway lanes.

Special Education Busses will not use this plaza, but rather will park in the middle school parking lot to allow the shortest possible distance for special education students to walk to their classrooms.