

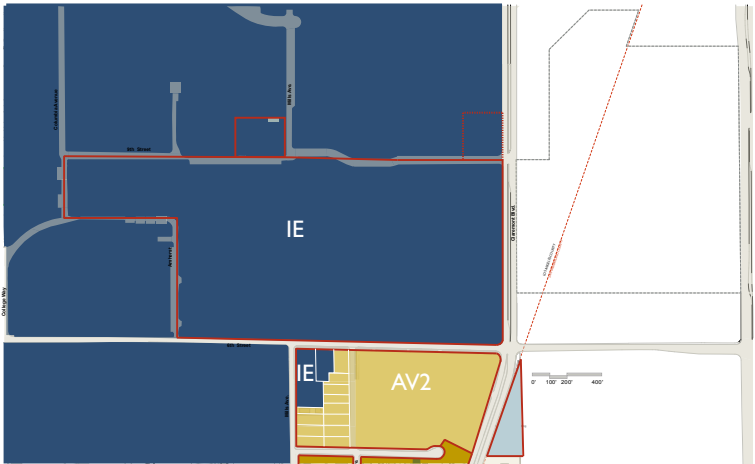
# Campus Area Comparison

The adjacent summary illustrates projected changes to the allocation of building space during the next thirty years. Because of the distant time horizon, allowances have been made for student enrollment to potentially reach 1400 students, which is CMC’s current enrollment limit under the Constitution for The Claremont Colleges. The realization of each proposed project will be subject to programmatic needs and economic considerations. The existing campus zoning and General Plan designation will be altered to provide consistent zoning under the entirety of the proposed Parking Structure and Administrative Space.

	Existing	Proposed
Lot Coverage		
Primary Campus *	12%	15%
East Campus Sports Complex		1.7%
Total (Primary Campus + E.C.S.C.)		10%
Floor Area Ratio		
Primary Campus *	0.3	0.5
East Campus Sports Complex		0.02
Total (Primary Campus + E.C.S.C.)		0.3

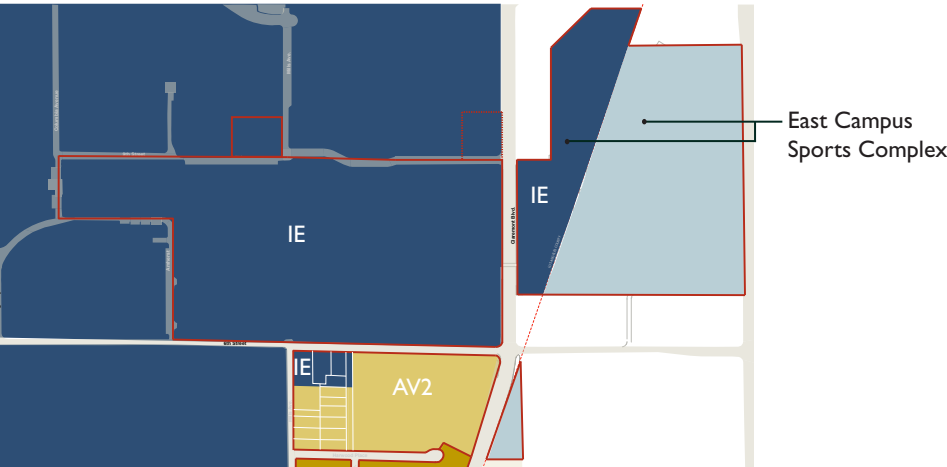
\* Includes CMC Primary Campus and AV2 Zones only

## Existing Campus Zoning Map



IE - institutional educational AV2 - arbol verde 2  
AV1 - arbol verde 1 CMC campus property city of upland

## Proposed Campus Zoning Map



IE - institutional educational AV2 - arbol verde 2  
AV1 - arbol verde 1 CMC campus property city of upland

	Proposed (GSF)	Removed (GSF)	Net Increase (GSF)
Academic / Administrative / Support			
Academic 1	60,000		
Academic 2	60,000		
Remove Bauer North		- 31,205	
Remove Bauer South		- 37,170	
Mills Offices		- 2,899	
Academic 3	75,000		
Alumni - Admission	34,000		
Seaman Hall Renovation / Replacement	30,000	- 6,182	
Subtotal	259,000	- 77,456	181,544

Student Life Facilities			
Campus Center	140,000		
Remove Emmet Student Union		- 7,472	
Remove McKenna Auditorium		- 10,059	
Remove International Place		- 1,097	
Remove Heggblade Center		- 8,773	
Remove Collins Dining Hall		- 20,507	
Remove Story House		- 3,580	
Rec Pool & Social Pavillion	8,000		
Athenaeum Addition	10,000		
Subtotal	158,000	- 51,488	106,512

Residence Halls			
Existing Student Apartments		- 41,941	
Proposed Student Apartments	140,000		
Residence Hall Quad	110,000		
Remove Remove Philips Hall		- 13,286	
Subtotal	250,000	- 55,227	194,773

Athletic Facilities			
Remove Ducey Gymnasium		- 41,941	
Fitness & Athletics Center	132,000		
Removal Existing Structures for Soccer Field		- 25,000	
Field House (East Campus Sports Complex)	30,000		
Subtotal	162,000	- 66,941	95,059

Parking Structure			
Parking Structure and Administrative Space	150,000		
Removal Existing Structures		- 5,000	
Subtotal	150,000	- 5,000	145,000

M.P. Increase in Area Totals	979,000	- 256,112	722,888
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CMC Existing Campus Building Area **	718,423
S.F. per Student (1150 enrollment in Claremont)	625

CMC Proposed Master Plan Campus Building Area	1,441,311
S.F. per Student (1400 enrollment in Claremont)	1,030

Pomona College 2003 Master Plan Campus Area (For Comparison)	1,979,897
S.F. per Student (1450 enrollment in Claremont)	1,365

\*\* Including Kravis Center - 53,587gsf of Keck Science Center allocated to Pitzer and Scripps Colleges.



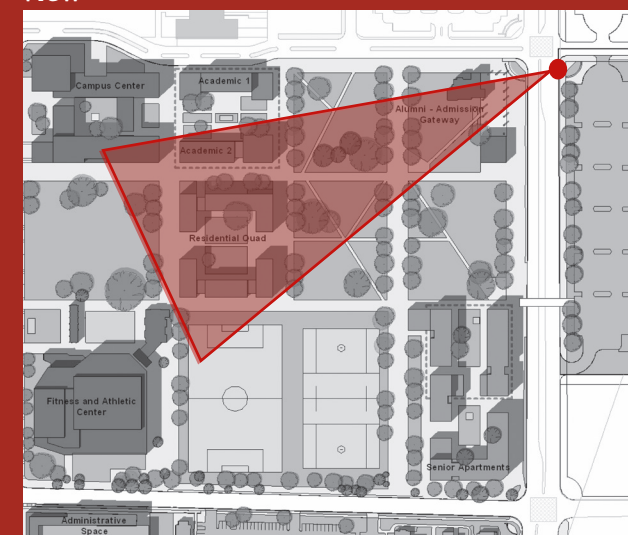
## Vision for CMC

- Illustrates how the Master Plan accommodates new programmatic needs of the campus, while preserving the intimate scale of the existing campus and strengthening the character defining elements.
- Provides for needed academic, campus life, athletic, and residential growth.
- Strengthens east/west and north/south campus axes.
- Enhances open space network.
- Improves campus edge definition.
- Clarifies entries and gateways.
- Improves campus circulation and pathways.
- Unifies and harmonizes entire campus.



View Looking East along the North Mall

### View



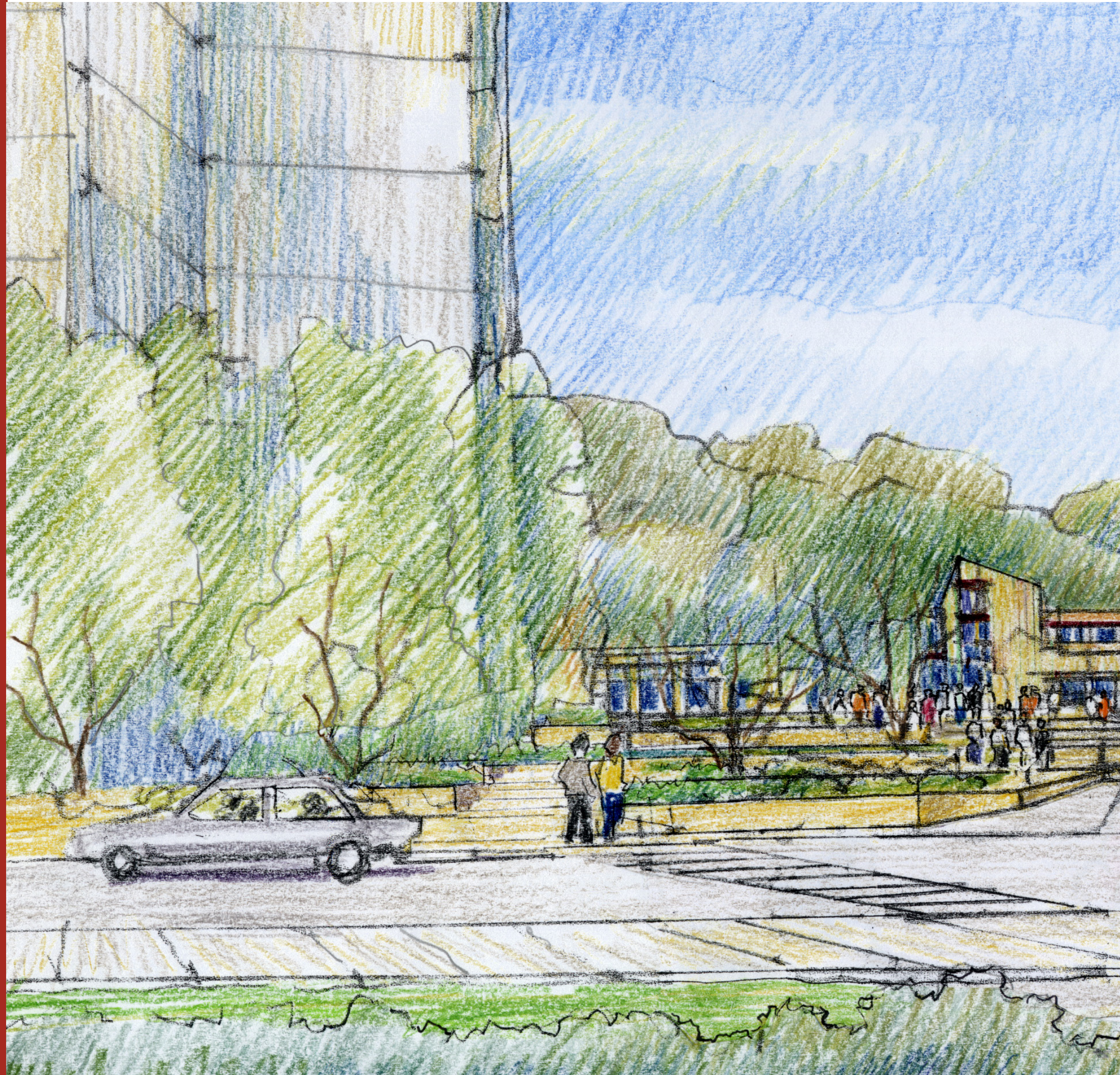
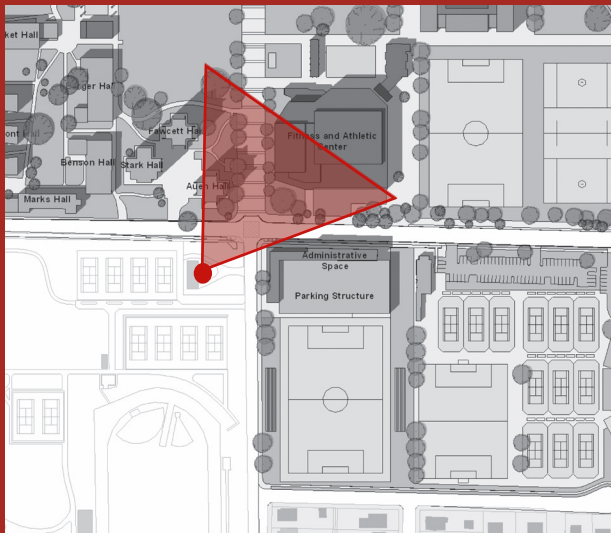
## Mills Avenue & Sixth Street Gateway

- The intersection of Mills Avenue and Sixth Street will be an important gateway to CMC.
- View shows three proposed projects: Fitness and Athletics Center (middle); Campus Center (far left); and Parking Structure with Administrative Complex at street level (far right).
- Fitness and Athletics Center along with landscape will define the campus perimeter along Sixth Street. The building form steps down as it engages Sixth Street.
- Sixth Street gateway features landscape and signage linking to the enhanced tree-lined pedestrian-way (aligned with Mills Avenue) leading to the Campus Center.



View Looking North - East from the intersection of Mills Avenue and Sixth Street

### View





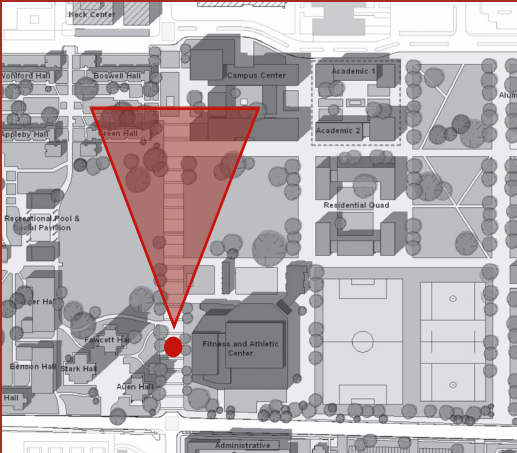
# Creating a Heart at CMC

- The Campus Center will be located at the key intersection of the North Mall and Mills Avenue.
- The Campus Center will be modulated to be similar in scale to the adjacent buildings.
- A tower element may be located at the corner of the Campus Center providing commanding views of the surrounding campus and mountains.
- Parents Field will be expanded to the east to create a stronger campus “heart.”



View Looking North along Mills Avenue

View





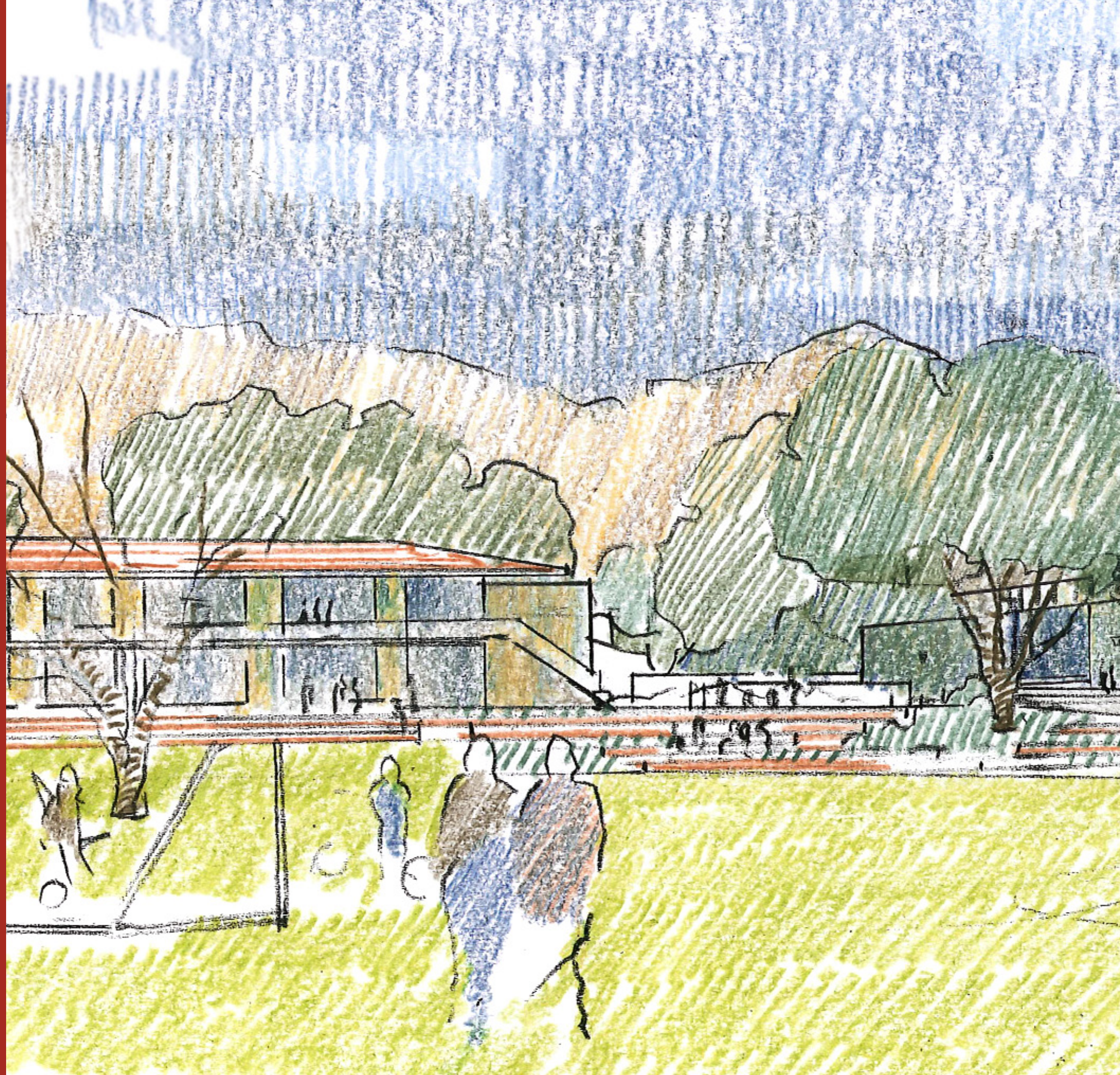
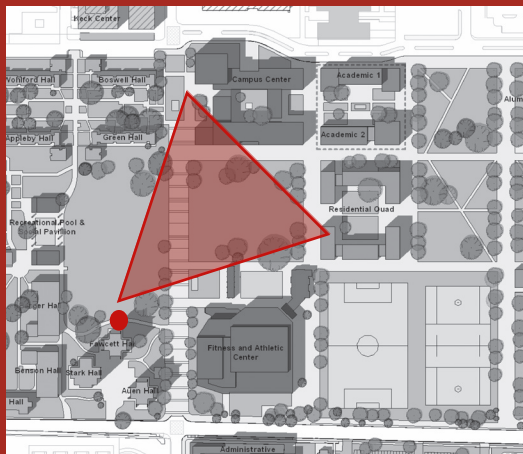
## Weaving of the Campus Plaid

- All primary campus components, including academic, service, athletic, and residential uses have an address on the focal open space.
- The Campus Center will be located at the heart of campus.
- The strength and continuity of the North Mall will be maintained.
- Two and three story buildings will be compatible with existing campus buildings and the surrounding campuses and communities.
- An expanded Parents Field will allow more buildings to be at the heart of the campus.
- Landmark trees will be preserved wherever possible.



View Looking Northeast from Parents Field

### View



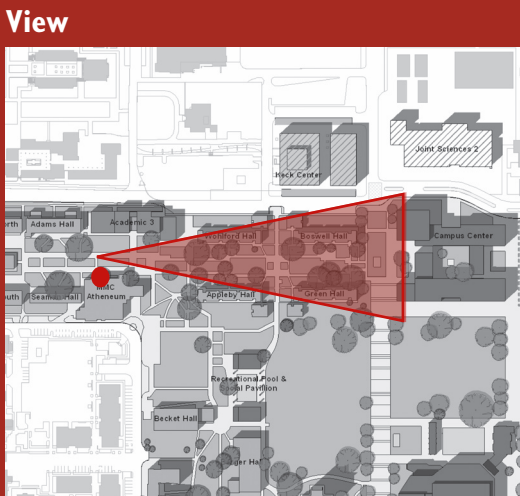


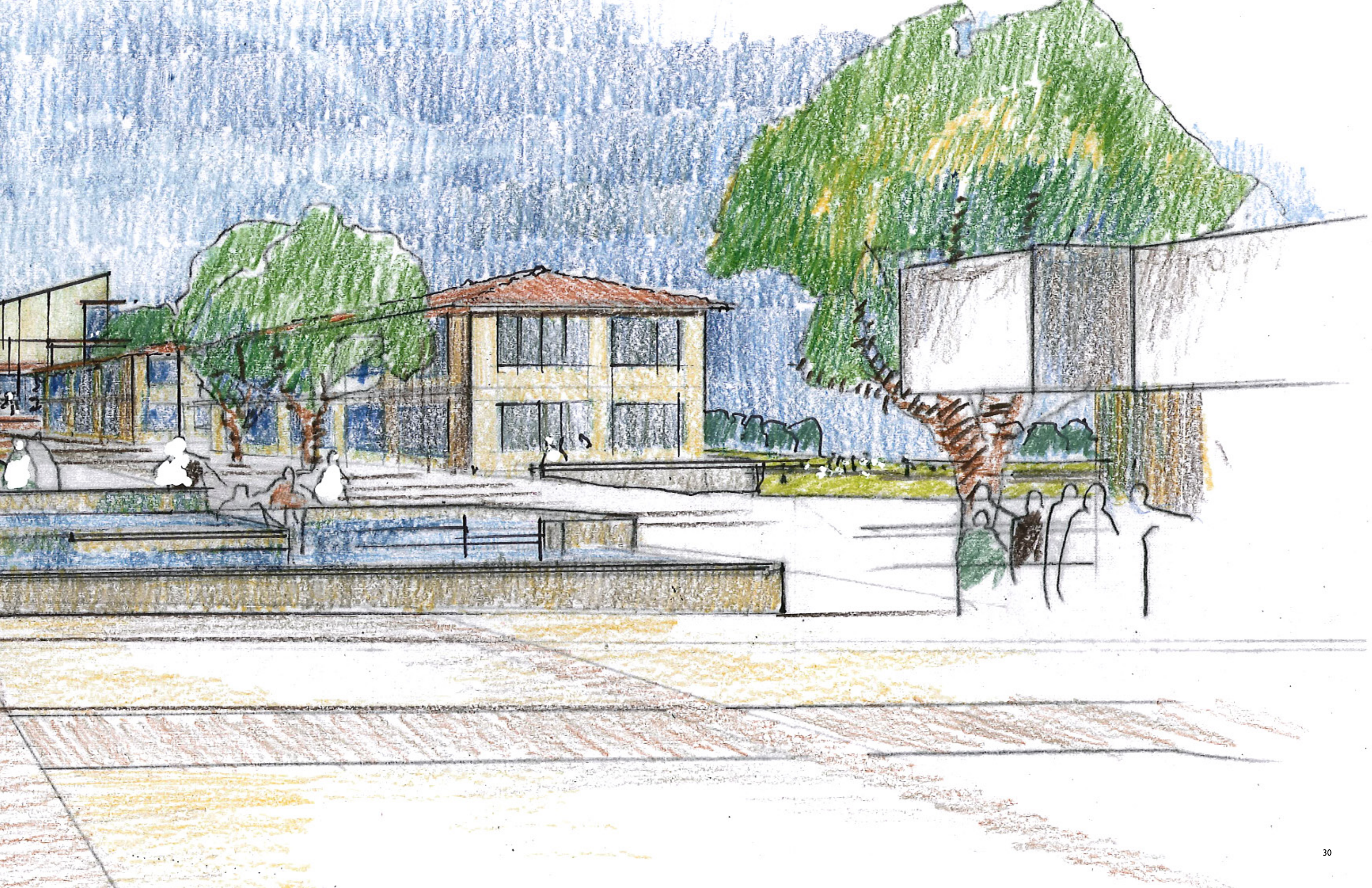
## Building on the Tradition of the North Mall

- Academic, cultural, administrative, dining, and student residential uses have and will coexist on the North Mall.
- Proposed three-story academic building, at left, will maintain compatibility with existing buildings along the North Mall.
- Pedestrian passage in the center of the proposed academic building is aligned with Amherst Avenue to provide a direct connection with Scripps College.
- Buildings, landscape, and fountains shape the North Mall as a primary gathering and interaction space on campus.
- Proposed Campus Center is visible in the background.



### View Looking East along the North Mall





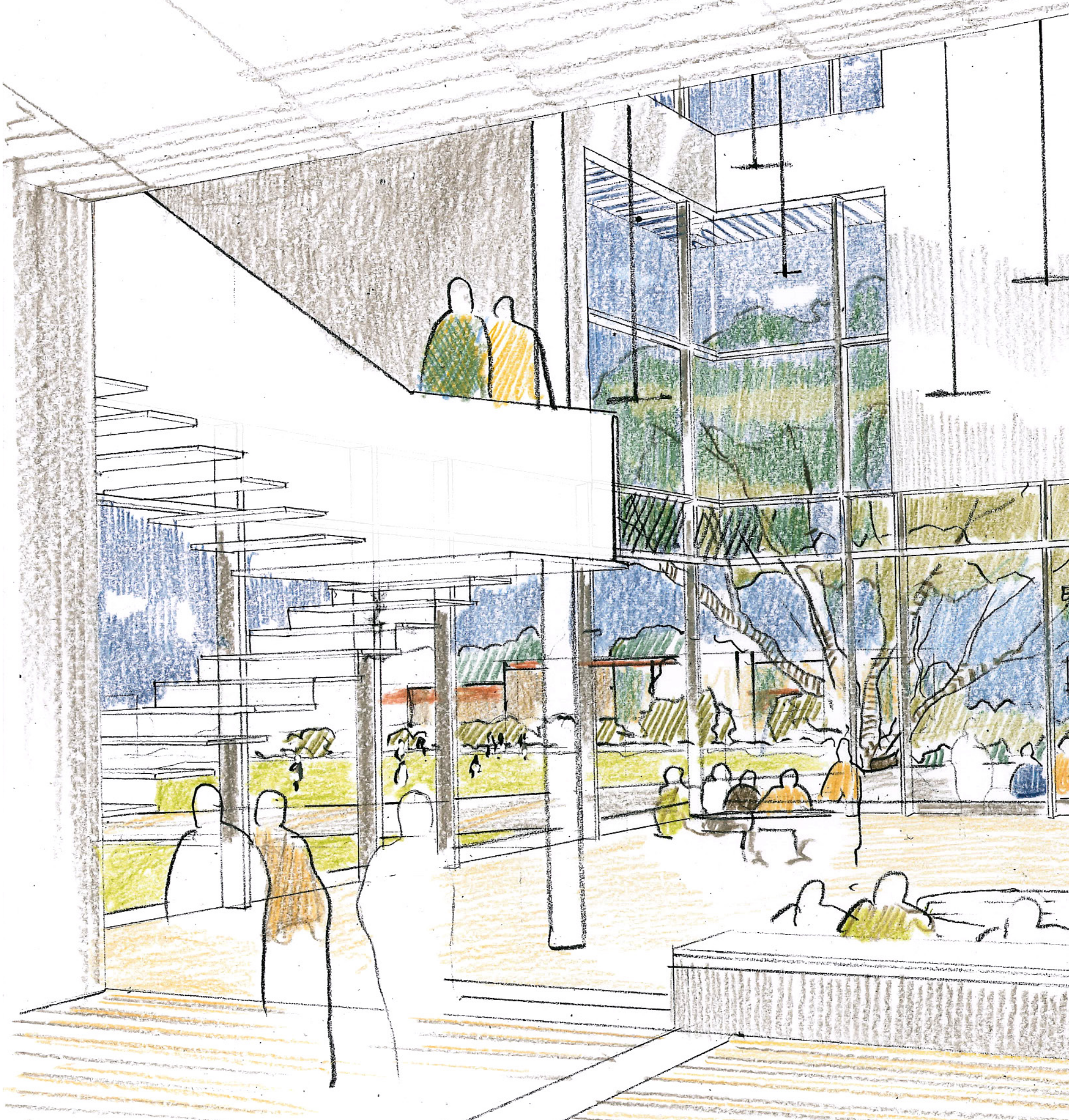
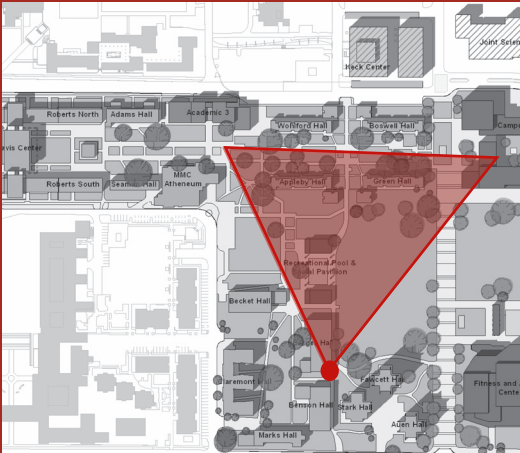
# Crossroads of the CMC Campus

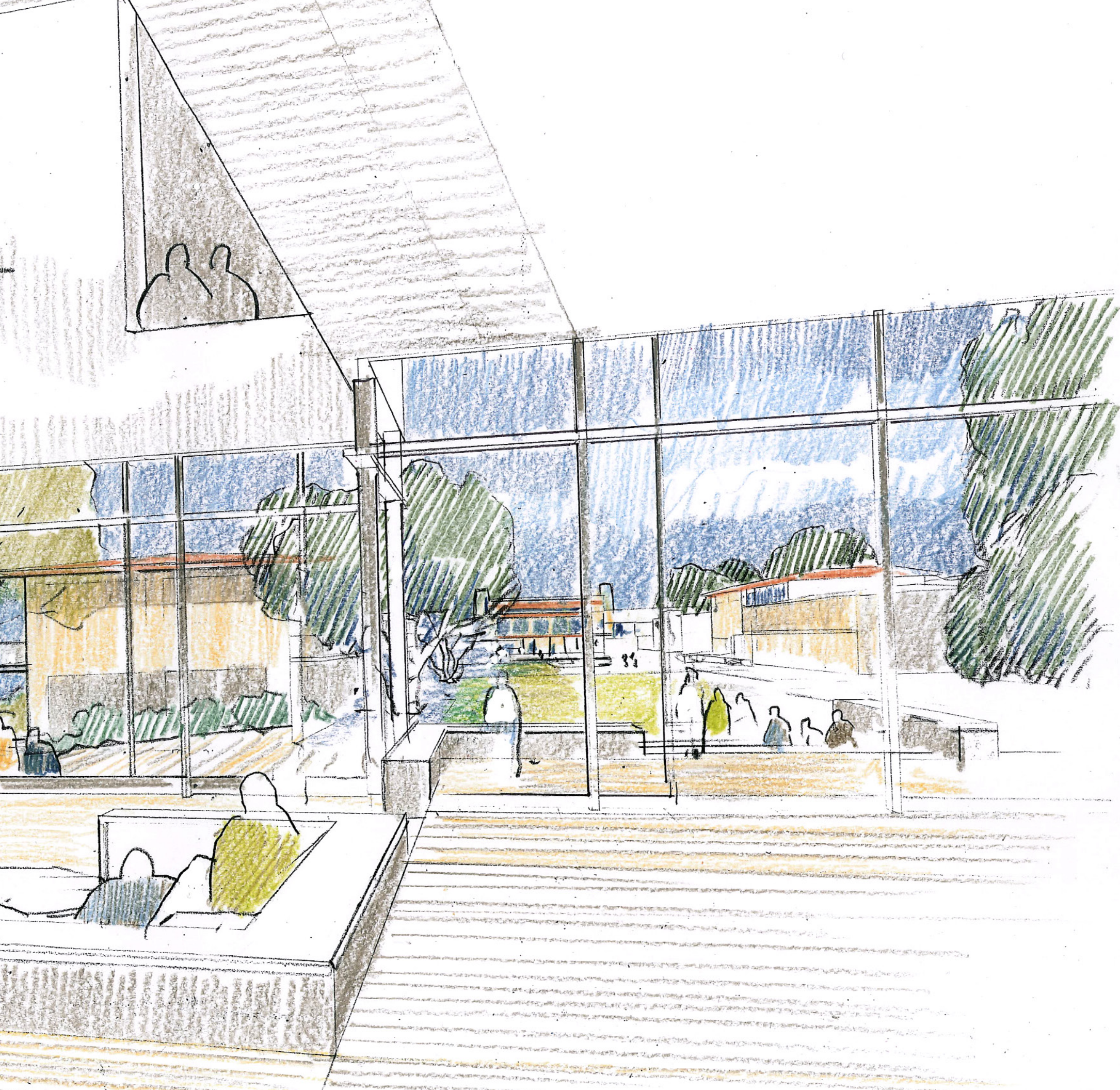
- Campus Center is located at the heart of campus overlooking an expanded Parents Field.
- Inviting social spaces at garden level will enhance interaction between students, faculty, staff, and visitors, while framing and shaping connections to the campus, landscape, and open space.
- Opportunities for special spaces on multiple levels within the building.
- Preservation and celebration of landmark trees.
- Completed Kravis Center is shown at right.



View West from the proposed Campus Center

## View





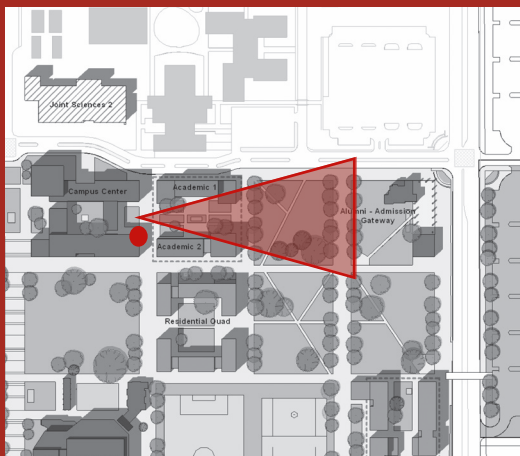
## Extending the North Mall

- Maintains and strengthens the continuity of the North Mall east to Claremont Boulevard.
- Proposed three-story academic buildings will maintain similar qualities of the existing buildings on the North Mall.
- Moderately scaled buildings define active courtyards and pathways.
- In the distance, beyond new gardens, the North Mall ends with low-scaled Alumni and Admission buildings proposed to create a new Claremont Boulevard gateway to the campus.



View Looking east along the North Mall

### View





# Sustainability on Campus

## Current Sustainable Design Initiatives

Claremont McKenna College has already taken significant steps to reduce its environmental impact. Resource management is a vital component of CMC’s sustainability efforts. Currently, CMC tracks many aspects of its resource usage.

CMC is a member of the Society of College & University Planners, the Association for the Advancement of Sustainability in Higher Education (AASHE), the Pacific Coast Association of Physical Plant Administrators and the Association of Facilities Officers in Higher Education. Membership and participation in these organizations reflects the College’s intent to partner with leading organizations and model best practices as CMC continues its stewardship of its campus and resources.

In June 2007, CMC committed to a climate change initiative named the American College & University Presidents Climate Commitment, under which CMC must meet specific climate reducing targets.

Presidents signing the American College & University Presidents Climate Commitment are pledging to eliminate their campus’s greenhouse gas emissions over time through:

- Completing an emissions inventory.
- Setting targets and interim milestones for becoming climate neutral.
- Taking immediate steps to reduce greenhouse gas emissions by choosing from a list of short-term actions.
- Integrating sustainability into the curriculum and making it part of the educational experience.
- Making the action plan, inventory, and progress reports publicly available.

## LEED Policy

CMC is committed to pursuing environmental best practices when designing, constructing or undertaking the significant renovation of buildings on its campus. At a minimum, CMC will design, build, and pursue certification of all new buildings at a LEED “Silver” level or higher. Significant building renovation projects will also apply LEED standards throughout the course of the project. Additionally, the College will apply principles of sustainability and related best practices in its daily maintenance and operation.

## Energy & Water Conservation

Steps have been taken to monitor and understand energy usage on campus. Energy retrofit studies have been conducted and lighting retrofits implemented. The College is also implementing an advanced irrigation control system to reduce irrigation water consumption.

## Materials & Resources

Claremont McKenna College has implemented green purchasing policies and uses green seal certified cleaning products, recycled hand towels, and Energy Star appliances. An electronics recycling program has been implemented along with recycling green waste generated on campus through composting. Solar powered trash compactors have been utilized to reduce trip generation associated with trash collection.



Claremont Hall, LEED Silver



Kravis Center, LEED Silver/Gold Target

## Proposed Sustainable Initiatives for the Master Plan

### Key Considerations

The Master Plan carefully considers site sustainability, energy and water resource management. The Master Plan provides for strategies to be implemented over time allowing for technological advances to be incorporated. Key considerations include:

#### Stormwater:

Stormwater treatment serves as an important element in the sustainability design. Due to the campus' natural soil conditions, there are several opportunities for stormwater treatment and infiltration within the campus. Given the available open space of the campus, implementation of sustainable landscape features such as linear bioswale systems can be integrated along with the landscape design. This element of "daylighting infrastructure" creates a strong awareness of water and location, which will lend the campus a sustainable and natural environment.

#### Landscape:

Landscape is an important aspect of campus environment. Opportunities exist to utilize landscape elements to shade buildings on the south, east and west, and tree selection and location will seek to maximize such opportunities.

#### Climate Responsive Design:

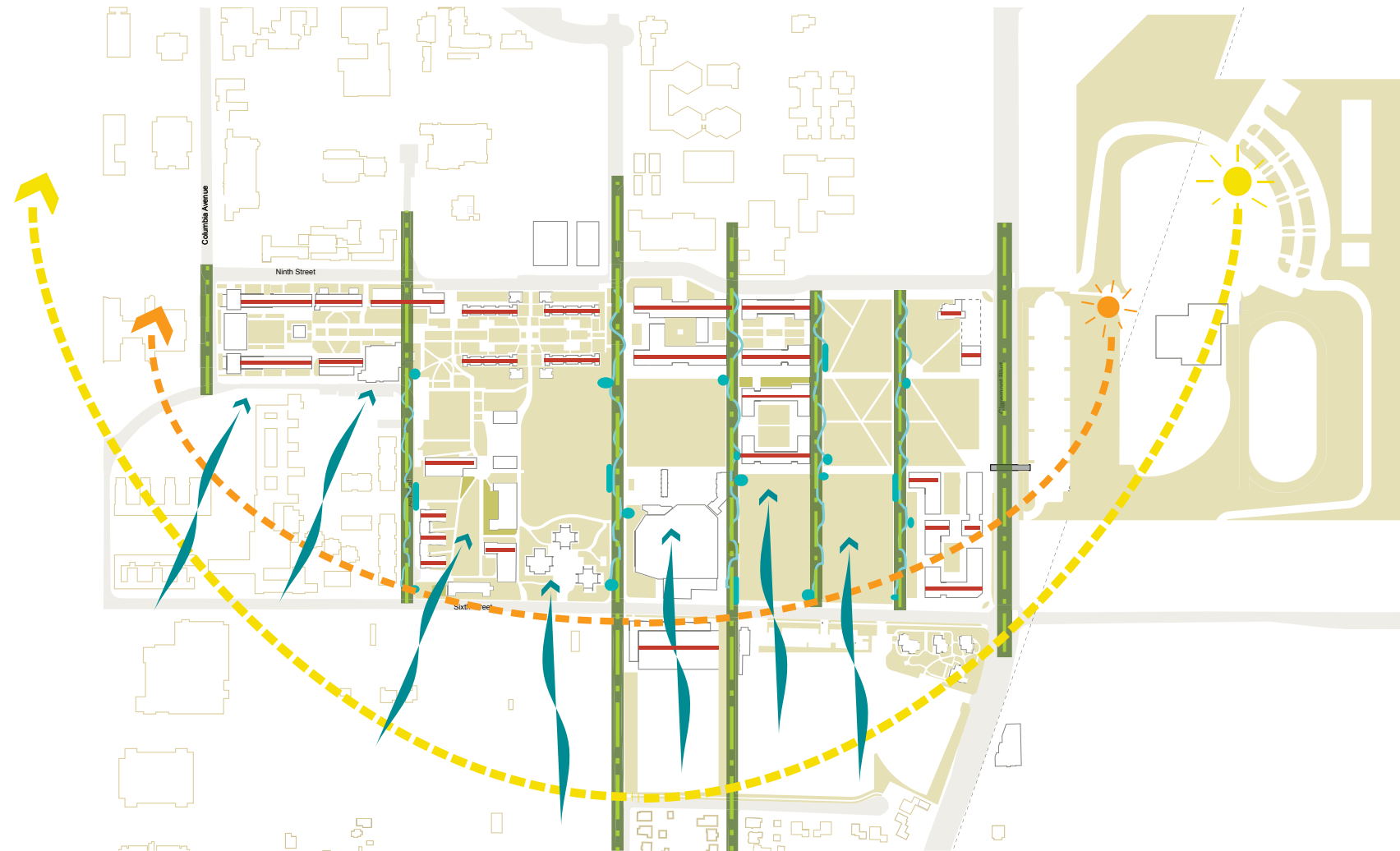
Climate responsive design seeks to respond to the sun, wind, and climate. Orientation of buildings has been considered to minimize east/west exposure where possible, reducing solar exposure. During most of the academic year, the moderate climate provides excellent opportunities for natural ventilation through mixed-mode systems.

#### Water:

Significant opportunities for water conservation and water reuse exist within the campus. Water reduction target goals will be considered and implemented as practical. Opportunities for grey water recycling to provide recycled water for cooling towers, irrigation, and toilet flushing have been identified and may be pursued on a project-by-project basis, if reasonably economical.

#### Energy & Carbon Emissions

A strategy has been identified to utilize radiant cooling systems and mixed-mode ventilation within certain facility types to minimize energy consumption. Certain new or existing facilities may be tied into a new central cooling plant to take advantage of diversification of load and high efficiency chillers.



**Site Analysis: Sun path, prevailing winds, optimum orientation, and green corridors**

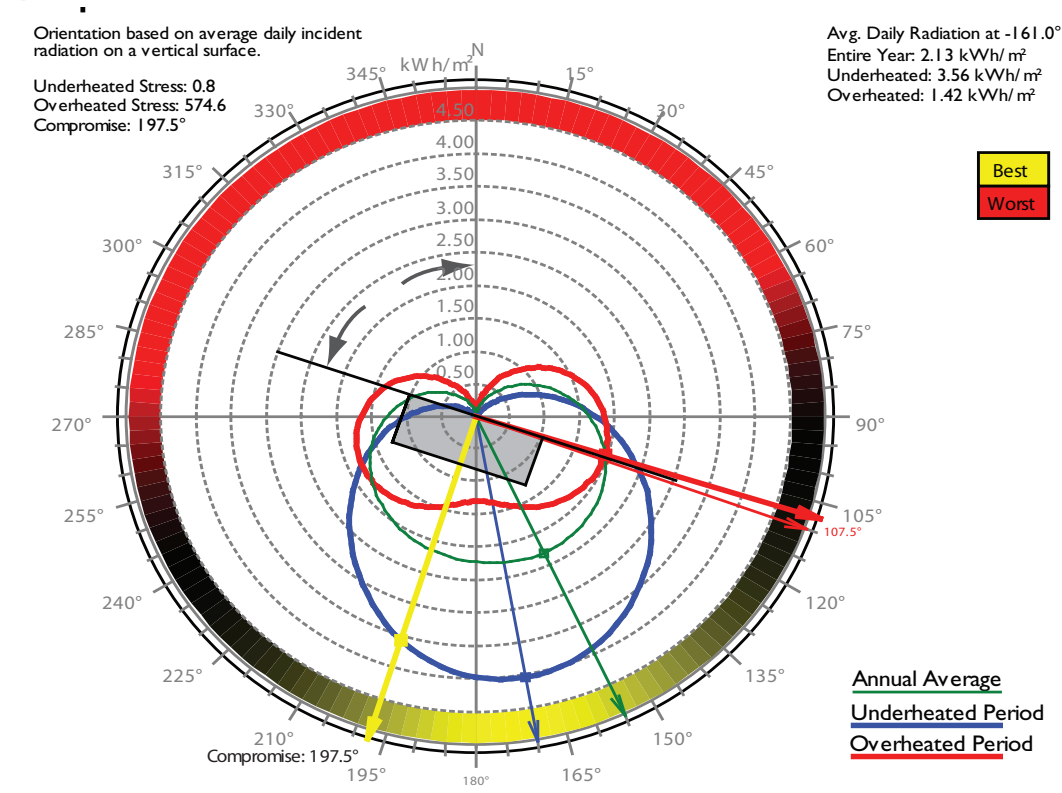
# Site Analysis

## Climate Analysis

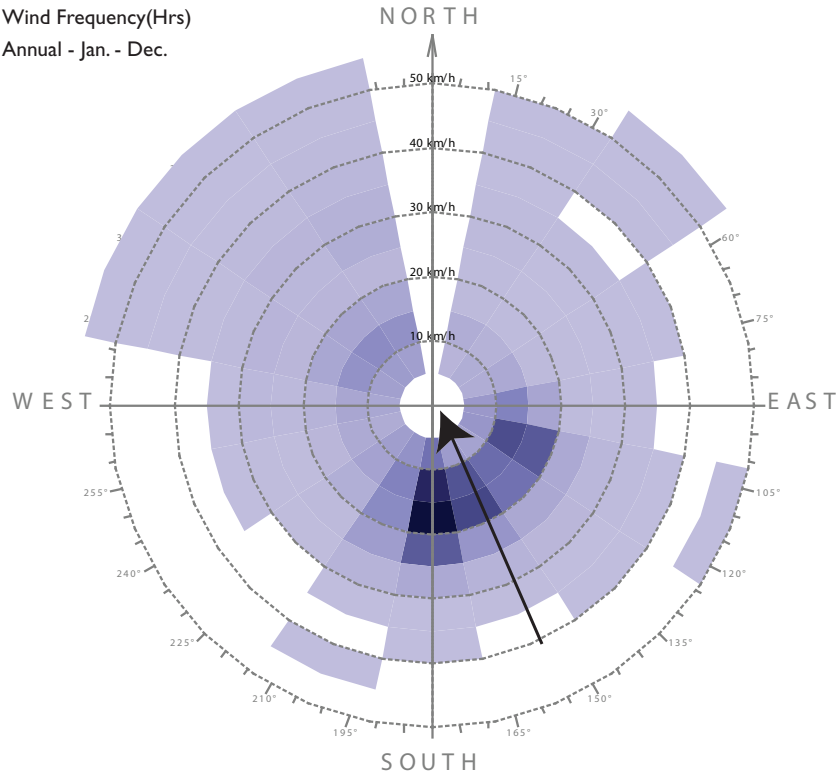
Claremont McKenna College is located at 34° latitude, where the sun is high during summer months and shade on the southern and western facades of buildings is desirable. Lower winter sun can provide some benefit in terms of solar gains, but spring and autumn sun angles can cause particular challenges for shading. The optimum building orientation is 18° from an east/west alignment, facing slightly southwest, and providing reduced solar exposure from afternoon sun. Solar resource for the region is excellent, making solar photovoltaic and solar thermal potentially feasible.

The climate in Claremont offers comfortable conditions for the majority of the year, with good opportunity for natural ventilation via mixed-mode systems. Wind speeds are low, but the prevailing southerly breezes could be used to enhance comfort in external areas. Diurnal swings are significant year round offering an opportunity to utilize natural ventilation. An east/west building alignment could maximize the opportunity for natural ventilation.

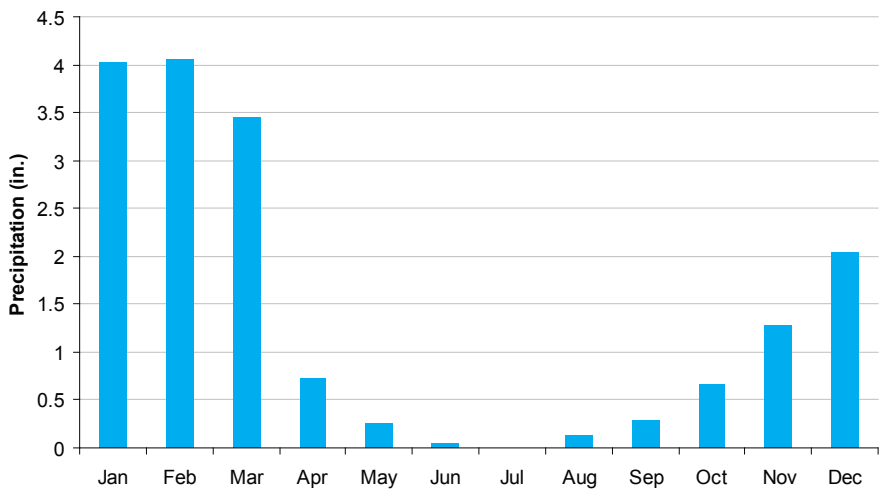
## Optimum Orientation



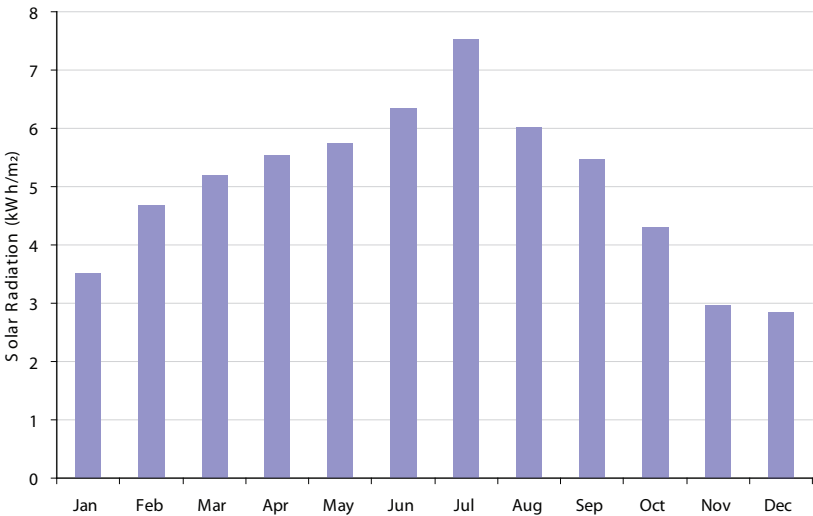
## Prevailing Winds



## Monthly Precipitation



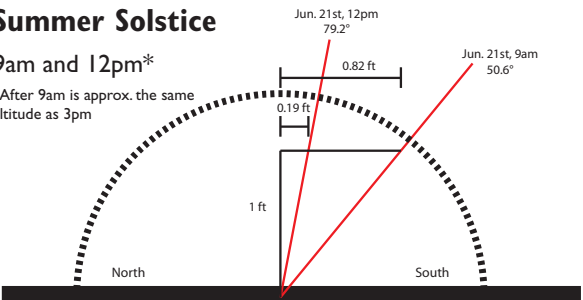
## Monthly Solar Radiation



## Solar Altitude: Summer Solstice

9am and 12pm\*

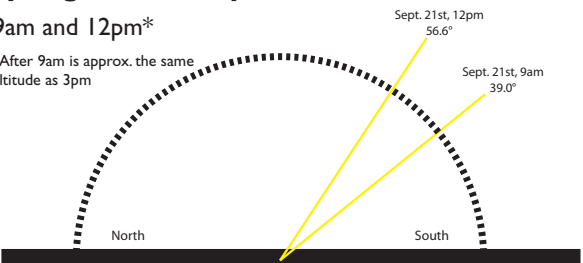
\*After 9am is approx. the same altitude as 3pm



## Solar Altitude: Spring/Autumn Equinox

9am and 12pm\*

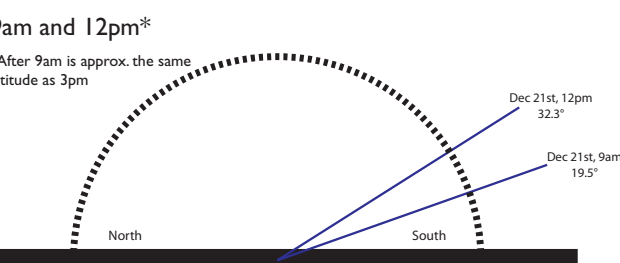
\*After 9am is approx. the same altitude as 3pm



## Solar Altitude: Winter Solstice

9am and 12pm\*

\*After 9am is approx. the same altitude as 3pm



## Passive and Active Design Strategies

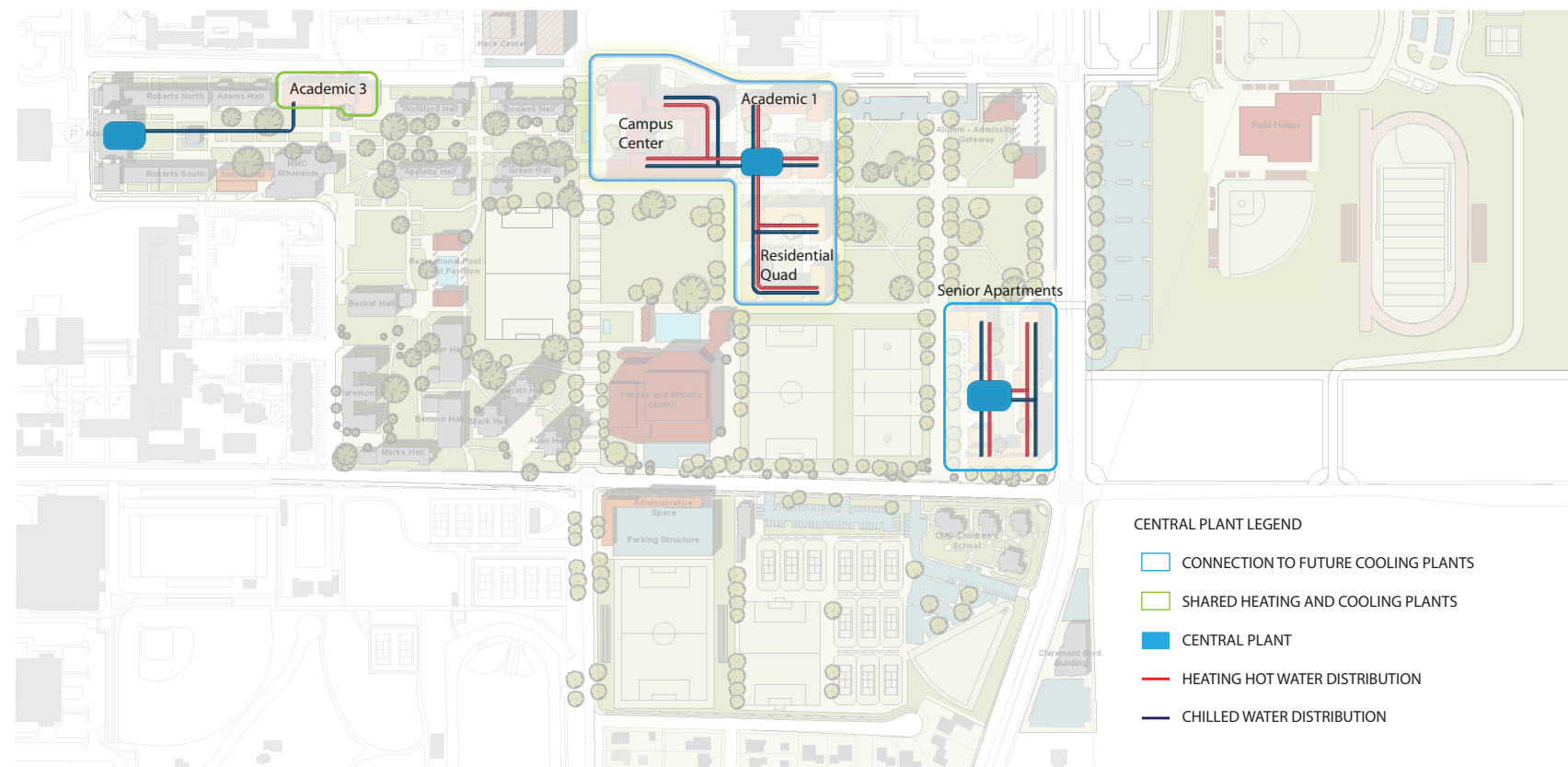
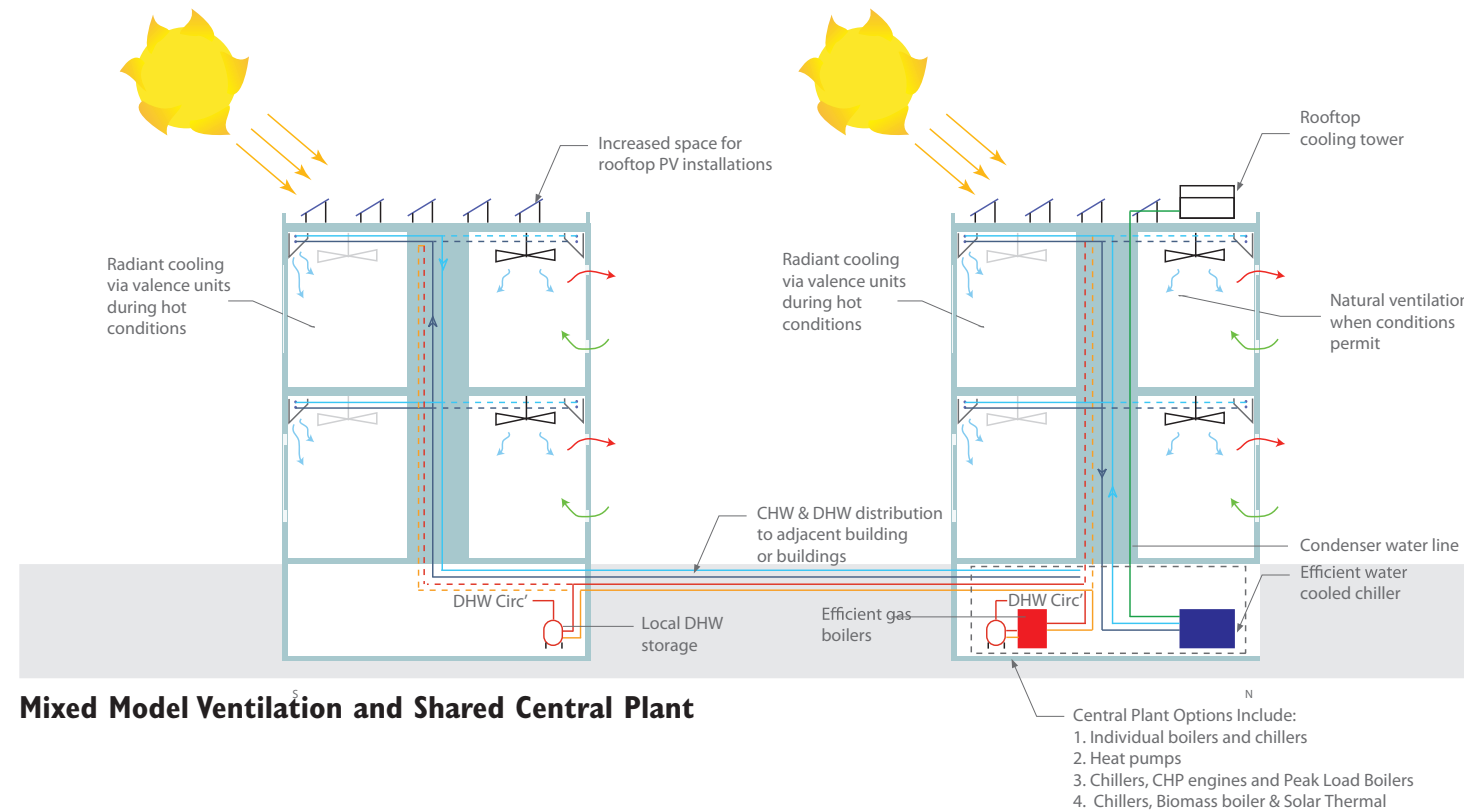
The Master Plan focuses on minimizing the impact on the local and global environment through climate responsive design. The aim is to reduce energy consumption through passive and active design strategies, and consider the application of renewable technologies.

### Passive Design Strategies

Passive design strategies seek to minimize energy consumption for heating, ventilation, and lighting systems by reducing demand through appropriate orientation, massing, and strategies such as night cooling, natural ventilation, and day lighting. Given the local climate, mixed-mode systems utilizing natural ventilation may provide significant opportunities for energy reduction and will be considered on a building-by-building basis.

### Active Design Strategies

Active design strategies work to reduce the energy consumed by mechanical systems through strategies such as right-sizing, efficient system design, and efficient equipment selection. Shared heating and cooling plant and infrastructure can provide the opportunity to integrate a wider range of system options, and will be considered on a building-by-building basis.



Central Heating and Cooling Plant Opportunities

# Renewable Energy Opportunities

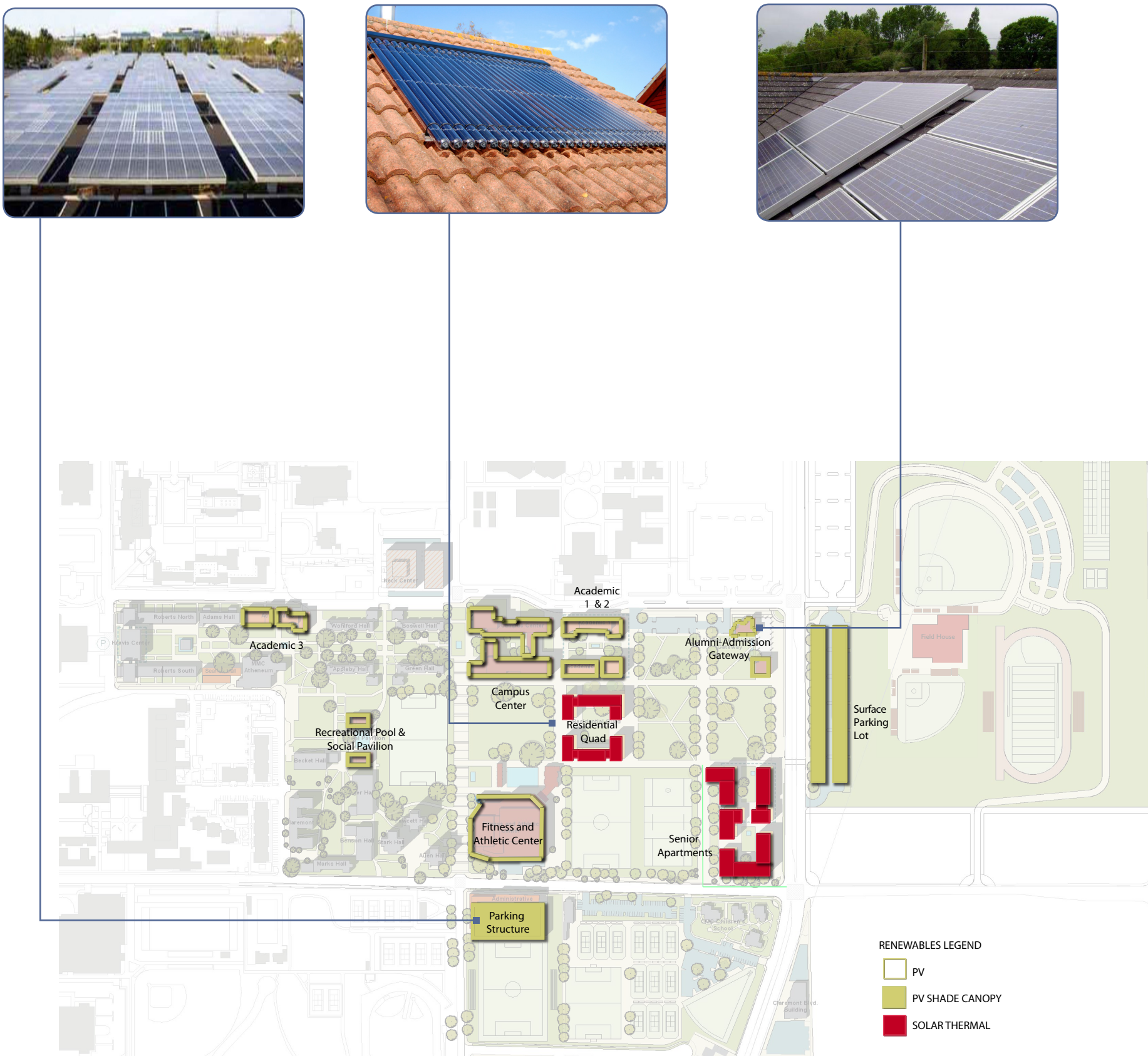
A variety of renewable energy technologies have been investigated for usage on the campus. Studies have shown solar energy to be the most abundant on-site energy resource, creating opportunities for integration of solar photovoltaic and solar thermal technologies, particularly from spring through autumn. Average wind speeds on-site are too low for viable power generation from wind turbines and there are no other nearby renewable energy resources, such as hot well geothermal, biomass, or low-impact hydro. Possible solar thermal and photovoltaic applications are described below.

## Solar Thermal Domestic Hot Water

Solar thermal collectors utilize the sun’s energy to directly or indirectly heat water. The existing and proposed residential dormitories have been identified as having high domestic hot water loads making them potentially suitable for solar thermal technologies. Higher angle collectors would be most suitable to maximize winter and mid season hot water generation due to lower occupancy during summer months. CMC will investigate the practicality of utilizing solar thermal collectors for proposed and existing dormitories on a building-by-building basis.

## Site and Building Integrated Photovoltaic

Photovoltaic panels capture the sun’s energy and directly generate electrical power. The power is then transformed through an inverter from DC to AC for use in buildings. The viability of utilizing photovoltaic technology will be considered on a building-by-building basis. Academic and administrative buildings may be suitable for integration of photovoltaic technology when solar thermal would not be effective. Photovoltaic panels may also be considered as integrated sunshade elements on top of parking structures or surface parking where there is potential for power generation.



Claremont McKenna Renewable Energy Opportunities

# Water Use

## Water Use Reduction Strategy

The campus uses water within buildings for potable and non-potable uses. Dormitory buildings have high water demands for showers and academic buildings have high water demands for cooling towers. Irrigation across the campus also accounts for a large demand. The Master Plan will attempt to minimize potable water demands as outlined below.

## Building Water Efficiency

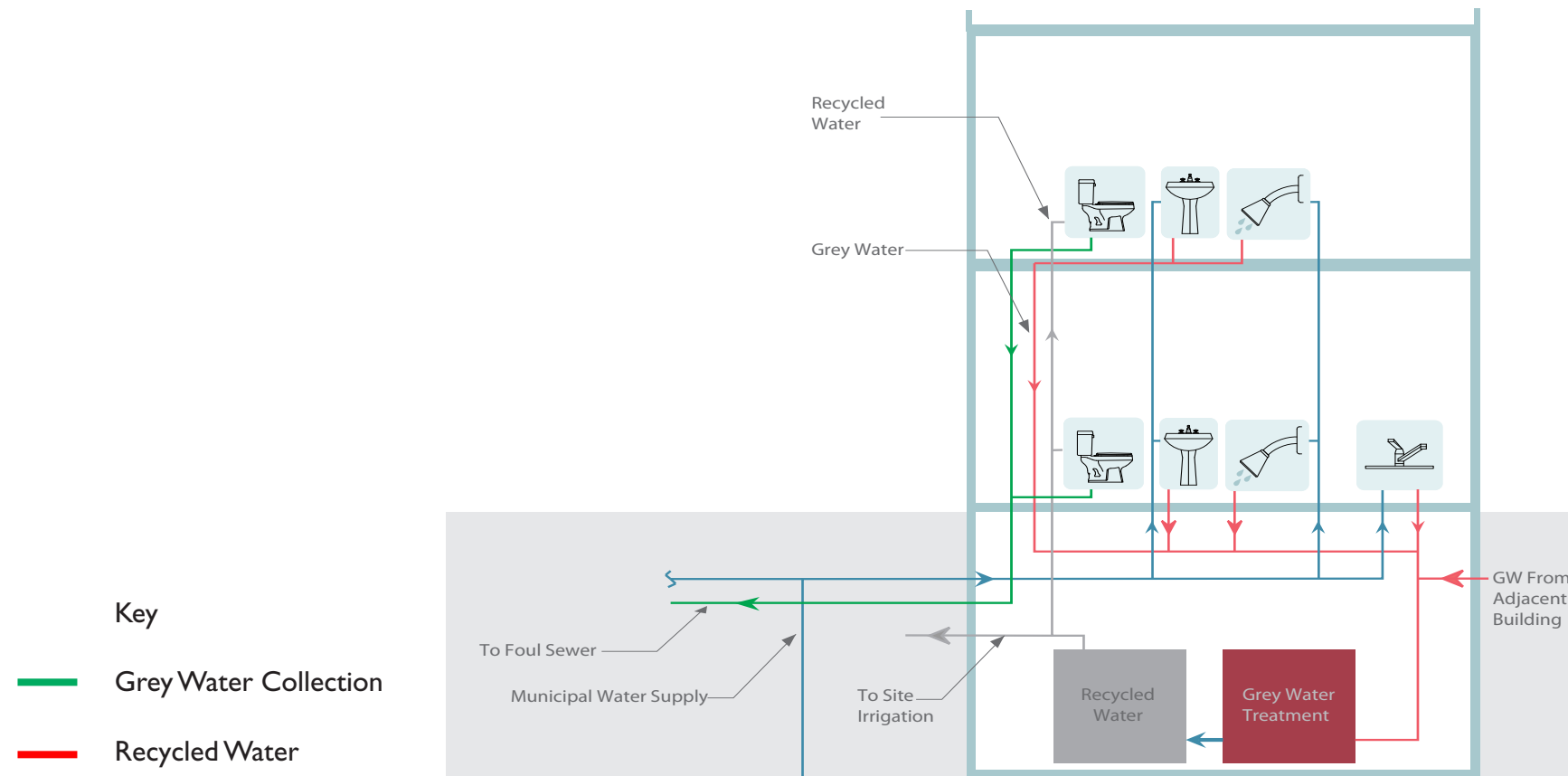
New and existing buildings will minimize water consumption through the use of low-flow fixtures, showers, urinals, and toilets.

## Building Water Recycling

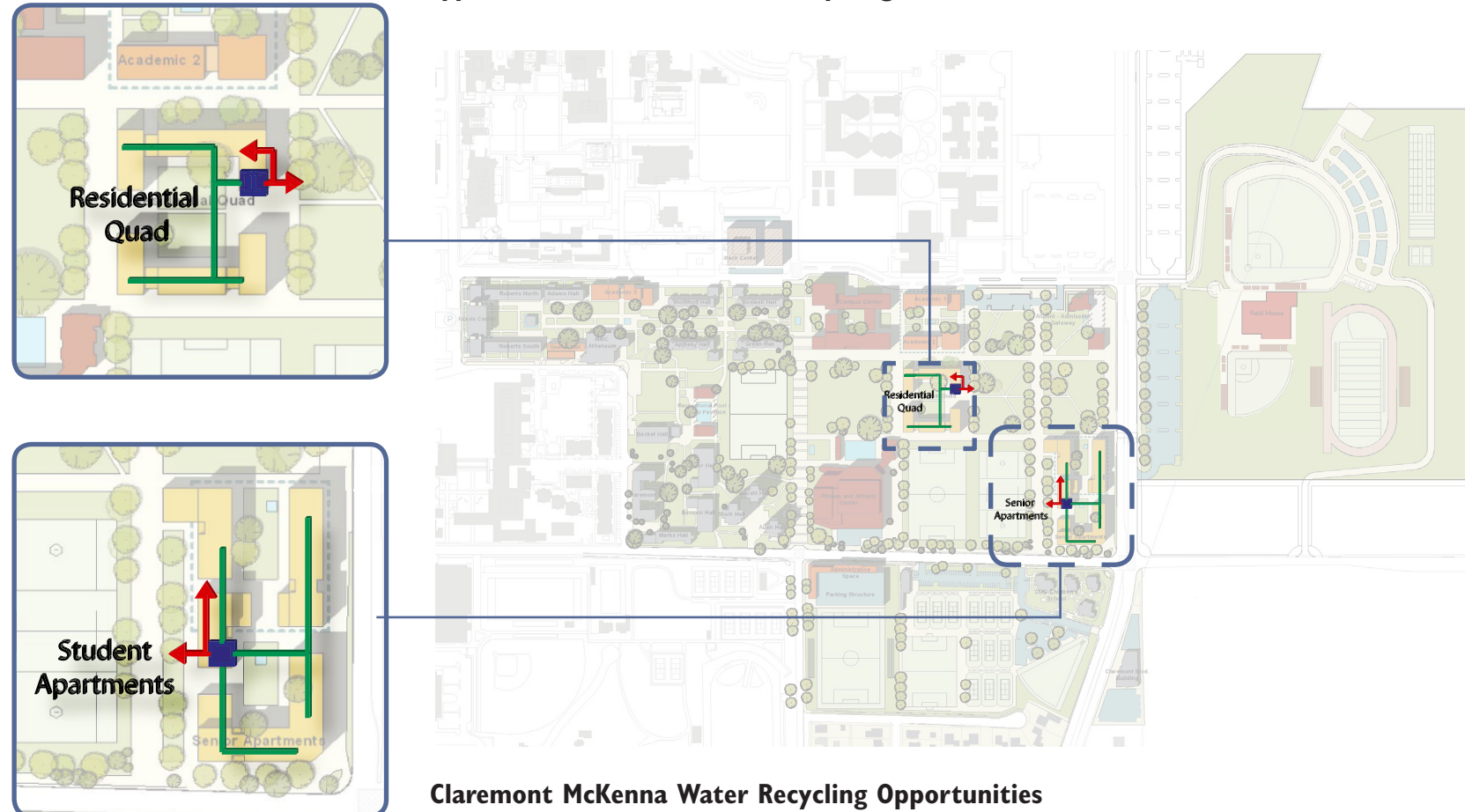
Water treatment and reuse strategies (such as grey water or black water treatment and recycled water use for toilet flushing, irrigation or cooling towers) will be considered for new buildings on a building-by-building basis.

## Landscape Irrigation

Demand for potable water for irrigation should be reduced through the selection of native or drought tolerant species when possible. Irrigation demands may be further reduced through drip irrigation and irrigation management systems. Where grey or black water treatment systems are utilized, the ability to provide local or wider reuse of water for irrigation will be considered. The City of Upland has indicated that it would like to provide grey water to be utilized in irrigating the East Campus Sports Complex. If Upland provides grey water to the East Campus Sports Complex, CMC will reasonably endeavor to utilize such water for irrigation to the extent that CUC is allowed to do so by all water suppliers and regulatory bodies.



Typical Water Treatment and Recycling Scheme



Claremont McKenna Water Recycling Opportunities

# Existing Tree Inventory

## Preservation of Landmark Trees

One of the unique qualities of the CMC campus is its mature trees, including specimens of California live oak, stone pine, and sycamore trees.

These trees are significant because they contribute to the beauty of the campus, the quality of the experience, and identity of the place.

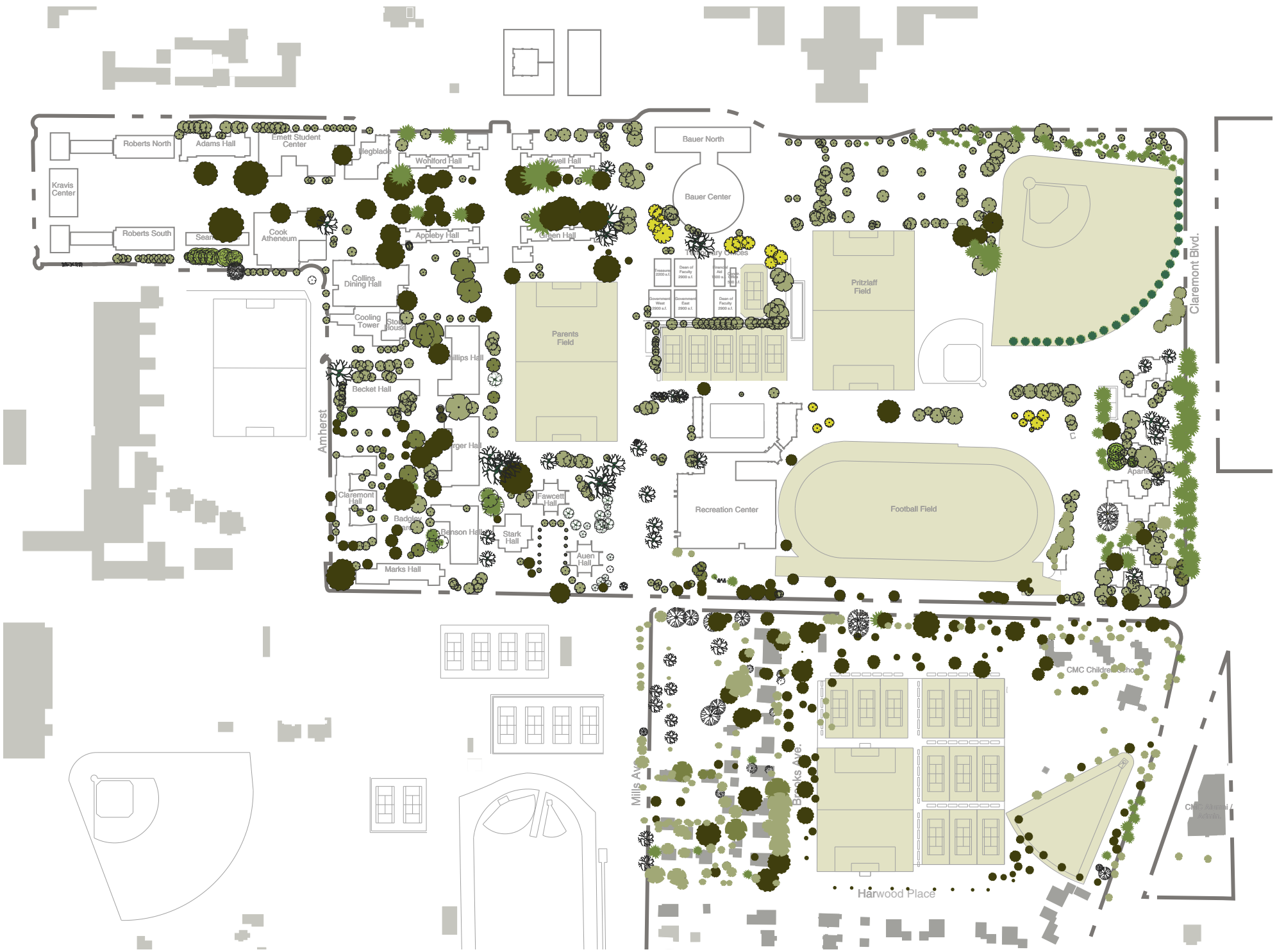
The campus’ trees live in concert with the trees of the surrounding Claremont neighborhoods, which have a rich heritage of streets lined with abundant California live oak, camphor, pepper, and jacaranda.

CMC’s arborist has inventoried and assessed the trees on campus and has a tree maintenance program involving annual assessments and proactive pruning to maintain tree health, shape, and prevent pest infestation and wind or other damage.

CMC is committed to preserving and maintaining landmark tree specimens where appropriate and integrating existing trees into a new landscape Master Plan vision that links campus and community.



View East along North Mall



Existing Trees at CMC

- oak
- pine
- redwood
- olive
- sycamore
- eucalyptus
- pepper
- camphor
- italian cypress
- miscellaneous



## Mobility & Circulation

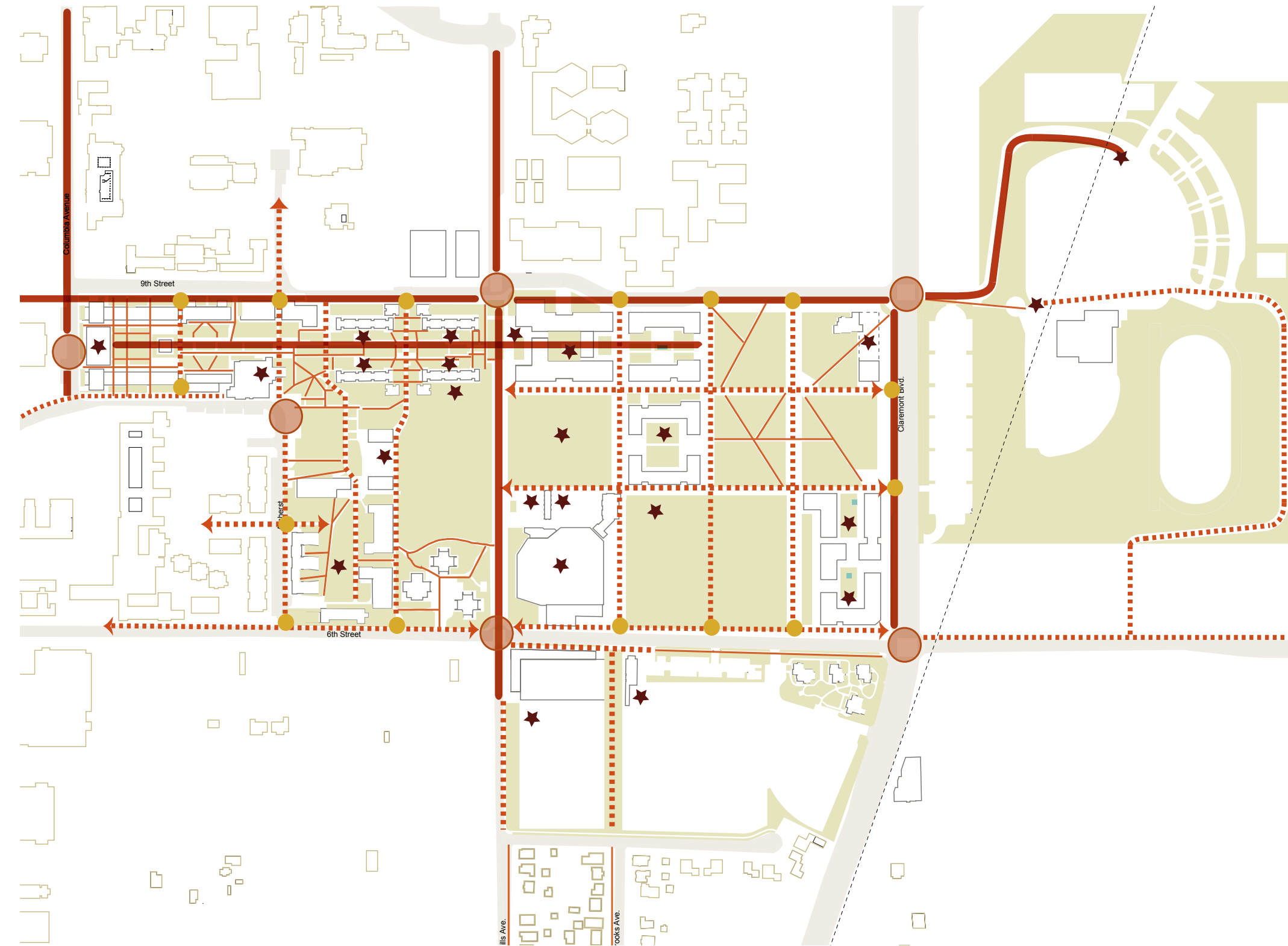
### Pedestrian Mobility

Approximately 95% of students live on campus. As a result, the primary means of movement on campus and between other college campuses is walking. Bicycles, skate boards, and scooters are also used and shall be considered “pedestrian” for the purpose of this discussion.

The low-density campus combined with a relatively small student population fosters an uncrowded pedestrian environment. The Claremont Village, a popular destination with all the offerings of a small town, is a pleasant 15-minute walk through Pomona College’s lush landscape and Claremont’s beautiful tree-lined streets.

The garden setting combined with the temperate climate makes the campus an ideal pedestrian-friendly environment. Primary, secondary, and tertiary pedestrian pathways have been identified on the adjacent plan and within the cross-sectional options that follow. These pathways have a range of dimensional requirements depending upon the amount of pedestrian traffic. In some cases, the minimum dimension of the pathway will be determined by required emergency vehicle access. Additionally, the use and routing of environmentally appropriate electric carts and service vehicles will be factored in pathway dimensions.

The illustrated sections suggest a range of dimensions of walkways, landscape areas and required access.



primary pedestrian circulation
  secondary pedestrian circulation
  tertiary pedestrian circulation
  nodes of interest

campus gateway / primary pedestrian entry
  secondary pedestrian entry
  existing context
  open space



# Mobility & Circulation

## Pedestrian Crossings

The proposed East Campus Sports Complex, east of Claremont Boulevard and the parking structure and soccer field south of Sixth Street will increase pedestrian activity on Claremont Boulevard and on Sixth Street. Claremont Boulevard is a 4-lane arterial road.

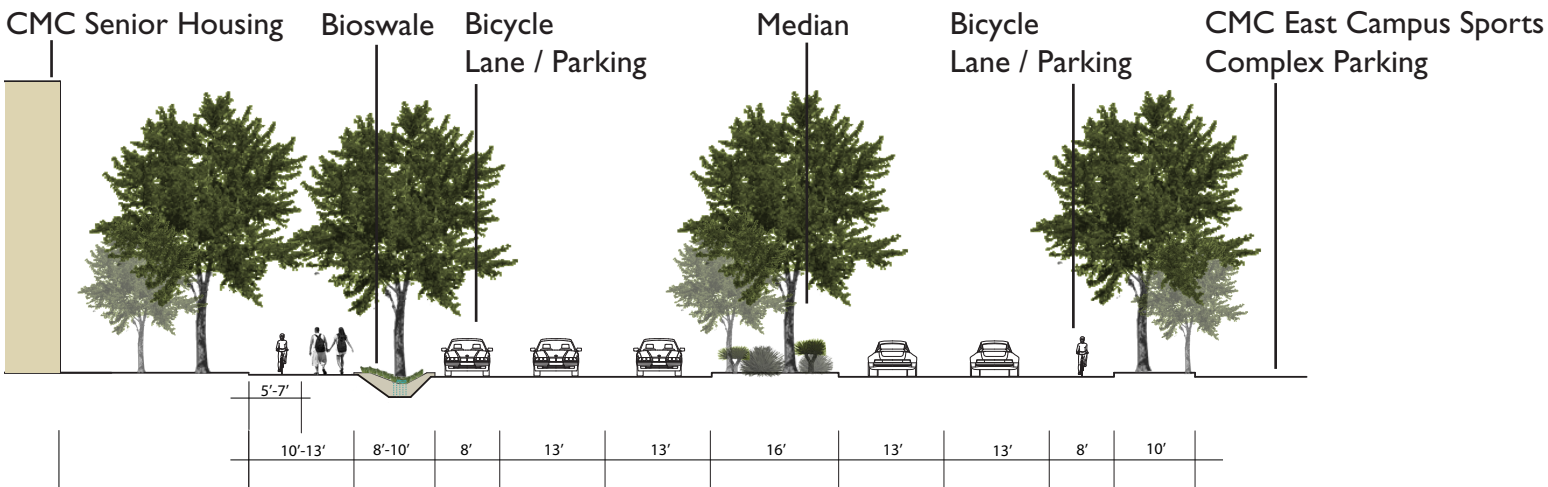
Strategies will be adopted to maintain pedestrian safety and traffic flow. Such strategies may include:

- Traffic signal installation.
- Pedestrian crossing lights and striping.
- Speed humps.
- Raised table intersections.
- “Bulb-outs” to reduce crossing distance.
- Creation of pleasant pedestrian and bike pathways.
- Barriers to discourage jay-walking.

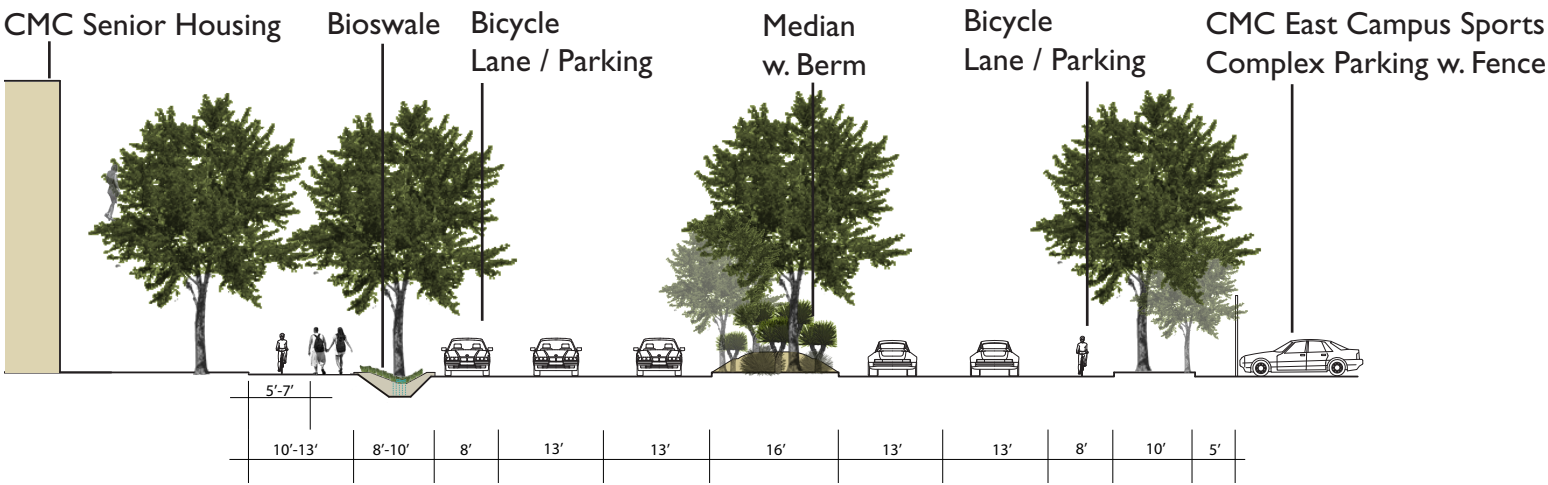
Possible implementations of some of these strategies are illustrated in the adjacent street sections. The pedestrian circulation options shown are provided for schematic purposes only and actual designs for specific locations may vary.

## Primary Pedestrian Circulation Options - Claremont Blvd. (Section looking north)

### Option 1

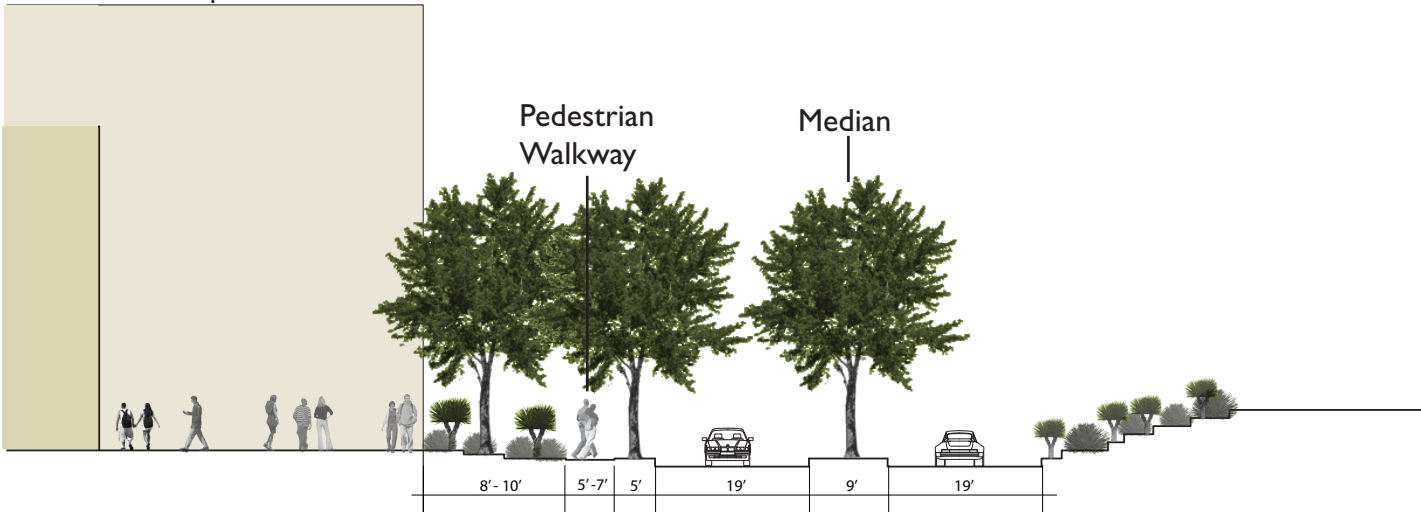


### Option 2



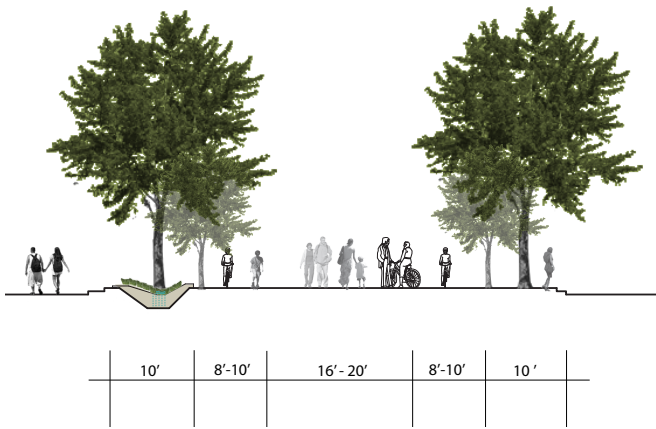
## Primary Pedestrian Circulation Options - Ninth Street

### Option 1 Campus Center

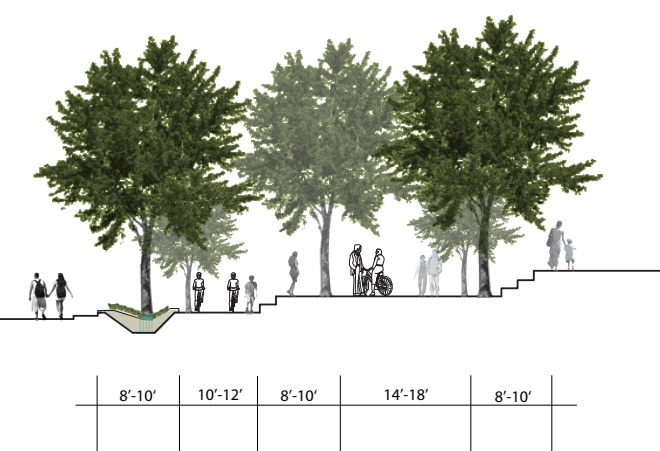


Primary Pedestrian Circulation Options - Mills Avenue

Option 1

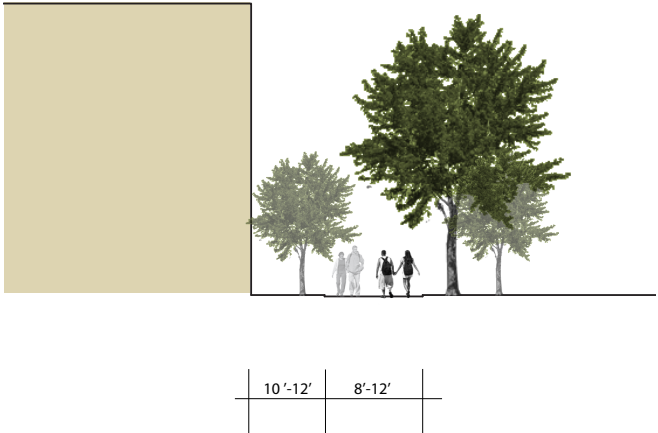


Option 2



Secondary Pedestrian Circulation Options

Option 1



Option 2



Tertiary Pedestrian Circulation Options

Option 1



Mobility on Campus

# Mobility & Circulation

## Bicycle Circulation & Public Transportation

Bicycles are an important part of life on the CMC campus. The benign climate and compact, bike-friendly community encourages the year-round usage of bikes by students, faculty and staff.

To further encourage the use of bicycles, CMC has created an on-campus bicycle shop that provides simple repairs and lends bikes to students, faculty and staff for free. Additionally, the shop will recycle bikes that would otherwise be abandoned, and employs a small number of students to serve as bike technicians.

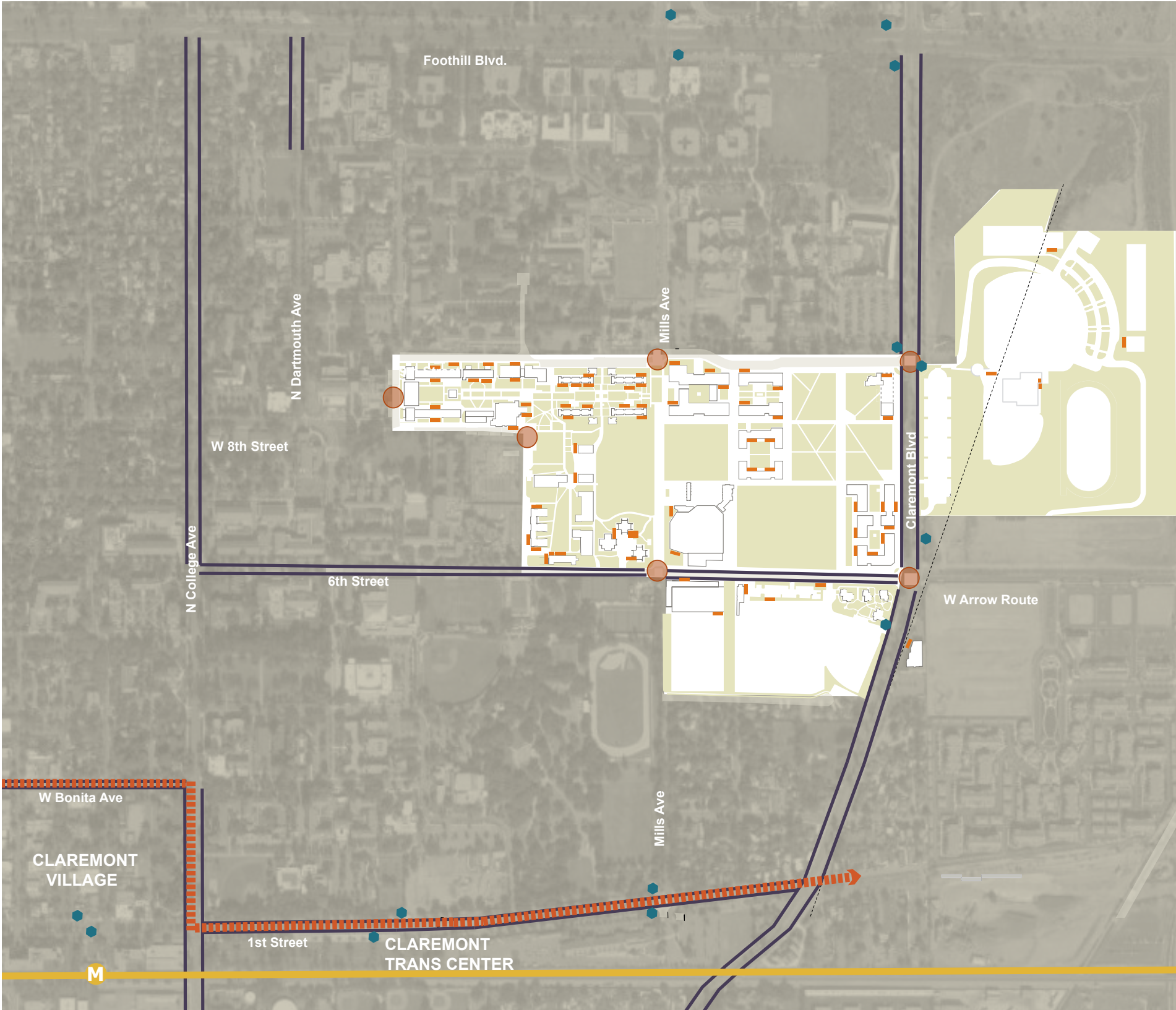
Class II bike paths linking to the larger community are accessible on Claremont Boulevard and on 9th Street. Bike parking/racks are provided at points of destination as described in the adjacent diagrams. The CMC Campus is linked to the larger community by public transportation via bus service provided by Foothill Transit and rail service provided by Metrolink and Amtrak. Bus stops are currently provided on the east side of Campus on Claremont Boulevard. Bus access to the Ontario International Airport provides global connectivity.

Metrolink and Amtrak stations located in the Village may be reached by bus, bike or foot. Metrolink connects the CMC Campus through a commuter rail system to metropolitan Los Angeles while Amtrak connects riders to a national rail system. The planned expansion of the Metro Gold Line will provide added rider access.

The Foothill Transit District Claremont Transit Center is located on 1st Street within three-quarters-of-a-mile from the CMC campus. Seven different bus routes are accessible providing ready transportation to local and regional destinations.

In an effort to further highlight and encourage use of transit by the CMC community, the College will propose to add benches, shelters, and other improvements to the transit stops immediately adjacent to the CMC campus.

The Class II bike path on Claremont Boulevard links to the Citrus Regional Bikeway at First Street.



Regional Bicycle Circulation & Public Transportation

- claremont metrolink & amtrak station
- CMC campus gateway / primary pedestrian entry
- public transportation stop
- san bernardino line / proposed metro gold line
- type II bike routes
- CMC bicycle rack locations
- citrus regional bikeway