VII.7 DESIGN AND DEVELOPMENT GUIDELINES

University of Colorado
Anschutz Medical Campus
2012 Facilities Master Plan

Design & Development Guidelines

Office of Institutional Planning

Design & Development Guidelines

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I. GOALS

I.1 INTRODUCTION

These Design and Development Guidelines are intended to provide guidance and recommendations to assist staff and consultants in implementing the university's goals and principles as established in the Facilities Master Plan.

All physical improvements, additions, expansions, and renovations should contribute to enhancing the overall aesthetic character and visual unity of the Anschutz Medical Campus as a whole. Each new development on campus will contribute to this goal through a comprehensive design approach reflecting the appropriate integration of urban design, buildings, and open space within the context of identified character districts.

These guidelines represent the university's commitment to create a more vibrant and collaborative environment on campus. They are part of the Anschutz Medical Campus 2012 Facilities Master Plan and a companion document to the University of Colorado Design and Construction Standards*.

*The University of Colorado - Design and Construction Standards document includes: Part 0 - General Information, Part 1 - Design Management, Part 2 - Design & Development Guidelines, Part 3 - University Program Guidelines, and Part 4 - Specification Guidelines. The complete document can be accessed at the following web site: http://www.ucdenver.edu/about/departments/FacilitiesManagement/PoliciesGuidelines/Pages/ForUniversityCommunityGeneralPublic.aspx

The Anschutz Medical Campus is committed to improving the interdisciplinary unity of the campus as a whole. Each new project should be designed to enhance the campus's image, functionality, and collaborative opportunities. The design intent for all projects should include promoting a sense of community derived from actively shared spaces providing opportunities for both planned and chance encounters.

The following principles should guide the future design of the campus.

A Built Environment Promoting Intellectual and Social Exchange: Public space, comprised of exterior spaces (streets, promenades, plazas, etc.) and interior spaces (lobbies, atria and internal connectors), provides opportunities for the coming together of a diverse campus population. These spaces provide opportunities for intellectual and social exchange. The public realm should be designed to accommodate a variety of active and passive spaces for conversation, relaxation, recreation, and collaboration.

Respect for Context: The Anschutz Medical Campus can be perceived at multiple levels; as a whole, as a grouping of districts, and as a variety of individual buildings and spaces. All new projects should successfully contribute to a sense of cohesiveness as well as being

individually strong works of architectural design on their own. They should be sited and designed in a manner so as to compliment their surroundings in materials, scale, and proportion. New buildings should be designed so that they enhance the quality of adjacent buildings, streets and open spaces. They should be sympathetic to the character of their districts as well as contribute to the campus identity as a whole.

Flexibility: The campus must effectively meet the current and foreseeable future needs of its diverse population of users. It should be designed for flexibility and adaptability. As user needs and requirements evolve over time, the built environment should be able to accommodate some level of reconfiguration without exorbitant expense or operational disruption.

Quality: It is essential that the campus continue to be designed and constructed to the highest standards of quality possible within the funds available. The sense of permanence and care communicated by high quality planning, design, execution, and maintenance has a significant impact on prospective students, faculty and staff that are considering joining the university as well as on the confidence and peace of mind of the patients relying upon campus clinical services.

Economy: The long-term operating costs of the built environment far exceed the original cost of construction. As a state supported institution committed to excellence in learning, research, clinical care, and community service and engagement, it is important that projects be constructed in a cost effective manner. The university's focus, to the extent practical, is to design environments that are economical over their total anticipated life-cycle and not simply based upon lowest first cost.

Stewardship: The university recognizes the importance of sustainable practices and has committed to reducing natural resource use, greenhouse gas emissions, and to the design and construction of high quality "green" facilities and environments on campus. Principles of environmental stewardship, energy efficiency, and resource conservation should be incorporated into all new campus developments and major renovation projects.

Students enjoy a game of volleyball on the Educations Commons.

The Barbara Davis Center for Childhood Diabetes, while a predominately clinical use building, was designed with the ability to accommodate future wet-lab research.

Anschutz Health and Wellness Center - Green roof garden.

II. URBAN DESIGN GUIDELINES

II.1 PRINCIPLES

Twentieth Century urban and regional planning has typically focused upon the segregation of land use types and property uses. The conventional tools used for directing development densities have been FAR, height limits, setbacks, parking ratios, etc. The unfortunate consequence this sort of land use regulation has been the development of planned environments often judged to be less than successful in terms of their ability to generate any sort of cohesive and substantive public realm.

This segregation of use planning has often resulted in stagnant, rigid communities, lacking in flexibility, adaptability, and the vibrancy found in mixed-use environments of the past. Contemporary open space is often handled as something of an afterthought with roadways being viewed as nothing more than pragmatic connections within and between discrete developmental zones. Seldom is the desired character of the public realm considered nor is it adequately communicated through the Master Planning process.

Form-Based developmental planning attempts to address these shortcomings of traditional land use regulation by focusing more on the physical form of development. Less emphasis is made upon building and land usage. Instead, planning efforts are devoted to encouraging strong relationships between buildings and their context. The interaction between streets and buildings in terms of scale, massing, form and frontage areas attempts to create a predictable character for the public realm. A flexible and adaptable mixture of uses is encouraged along with the privatization of civic spaces.

The Cecil Group

These Design Guidelines advocate this form-based approach to the continued growth and development of the Anschutz Medical Campus.

The existing campus can be understood within the context of four specific form-based districts, each having its own defining character and organizational structure:

C1 | Academic Village,

C2 | Urban Campus,

C3 | Hospital District, and

C4 | Special Districts

II.2 CHARACTER DISTRICTS

The framework for future campus development is predicated upon an understanding of the physical and operational pragmatics unique to a variety of existing campus conditions and to their future developmental goals. District specific guidelines have been developed to help designers build upon the existing strengths and established development patterns of each, reflecting the appropriate scale, image, functionality, and integration of buildings and open spaces.

The original physical framework for the Anschutz Medical Campus (formerly the Fitzsimons Army Medical Center) was predicated upon the creation of programmatic usage zones within the 230 acre site for research, education and clinical facilities. The campus was to be organized around the concept of planned open spaces and groupings of buildings having one unifying image or character. It was critical to achieve this quality of development as early as possible in order to facilitate the move from 9th and Colorado and to establish a cohesive physical identity for the Anschutz Medical Center as a national and international center for excellence in teaching, service and research. The success of this initial endeavor has been unprecedented.

Over time, these initially planned zones have established their own unique patterns of development based upon the pragmatic requirements inherent to their individual programmatic needs and goals. The hospital zone has developed in such a way as to accommodate very large, interconnected structures set far back from street lines to allow for the substantial parking requirements of visiting patients. The education and research zones have taken on a very collegiate formal arrangement with buildings delineating discrete campus quadrangles as centers for civic gathering. Other areas on campus have developed with more of an urban typology of higher densities and mixtures of uses with minimal setbacks having streetscapes and plazas constituting their major civic spaces.

The 2012 Facilities Master Plan organizes the Anschutz Medical Campus within the context of four distinct character districts, each having its own unique goals, requirements and organizational structure: C1 | Academic Village, C2 | Urban Campus, C3 | Hospital District, and C4 | Special District. Less emphasis is made upon “zoned” building and land usage. Instead, planning efforts are devoted to encouraging strong relationships between buildings and their context. The interaction between streets and buildings in terms of scale, massing, form and frontage areas attempts to create a predictable character for the public realm. An appropriate mix of uses is encouraged along with the prioritization of civic spaces. By acknowledging the benefits inherent in a variety of organizational frameworks, specific development patterns can be matched with programmatic functions best suited to each existing district.

C1 | Academic Village

C2 | Urban Campus

C3 | Hospital District

C4 | Special District

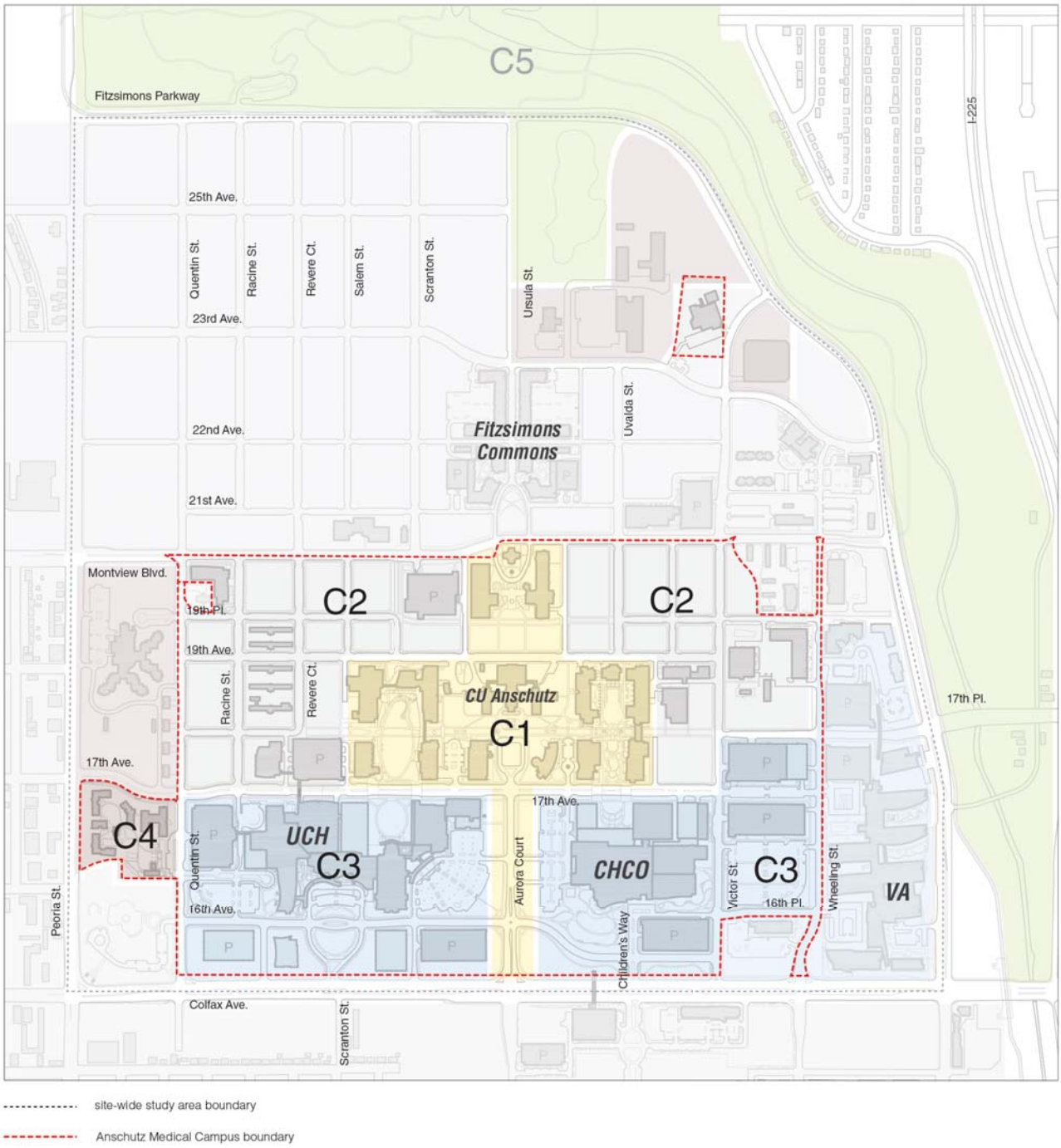


Figure II.2A - Character Districts C4 | Special

II.2.1 C1 | ACADEMIC VILLAGE

The Academic Village portion of the site has been organized in accordance with traditional campus planning concepts and is home to some of its most successful and memorable spaces. It is a fully walkable and sociable environment within a superblock structure. Buildings delineate cohesive civic spaces rather than being experienced as isolated objects unto themselves.

Organizational Structure:

Quadrangles | Promenades

Priorities:

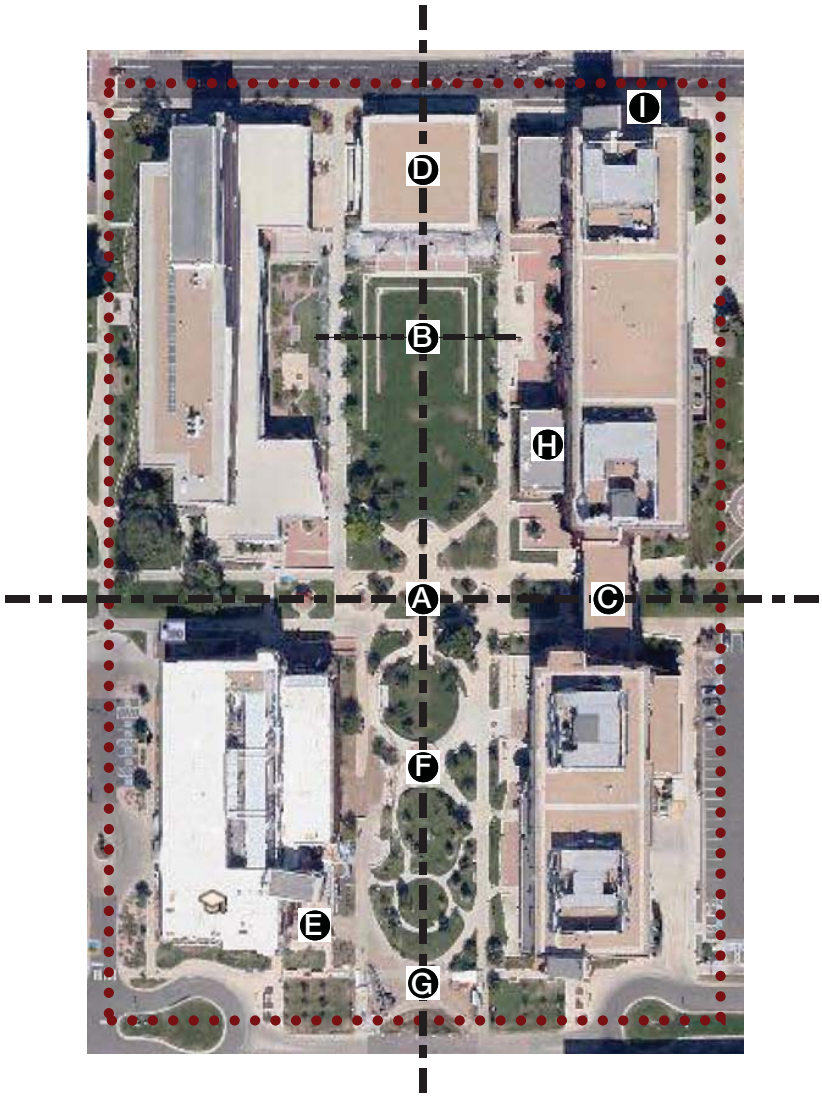
Safety | Collegiate Character | Places for Social & Intellectual Exchange| Pedestrian Scale | Memorability

Development Goals:

- Continue to create a variety of open spaces, of varying scales, to accommodate a full range of outdoor activities and to encourage collaboration, social interaction, vitality, as well as personal reflection.
- Design new buildings and renovations to be architecturally compatible with features of existing adjacent structures and to be harmonious with their contextual surroundings.
- Recognize historically significant aspect of the district.
- Minimize environmental impacts and maximize resource conservation through compact land use and increased density.
- Integrate public art and donor recognition | memorials appropriate to surrounding context.

C1 - Character Guidelines

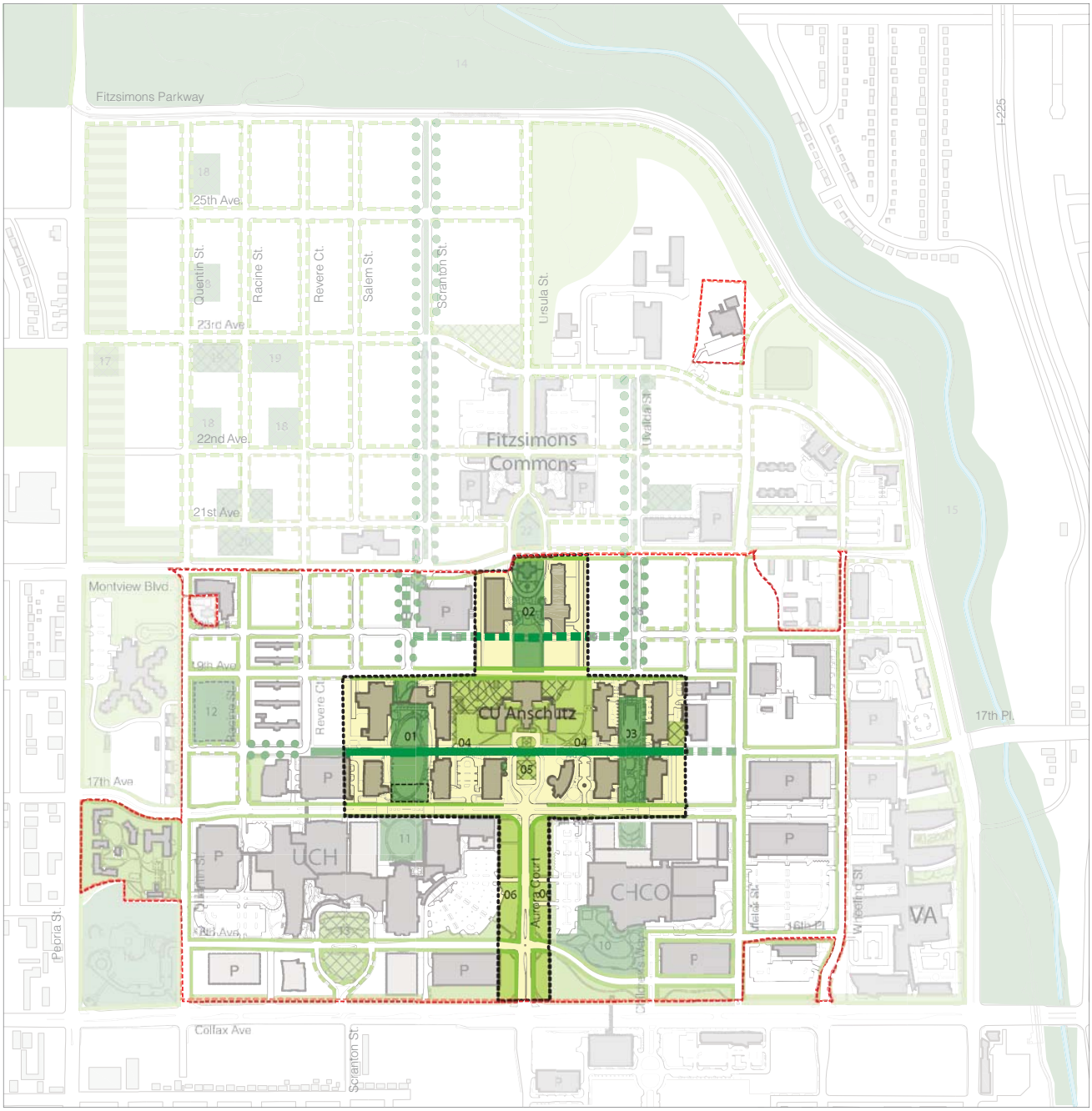
Building Placement	Building frontages define edges of civic open spaces
Frontage Types	Forecourts, Courtyards, Colonnades
Civic Space Typology	Quadrangles, Promenades, Greens, Plazas, & Gardens
Wayfinding Methodology	Promenade - landmarks within civic spaces
Building Height	4 story min., 6 story max. (up to 12 stories w/ EIR & approval)
Setbacks	Front: N/A Rear: N/A Side: N/A
Frontage Buildout	N/A
Thoroughfare Typology	Promenades and Pedestrian Pathways
1st Flr Fenestration Percentage	70% min. on primary & secondary facades
Lighting	Package A
Site Furnishings	Package A
Signage	Package A



Existing Education Quadrangle to illustrate key Urban Design Concepts within the C1 | Academic Village

A Use building forms to define civic space.
B Develop a network of collaborative open spaces to serve both formal & informal gathering
C Connect buildings at grade and with bridges above.
D Create visual landmarks at condition terminations to aid in wayfinding.
E Delineate building entries with wayfinding forms.
F Create relationships between buildings and across public spaces.
G Develop a hierarchical sequence of spaces.
H Consider providing accessible outdoor space on upper floors as public amenities.
I Provide secondary entrances off of secondary streets.

Figure II.2.1A - C1 | Academic Village, Urban Design Concepts



existing / proposed pedestrian promenade
existing / proposed open space
existing / proposed streetscape
proposed tree-lined boulevards
potential future building site on existing open space
Anschutz Medical Campus boundary

Named Open Space (major spaces in BOLD)

01	Research Commons	10	CHCO Healing Garden
02	Student Life Commons	11	UCH Clinical Commons
03	Education Commons	12	Parade Grounds
04	Art Walk Pedestrian Commons	13	Tony Ruiz Plaza
05	Campus Green	14	Sand Creek
06	Aurora Court	15	Tollgate Creek Greenway
07	Scranton Street Greenway	16	General's Park
08	Uvalda Street Greenway	17	Peoria Square
09	19th Place Promenade	18	Life Science Square
		19	Bioscience Quad
		20	Racine Park
		21	Research Green
		22	Fitzsimons Commons

Proposed Open Space
Academic Village

Figure II.2.1B - C1 | Academic Village, Open Space

C1 | Open Space Typologies

Quadrangles

Quadrangles are large scale courtyards framed by several buildings arranged in a rectilinear manner. They are gathering spaces of heavy and frequent use. The Education & Research Quadrangles stand as the major organizing elements for the Academic Village portion of the site. They constitute a symbolic landscape that clearly states “this is a traditional American educational campus.” They often serve as ceremonial spaces on campus; both formal and informal in nature.

They are the pedestrian crossroads. As such, quadrangles express and facilitate the collegiality of the university environment. They are designed for walking, waiting, playing, and gathering.

Education Quadrangle

Promenades

Linear gathering spaces connecting a string of formal and informal sub-spaces, promenades serve as major pedestrian corridors linking critical destinations within the Academic Village environment; and as such, they constitute the major way-finding system. They are intended to accommodate quiet activities such as strolling, study, relaxation and people watching.

Primary building entrances should be oriented towards the promenade with a vocabulary of forecourts, portico, loggias and arcades providing transition zones between the two.

17th Place - Art Walk Promenade

Common | Green

Commons or Greens are open spaces available for unstructured recreation and civic purposes. They allow for formal outdoor gatherings and can accommodate graduations, presentations/lectures, dedications, press conferences, etc. A common or green is spatially defined by building frontages. Its landscape consists of paths, lawn and trees, formally disposed. They are typically located at the intersection of important thoroughfares.

Campus Green

Plazas

A Plaza is an open public space commonly found in the heart of a traditional urban district or town used for community gatherings. Most Plaza are hardscapes suitable for open markets, music concerts, political rallies, and other events that require firm ground. Being centrally located, Plazas are usually surrounded by small shops, restaurants and civic buildings. At their center is often a

fountain, well, monument, or statue. A variety of activities can occur within a single plaza if the space is large enough to accommodate it and a hierarchy of uses is well defined. Clear definition of sub-spaces can be accomplished through plantings, seating, elevation changes, or other landscape elements.

Forecourts

Forecourts are paved area – far lesser in scale than a plaza - existing at building entrances, or at the intersections of major pathways, providing focus to the pedestrian experience. The design of forecourts should be appropriately scaled for their intended activity and associated structure – sheltering trees or shrubs located close together to provide quiet areas, open areas for larger gatherings, and benches in areas for resting and talking in small groups.

Courtyards

An area wholly or partially surrounded by walls or buildings. Courtyards are to vary in size and character and are to be integrated with adjacent buildings. Landscaping within courtyards is also intended to complement surrounding buildings and programs. In larger courtyard spaces, formal landscaping might be used around the perimeter of the space to reduce the overall feeling of scale. When buildings do not provide adequate enclosure, formal plantings shall be used to reinforce a sense of order and provide further definition to the space. Informal landscaping presents the flexibility to respond to programmatic needs.

Courtyards are important people places for passive activities such as waiting, resting, studying, and visiting. They warrant shelter from inclement weather, separation from high pedestrian traffic, unique paving materials, and appropriate site accessories to enhance user comfort.

Gardens

A garden is a planned outdoor space set aside for the display, cultivation, and enjoyment of plants and other forms of nature. They may include patio areas, tables, benches, fountains, etc.. Plantings should have seasonal variety and interest with a variety of scales and plant materials. Xeriscape gardens use local native plants that do not require irrigation or extensive use of other resources while still providing the benefits of a garden environment.

The character and image of each garden space is to vary throughout the campus and each is to reflect the function of the adjacent campus buildings.

University Plaza between the Health Sciences Library & the Pharmacy Building.

The forecourt of Education 2 provides a variety of seating options for students to study and relax.

Courtyard/Garden along east facade of Education 1.

C1 | Architectural Character

Colonnades

A highly successful vocabulary of colonnades has evolved within the Academic Village. These architectural elements provide richness to the building vocabulary; taking advantage of the ample Colorado sunlight to create a play of shade and shadow. They aid in the delineation of shared open space boundaries and provide transition zones between quadrangles or plazas and their adjacent sub-spaces.

The continued use of these colonnades in the form of arcades, loggias, and pergolas is highly encouraged in future campus development.

Colonnade at the Fulginiti Center for Bioethics & Humanities.

Towers

Towers play a crucial way-finding role within the Academic Village district. They are key landmarks of the built environment, allowing users to visually orient themselves as they move throughout the campus.

As landmarks, they should be used judiciously. Their presents should be limited to major civic buildings, important intersections of circulation routes, and critical destination making points within a view shed.

Health Sciences Library tower.

Bridges

Bridges between structures have been found to be critical to the interconnectivity of programs throughout the campus. They are physical manifestations of the universities commitment to inter-disciplinary collaboration and translational research.

Similar to towers, bridges play a significant role as visual landmarks throughout the campus. Their role as gateways between differing environments should be considered, as well as their impact upon the pedestrian experience when used to establish a rhythm along a linear path or promenade.

Bridges are encouraged not only within individual character zones but should span between them. Linkages between the Academic Village and the Hospital District, across the 17th Avenue- Translational Corridor, are particularly desirable.

Bridge connecting Research 1, north & south towers

II.2.2 C2 | URBAN CAMPUS

Medium density mixed use buildings within a hierarchical network of streets and plazas, this zone is characterized by wide sidewalks, steady street tree planting and buildings set close to the sidewalks. It is a fully walkable environment with a balance of pedestrian and vehicular activity.

The Urban Campus is a unifying framework tying together developments on the north and south sides of Montview Boulevard as well as the greater surrounding community.

Organizational Structure:

Formal Street Grid

Priorities:

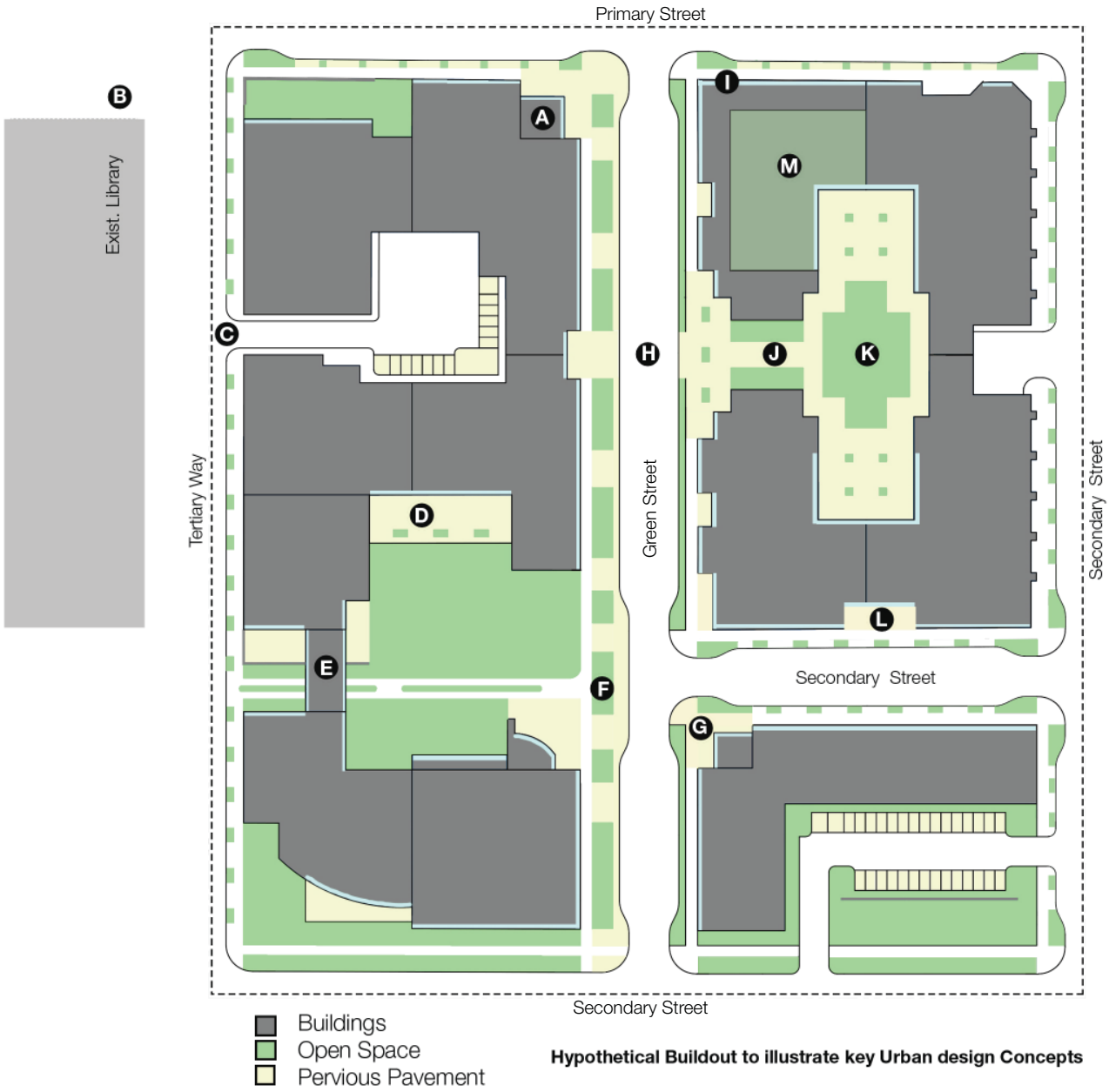
Safety |Pedestrian oriented streets |Connectivity with surrounding community and districts | Flexibility in vehicular movement and development opportunities.

Development Goals:

- Organize the arrangement and design of buildings and exterior spaces to encourage interaction and foster a sense of shared community.
- Acknowledge that the campus is part of the larger surrounding community through compatible character, land use relationships, and circulation patterns.
- Minimize environmental impacts and maximize resource conservation through compact land use and increased density.
- Design all roads to be complete streets - designed and operated to enable safe, attractive, and comfortable access and travel for all users.

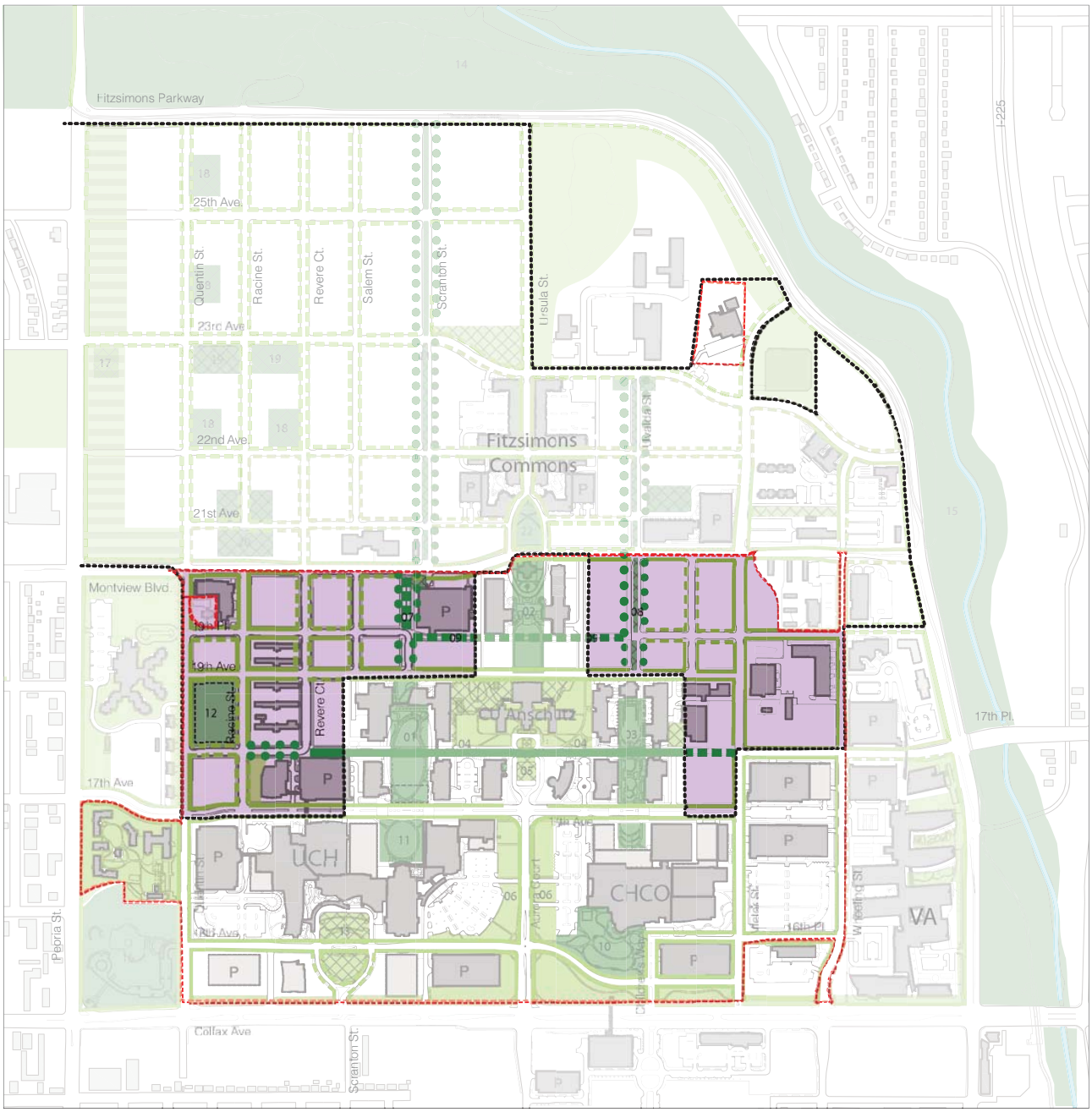
C2 - Character Guidelines

Building Placement	Shallow to no setbacks. Main building entrances oriented towards primary streets.
Frontage Types	Store fronts, Colonnades
Civic Space Typology	Streets, Plazas, Courtyards, Parks, & Gardens
Wayfinding Methodology	Street Grid
Building Height	4 story min., 6 story max. (up to 10 stories w/ EIR & approval)
Setbacks	Refer to following Table
Frontage Buildout	80% min. on primary streets
Thoroughfare Typology	Hierarchy of streets within an orthogonal grid.
1st Flr Fenestration Percentage	75% min. on primary & secondary street frontages.
Lighting	Package B
Site Furnishings	Package B
Signage	Package B



A Use building forms to define campus gateways.
B Respect alignment of existing adjacent buildings.
C Locate service access off of tertiary roadways.
D Develop a vocabulary of courtyard terraces on south facades.
E Connect buildings at grade and with bridges above.
F Create visual landmarks at condition terminations to aid in wayfinding.
G Activate intersections with building entries and wayfinding forms.
H Create relationships between buildings and across public spaces.
I Active ground floors with transparency on main and secondary facades.
J Use building forms to create a sequence of spaces.
K Consider interior courtyards as public amenities and access to natural daylight.
L Provide secondary entrances off of secondary streets.
M Consider green roofs.

Figure II.2.2A - C2 | Urban Campus, Urban Design Concepts



Proposed Open Space
Urban Campus

Figure II.2.2B - C2 | Urban Campus, Open Space

C2 | Open Space Typologies

Plazas

A Plaza is an open public space commonly found in the heart of a traditional urban district for community gatherings. Most Plaza are hardscapes suitable for open markets, music concerts, political rallies, and other events that require firm ground. Being centrally located, Plazas are usually surrounded by small shops, restaurants and civic buildings. At their center is often a fountain, well, monument, or statue. A variety of activities can occur within a single plaza if the space is large enough to accommodate it and a hierarchy of uses is well defined. Clear definition of sub-spaces can be accomplished through plantings, seating, elevation changes, or other landscape elements.

Portland State University - Academic & Student Recreation Center. Photo by Christian Columbres

Courtyards

An area wholly or partially surrounded by walls or buildings. Courtyards are to vary in size and character and are to be integrated with adjacent buildings. Landscaping within courtyards is also intended to complement surrounding buildings and programs. In larger courtyard spaces, formal landscaping might be used around the perimeter of the space to reduce the overall feeling of scale. When buildings do not provide adequate enclosure, formal plantings shall be used to reinforce a sense of order and provide further definition to the space. Informal landscaping presents the flexibility to respond to programmatic needs.

Courtyards are important people places for passive activities such as waiting, resting, studying, and visiting. They warrant shelter from inclement weather, separation from high pedestrian traffic, unique paving materials, and appropriate site accessories to enhance user comfort.

Courtyard adjacent to the Campus Services Building.

Parks

Parks are natural preserves available for unstructured recreation. They are generally independent of surrounding building frontages. Their landscape consists of paths and trails, meadows, water bodies, woodland and open shelters, typically naturalistically disposed.

General's Park

Gardens

A garden is a planned outdoor space set aside for the display, cultivation, and enjoyment of plants and other forms of nature. They may include patio areas, tables, benches, fountains, etc.. Plantings should have seasonal variety and interest with a variety of scales and plant materials. Xeriscape gardens use local native plants that do not require irrigation or extensive use of other resources while still providing the benefits of a garden environment.

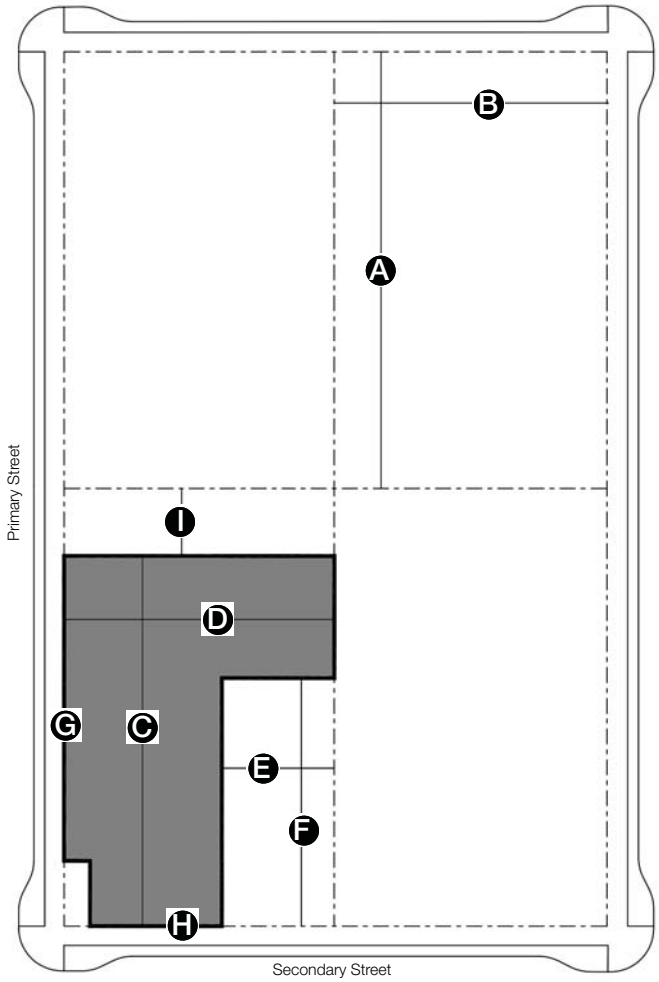
The character and image of each garden space is to vary throughout the campus and each is to reflect the function of the adjacent campus buildings.

Gardens surrounding the Health and Wellness Center.

Discovered Spaces

Discovered spaces have the potential to be the most intimate and special places on campus. They can be designed small-scale places or can constitute an unpredictable circumstance that creates a lasting impression (benches overlooking a pond; a small patch of lawn under a magnificent tree; or a warm sun pocket of space on a cold winter's day, etc.).

Pond outside of the Nighthorse Cambell Native Health Building.



KEY

Lot Line

Building

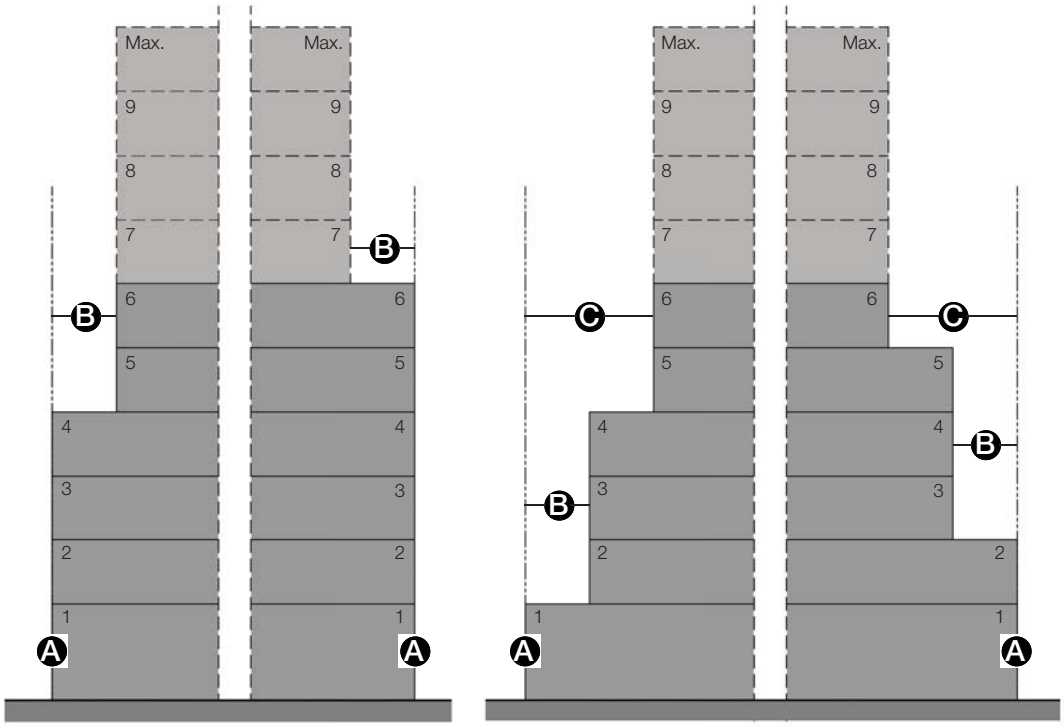
Mid-Rise: 4 to 6 stories tall with the potential to incorporate limited on-site surface parking or below grade structured parking. Vertical mixture of program with ground floor public usage.

Lot Size	
Width	A 150’ min.; 200’ max
Depth	B 100’ min ; 125’ max.
Building Footprint	
Width	C 200’ max.
Depth	D 125’ max.
Lot Coverage	40% min; 80% max.
Courtyard(s)	
Width	E 20’ min.; 120’ max.
Depth	F 20’ min.; 75’ max

Setbacks	
Primary Street	G 0‘ min; 12’ max
Secondary Street	H 0‘ min.; 12’ max.
Adjacent lot (on Primary Street)	I 0‘ min.; 31’ max

NOTE: Parcels may be combined. When combined, buildings should be articulated in such a way as to reflect original parcelization.

Figure II.2.2C - C2 | Urban Campus, Lot Development Guidelines



KEY

Lot Line

Building

Mid-Rise: 4 to 6 stories tall (with the potential for high-rise construction based upon Environmental Impact Report [EIR] approval. 10 story max.)

Primary & Secondary Street Setbacks

A 0' min., 12'max.

B 10' min.

C 20' min.

Figure II.2.2D - C2 | Urban Campus, Setback Guidelines

C2 | Architectural Character

A primary goal for the Urban District is the establishment of a continuous vertical building surface along the majority of length for each streetscape. The “street wall” is to be achieved by aligning facades with the back edges of sidewalks and limiting building setbacks to strategic locations adjacent to major public open spaces.

Minor variations in the massing and articulations in fenestration for each building will provide diversity. The nature of each building’s street wall presence will ultimately be defined by the functional opportunities and constraints of its programmatic requirements. Special emphasis should be given to the articulation of building entrances and street corner elements.

All buildings shall have their primary entrances located on primary street facades. Entrances should integrate with the streetscape design and directly connect with the public sidewalk except in cases where primary entrances front plazas or major open spaces. Entrances and lobbies with through-block connections will be incorporated into the design of buildings having parking areas located behind the building they serve.

Buildings shall be articulated by three major horizontal divisions to express base, middle, and upper level conditions. The base zone should be designed to give the appearance of greater height than any other single floor and should be composed of masonry and window systems, with the sill of ground floor storefronts being as close as reasonably possible to the exterior ground plane. Ground level activities should be oriented toward the street and contain a richness of architectural details and materials along with a variation in wall depth. This zone should directly relate to the street edge treatment.

The middle zone, above the base, establishes the primary massing of the building. The upper zone should be easily distinguishable. It is meant to create a distinct termination to the vertical street wall and should address a relationship between the building and the sky above.

Opportunities for underground parking should be explored in the design of buildings within the Urban Campus.

Rendering of future Academic Building 1

Conceptual rendering of an urban campus streetscape by Anderson Mason Dale Architects.

II.2.3 C3 | HOSPITAL DISTRICT

Much larger than a traditional city block, with greater building setbacks, these zones are typically bounded by widely spaced, high-speed, arterial or circulating routes rather than by local streets. Framework allows for the development of very large, interconnected, mega structures.

Organizational Structure:

Interconnected buildings within the landscape.

Priorities:

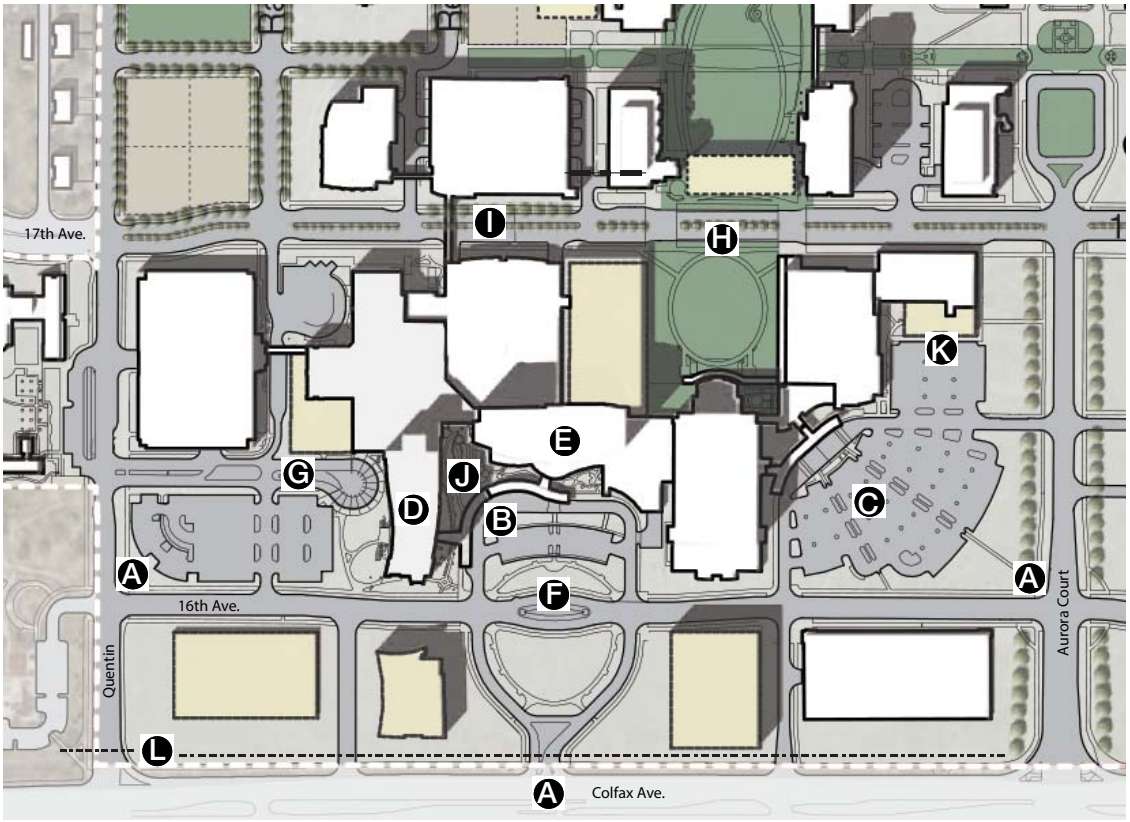
Safety | Patient Access | Parking | Way-finding

Development Goals:

- Enhance the patient|visitor centered experience through improvements in accessibility, way-finding and parking.
- Enhance connectivity between the C3|Hospital and C1|Academic districts.
- Protect and enhance open space providing an appropriate balance, both qualitative and quantitative, to the build environment.
- Effectively integrate with the regional transportation network.
- Encourage interdisciplinary and inter-institutional collaboration.

C3 - Character Guidelines

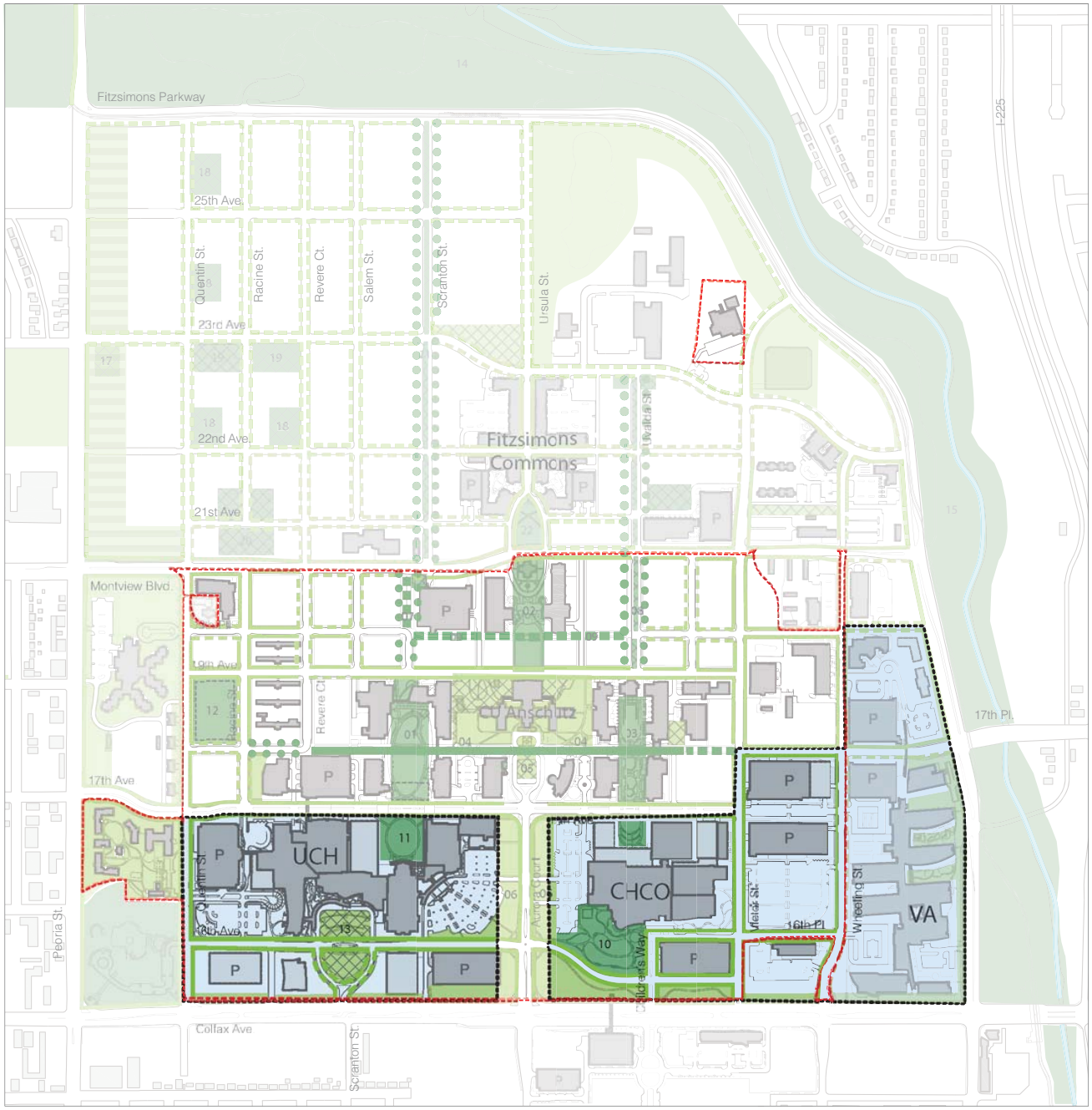
Building Placement	Greatest density located at center of superblock with lower density development toward the perimeter.
Frontage Types	Porte Cochere, Healing Gardens, Canopies
Civic Space Typology	Internal Atria, Commons, & Gardens
Wayfinding Methodology	Towers | Canopies | Signage
Building Height	4 story min., 6 story max. (up to 14 stories w/ DRB approval)
Setbacks	Front: N/A Rear: N/A Side: N/A
Frontage Buildout	N/A
Thoroughfare Typology	Collector Ring Road
1st Flr Fenestration Percentage	65% min. on primary & secondary facades
Lighting	Package A
Site Furnishings	Package A
Signage	Package A



Existing and Hypothetical Buildout of UCH to illustrate key Urban Design Concepts within the C3 | Hospital District

A Provide clear and comprehensive wayfinding for patients and visitors.
B Utilize a vocabulary of canopies and porte cocheres to designate points of arrival.
C Prioritize the arrival and parking experience of patients over that of others.
D Use of visual landmark towers to aid in wayfinding.
E Create an interconnected complex of structures with a clear hierarchical sequence of spaces.
F Implement traffic calming measures along internal roadways.
G Seperate service access conditions from public access.
H Strengthen the north|south physical relationship between C1 & C3 districts.
I Build upon the character established along 17th Avenue at Leprino.
J Design residual spaces as gardens and places of discovery.
K Activate ground floors with transparency on main and secondary facades.
L Colfax frontage to retain a character sympathetic to Govenor's Park

Figure II.2.3A - C3 | Hospital District, Urban Design Concepts



existing / proposed pedestrian promenade

existing / proposed open space

existing / proposed streetscape

proposed tree-lined boulevards

potential future building site on existing open space

Anschutz Medical Campus boundary

Named Open Space (major spaces in BOLD)

01	Research Commons	10	CHCO Healing Garden
02	Student Life Commons	11	UCH Clinical Commons
03	Education Commons	12	Parade Grounds
04	Art Walk Pedestrian Commons	13	Tony Ruiz Plaza
05	Campus Green	14	Sand Creek
06	Aurora Court	15	Tollgate Creek Greenway
07	Scranton Street Greenway	16	General's Park
08	Uvalda Street Greenway	17	Peoria Square
09	19th Place Promenade	18	Life Science Square
		19	Bioscience Quad
		20	Racine Park
		21	Research Green
		22	Fitzsimons Commons

Proposed Open Space
Hospital District

Figure II.2.3B - C3 | Hospital District, Open Space

C3 | Open Space Typologies

Common | Green

Commons or Greens are open spaces available for unstructured recreation and civic purposes. They allow for formal outdoor gatherings and can accommodate presentations/lectures, dedications, press conferences, etc. A common or green is spatially defined by building frontages. Its landscape consists of paths, lawn and trees, formally disposed. They are typically located at the intersection of important thoroughfares.

University of Colorado Hospital - Tony Ruiz Plaza

Gardens

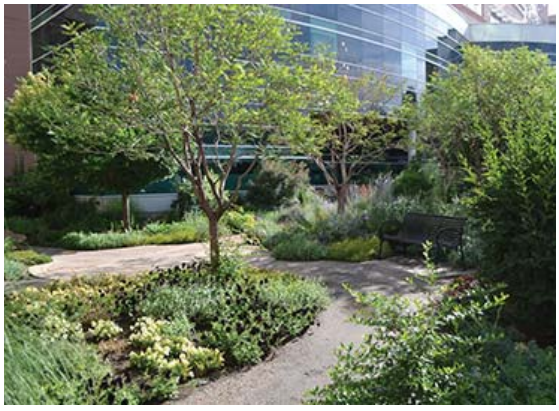
A garden is a planned outdoor space set aside for the display, cultivation, and enjoyment of plants and other forms of nature. They may include patio areas, tables, benches, fountains, etc. Healing gardens are found throughout the campus providing places for quiet contemplation and reflection within serene and calming environments. Plantings should have seasonal variety and interest with a variety of scales and plant materials. Xeriscape gardens use local native plants that do not require irrigation or extensive use of other resources while still providing the benefits of a garden environment.

The character and image of each garden space is to vary throughout the campus and each is to reflect the function of the adjacent campus buildings.

Children's Hospital of Colorado - Healing Garden

Discovered Spaces

Discovered spaces have the potential to be the most intimate and special places on campus. They can be designed small-scale places or can constitute an unpredictable circumstance that creates a lasting impression (benches overlooking a pond; a small patch of lawn under a magnificent tree; or a warm sun pocket of space on a cold winter's day, etc.).



University of Colorado Hospital - Discovered Space

C3 | Architectural Character

Development within the Hospital District has most closely followed the original vision of the 1999 Master Plan in terms of creating an environmental character of "Buildings in a Park". This has allowed for the development of very large, interconnected, mega structures that allow for the level of controlled public/ private interaction required by these institutions.

Healing gardens provide formally designed sub-spaces within the naturalistic landscapes surrounding structures and easily accessible patient/visitor parking.

CHCo's Main Tower - "Building in a Park"

Atria

Atria constitute the major civic gathering spaces within the Patient zone. As such they should designed with the highest level of architectural detail and patient/visitor amenities as allowable within the project budget. They shall be located immediately adjacent to the buildings primary entrance with ample connectivity to the outdoor environment. Natural lighting shall be utilized to the greatest extent possible. Clear and consistent way-finding shall make itself evident through the architectural design of the space with a minimal use of signage needed to supplement patient/visitor orientation.

Children's Hospital of Colorado atrium

Porte Cocheres | Canopies

A safe, secure, and efficient arrive sequence for patients and visitor is of the utmost importance with this zone. Porte Cocheres and canopies should be designed to integrate with the architectural expression of the building and should not appear as additive afterthoughts. Their role as way-finding element should be recognized and leveraged in such as to minimize signage.

University of Colorado Hospital - Cancer Pavilion

II.2.4 C4 | SPECIAL

Special districts constitute unique developments within the campus that for a variety of reasons (historic significance, unique ownership and/or conveyance regulations) do not fit within the other 3 district categories.

Organizational Structure:

Unique to each development.

Priorities:

Unique to each development.

Development Goals:

While there are no defined future developmental goals for these unique developments, their influence of the character of development within adjacent districts should be noted. Future development within the Urban Campus and Hospital District along Quentin Street must be sensitive to the residential scale and character of this special district.

C4 - Character Guidelines

Building Placement	Deep Setbacks
Frontage Types	Porches, Fences, Lawns, & Naturalistic tree plantings
Civic Space Typology	Shared Yards, Courts
Wayfinding Methodology	Signage
Building Height	One & Two Story
Setbacks	Front: Varies – Relatively Deep
	Rear: Varies
	Side: Varies – 30' on average
Frontage Buildout	Varies
Thoroughfare Typology	Varies – Sidewalks & Informal Pathways
Lighting	Package A
Site Furnishings	Package A
Signage	Package A

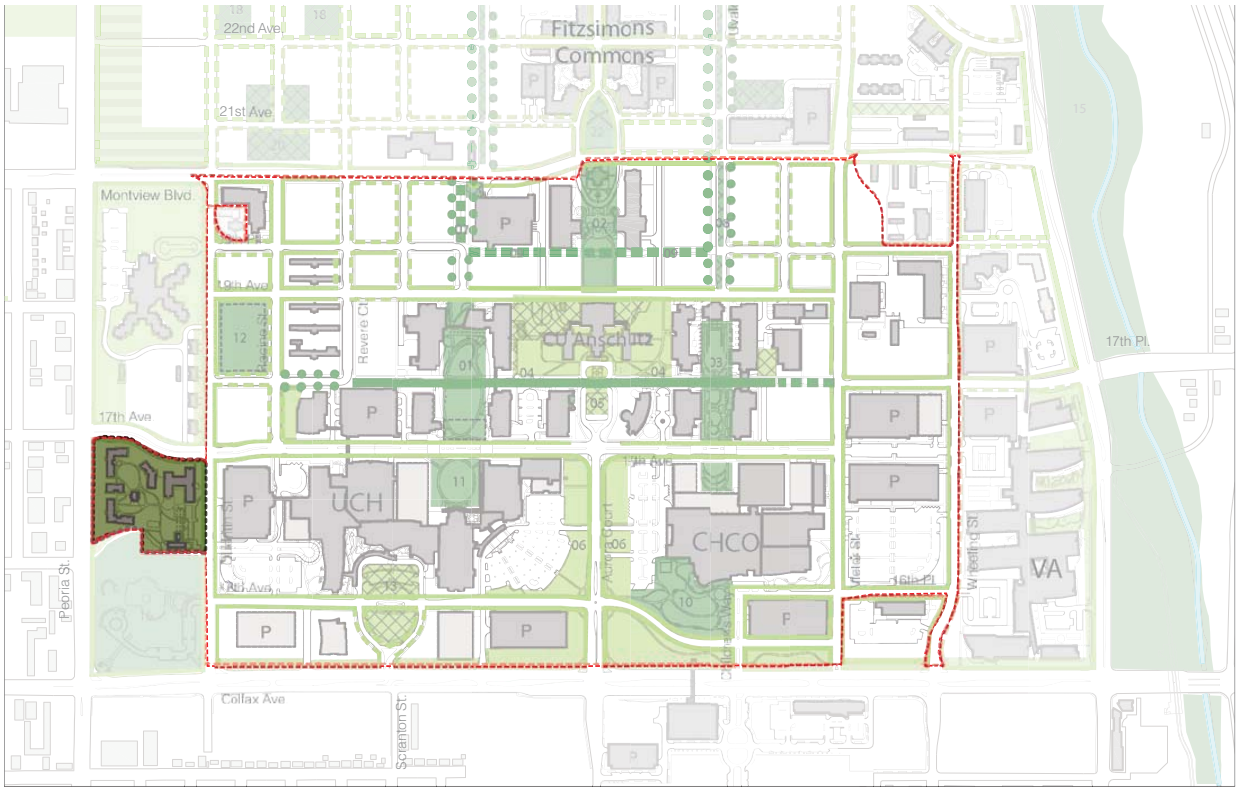


Figure II.2.4A - C4 | Special District, Open Space

C4 | Architectural Character

Any future development within the area of CeDAR will need to be sensitive to the residential scale of these unique structures as well as to their spatial organization. The CeDAR development forms a discrete compound of buildings, all sharing a similar vocabulary of materials and architectural features.

Any renovations, alteration, or additions to these structures (including fencing, plantings, etc.) will require evaluation by the University Design Review Board.

CeDAR's main treatment facility

II.3 PUBLIC REALM

Campus wide streetscape design will promote connectivity and provide a unifying framework throughout the campus. Their design will create rhythm and visual impact, highlighting areas of significance, and tying character zones together to form a comprehensive whole.

A hierarchy of streetscape has been developed to assist in pedestrian and vehicular way-finding. Streets expected to have higher pedestrian activity will incorporate a greater level of detailing and upgraded materials. This will enhance the pedestrian experience creating a more unique and dynamic space. Streets that are anticipated to receive higher speed vehicular circulation will be treated with a more simplified design.

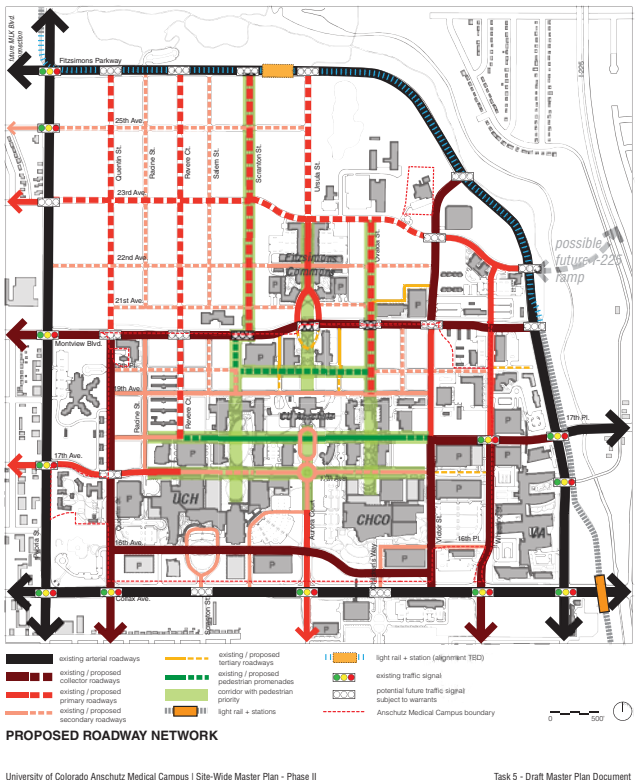
Lighting will further assist in way-finding through a vocabulary of predominantly pedestrian scale lighting fixture being used throughout with vehicular scale fixtures helping to delineate major vehicular routes along collector and service drives.

To add visual interest to the urban streetscape, primary building entries shall be enhanced to create a break in the streetscape paving pattern. Paving material that is reflective of the adjacent building's architecture shall extend uninterrupted from the doors to the back of curb. This change in pavement will alert pedestrians that they are approaching a special area as building entries are to be the only place where the streetscape paving pattern is to be broken. Paving material(s) selected at building entries may consist of colored concrete, exposed aggregate concrete or specialty porous pavers.

Site furnishings shall be located adjacent to building entries and within the furnishing zone indicated on the illustrative street sections. Street trees and lights should stop on the edge of the building entry to allow for an unimpeded entry to the building. Utility access should be coordinated to be placed away from building entries.

The location and layout of streetscapes in the Urban District are designed to be compatible with the surrounding community and sympathetic to City of Aurora standards.

The following streetscapes are listed in accordance with their priority within a hierarchy of corridors within the public realm. Main facades and entrances of buildings shall be oriented towards those streetscapes having primacy within this hierarchy.



PROPOSED ROADWAY NETWORK

University of Colorado Anschutz Medical Campus I Site-Wide Master Plan - Phase II

Task 5 - Draft Master Plan Document

Concept rendering of an urban streetscape by Anderson Mason Dale Architects.

Green Streets (Uvalda & Scranton)

Green Streets are envisioned to be multi-modal connectors weaving the organizational presence of the Academic Village character zone northward to Montview Boulevard and beyond. These roadways are primary entrances on to the campus and are meant to serve as educational showcases for best practice storm water retention and treatment strategies.

A 20' wide linear plaza is proposed, running along the west side of Uvalda; forming a cross axial terminus for the 19th Place Promenade. Within the plaza would be a series of infiltration, storm water planters with a variety of gathering spaces located in between planters.

A 5' wide continuous infiltration storm water planter runs along the east side of Uvalda. Refer to the Landscape Master Plan for material and plant density requirements at all planters.

The roadbed right-of-way consists of two 10" drive lanes flanked on both sides by 5' bike lanes and 7' parallel on-street parking.

Traffic speeds should not exceed 20 mph. Traffic calming methods should be utilized including varying paving surfaces at important intersections and bulb-outs at major pedestrian crossings. Allow for generous sight lines at intersections and at crosswalks. Do not install landscaping elements that will obscure sight lines.

Lighting along green streets shall follow a vocabulary of regularly spaced, vehicular scaled, pole fixtures within the 5' wide planter on one side of the roadway and pedestrian scale pole fixtures located along the plaza. Fixtures should be selected from Package A of Section II.12 of this guideline document to further strengthen to connection of these streets to the Academic Village character zone.

Scranton street should have a similar character as Uvalda however without vehicular access north of the 19th Place promenade and having its orientation reversed. The 20' wide linear plaza on Scranton will run on the east side of the roadway forming a cross axial terminus for the eastern end of the Promenade.

17th Avenue

17th Avenue is proposed to be opened up to multi-modal traffic and is envisioned to become the "Main Street" for the Anschutz Medical Campus. It is planned to be a vibrant, primary gathering space bridging between the Academic and Hospital character districts.

A shuttle service is proposed to run from Quentin to Wheeling streets providing safe and efficient transport between the hospitals and the Academic Village. Bus shelters are to be provided at locations indicated in the Facilities Master Plan. Mixed-use development, similar to that found at the Leprino building and its associated garage, is strongly encouraged along the 17th Avenue corridor.

On street, short-term parking is proposed at strategic locations, relating to building entry points, on both sides of the roadway. Generous 6' bike lanes are to be provided in both directions.

The existing 22' landscape median is suggested to be reduced down to 10' in width to allow for two lanes of traffic in each direction; one dedicated to unrestricted shuttle movement. Existing ornamental tree plantings within the median are suggested to be enhanced along with the addition of a variety of colorful perennial plantings to provide four seasonal interest.

Formal deciduous street trees should occur along both sides of the roadbed along with a variety of planters of various forms and scales.

Crosswalks along 17th Avenue will be of an enhanced design with two major ceremonial crossings occurring at the southern edges of the education and research quadrangles. These two crosswalks are to be designed as generously scaled plazas with street pavers, planters, street furnishings and bollard lighting to clearly indicate to vehicles their pedestrian nature and to mitigate traffic speeds. Traffic speeds should not exceed 15 mph along this corridor.

Accommodations for vendor trucks and carts should be considered adjacent to crosswalk plazas to provide much needed lunch time food purchase options.

Vehicular scale pole lighting will continue to be located along the median with pedestrian scale pole lighting along

sidewalks and at major pedestrian crossings. Fixtures should be selected from Package A of Section II.11 of this document.

Montview Boulevard

The redesign of Montview Boulevard should focus upon how it can become a unifying element in the shared public realm rather than a barrier between the campus and the Colorado Science and Technology Park to the north.

It should be designed similar to "Primary Street" guidelines however with three lanes of traffic being provided; the center being a shared turn lane. Minimum safe lane widths should be provided to encourage slower traffic speeds while still providing safe travel. Traffic speeds should not exceed 30 mph. Traffic calming methods should be utilized including varying paving surfaces at important intersections and bulb-outs at major pedestrian crossings.

Sidewalks shall be provided on both sides along the entire length of the road. Road beds should be separated from pedestrian paths by concrete curbs and elevation changes.

Primary & Secondary Streets

These streets are the primary vehicular pathways throughout the site and provide the major organizational framework for the Urban Campus environment. They provide on-street parking and bicycle access; dedicated lanes on primary streets and "sharrows" on secondary streets.

Primary and secondary streets differ in terms of tree wells, pavement detailing and site furnishings. Primary streets will have deciduous trees planted within 5' x 5' grates with 5' x 20' colored sandcrete sections between planters. Primary building entrances are to be located off of primary street with special paving conditions utilized to delineate their presence.

Secondary streets shall have deciduous trees planted within 5'x10' tree wells with landscape and rock mulch over fabric. Secondary building entrances are to be located off of secondary streets with embedded bike racks located adjacent to them.

Road widths should not exceed 10' in width. Traffic speeds should not exceed 20 mph.

Traffic calming methods should be designed at regular intervals, including clearly marked crosswalk, varying paving surfaces near high-use pedestrian areas, neck downs and roadside landscaping.

Road beds should be separated from pedestrian paths by concrete curbs and elevation changes.

Lighting along primary and secondary streets shall be pedestrian in scale, running continuously along sidewalks on both sides street; evenly spaced between tree wells. Pole mounted vehicular scale fixtures shall be located at intersections. Fixtures should be selected from Package B in Section II.11 of this document.

19th Avenue

In the original 1999 Master Plan, 19th avenue was designated to be the major service road to the center of campus. Access to the material loading docks for the research towers, Building 500, and the education buildings, flows directly off of this existing roadway. The corridor was meant to be "de-emphasized" with very light vehicular, pedestrian and bicycle traffic. Facades of existing structures located along the avenue were designed as tertiary elevations with doorways limited to occupant points of egress.

The nature of this corridor will be changing in the future, with multi-modal traffic expected to increase and it's prominence on campus magnified. A significant redesign of the streetscape is in order. It is important to acknowledge 19th Avenues critical role in both delineating as well as tying together the Urban Campus and Academic Village character zones. Pedestrian porosity in the north south axis must be balanced with efficient vehicular east-west access.

An asymmetrical road way section has been proposed with differing characters on either side of the roadway. The south shall remain service oriented, with predominantly vehicular scale light fixtures. Pedestrian scale pole fixtures shall be used at building egress points and at pedestrian crosswalk conditions. Addition landscaping effort will be required to screen view of existing service docks. Street trees should be planted as a single species with regular, formal spacing.

The north character of the streetscape should be far more pedestrian oriented, with a generous street-lawn to accommodate existing trees and an 8' sidewalk flanked on both sides by a variety of deciduous and ornamental

trees planted in a more naturalistic arrangement. Lighting should be addressed by pedestrian scale pole fixtures selected from Package A in Section II.11 of this document.

Aurora Court

Aurora Court shall retain its existing historical character and 300' view shed. Dedicated bike lanes shall be indicated on both sides of the existing roadbed. Vehicular scale pole lighting should continue to be located within the tree lawn on the west side of the roadway with pedestrian scale pole lighting to be added along existing sidewalks. Fixtures should be selected be from Package A of Section II.11 of this document.

Collector Roadways

Victor Street, Quentin and Montview Avenue constitute a system of vehicular collectors surrounding the Academic Village and Hospital districts.

Collector roadways should be designed with tree lawns lining the edges of the road. They should have minimum safe lane widths to encourage slower traffic speeds while still providing safe travel. Traffic speeds should not exceed 25 mph. Low impact traffic calming methods should be considered along collector roadways, including varying paving surfaces at important intersections, bulb-outs at major pedestrian crossings and roadside landscaping. Allow for generous sight lines at intersections and at crosswalks. Do not install landscaping elements that will obscure sight lines.

Sidewalks should be provided on both sides along the entire length of the road. Road beds should be separated from pedestrian paths by concrete curbs and elevation changes.

Lighting along collector street should follow a vocabulary of regularly spaced, vehicular scaled, pole fixtures within the tree lawn on one side of the roadway and pedestrian scale pole fixtures located inside and along the sidewalk on the other.

There is no on-street parking planned for any of these collector roadways.

Victor & Quentin Streets

Victor & Quentin were designed as the north-south running portions of the ring road system of the original 1998 Master Plan. The intent of this system was to divert heavy traffic flow from the center of campus. It's character is that of a parkway. It was to have an informal landscape with variations in tree densities, an undulating informal topography with mass plantings of various scales and plant varieties strategically placed to enhance views and define entrances.

Existing structures on both of these roadways to date are setback significant distances from the street. Future development along both Victor & Quentin shall conform with existing context. Colonels Row should provide the definitive set back distance for all development on the west side of Quentin with the new University of Colorado Hospital staff and visitor garage defining setback distances for the east side.

Victor provides a continuous connection from Colfax on the south to Fitzsimons Parkway to the north and is the major staff entrance for the Children's Hospital of Colorado. A large number of parking structures and ground lots have been sited along the roadway between Colfax and 17th Place, accommodating a total of 4,398 parking spaces to date. For this reason, bicycle traffic will not be directed along the section of Victor. However, 14' bicycle "sharrows" are to be incorporated into the section of Victor north of 17th Place.

Wheeling Street

The west side of Wheeling Street is currently home to groupings of mature conifers. Development to date has been predicated upon retaining a 58' building setback in order to accommodate these existing trees. Pedestrian scale lighting should be supplemented along the sidewalk on this side of Wheeling.

The east side of this 30' drive presently has a 7'-6" street lawn along with an 8' wide sidewalk. The building setback should be that of an urban street wall. Street trees within the lawn should be of a single species planted within a formal 30' spacing. Lighting shall be of a vehicular scale placed in line with street trees.

Fixtures should be selected from Package A of Section II.11 of this document.

Tertiary Ways

A tertiary Way is defined as any street functioning as a service drive. Service roads should not be utilized for primary pedestrian travel.

Appropriate service access should be accommodated in the design of all new campus buildings. Service access should typically be consolidated to only one location for each building and should be shared whenever possible.

The sights, sounds and possible smells of the service area location should be minimized from pedestrian pathways through the use of landscaping, topography or other visual barriers.

Lighting along tertiary ways should be vehicular in scale, located on only one side of the roadway.

Perimeter Roadways

Perimeter roadways are the primary vehicular routes surrounding the campus.

Fitzsimons Parkway, Peoria Street, and Colfax are perimeter roadways forming the boundaries of the 578-acre Site-Wide development. Their function is to facilitate connections to and from the surrounding urban fabric of the City of Aurora.

As these roadways are owned and maintained by the City of Aurora, any and all improvements must conform to the standards and requirements of the City of Aurora, Public Works Department.

It is the intent that these perimeter roadways be designed with a formal row of trees and landscaping lining the edges of the road. Landscaping elements should not obscure sight lines.

The north side of Colfax should be less formal in nature with plantings sympathetic to the character General's Park.

Sidewalks should be provided along the entire length of the road. Road beds should be separated from pedestrian paths by concrete curbs and elevation changes.

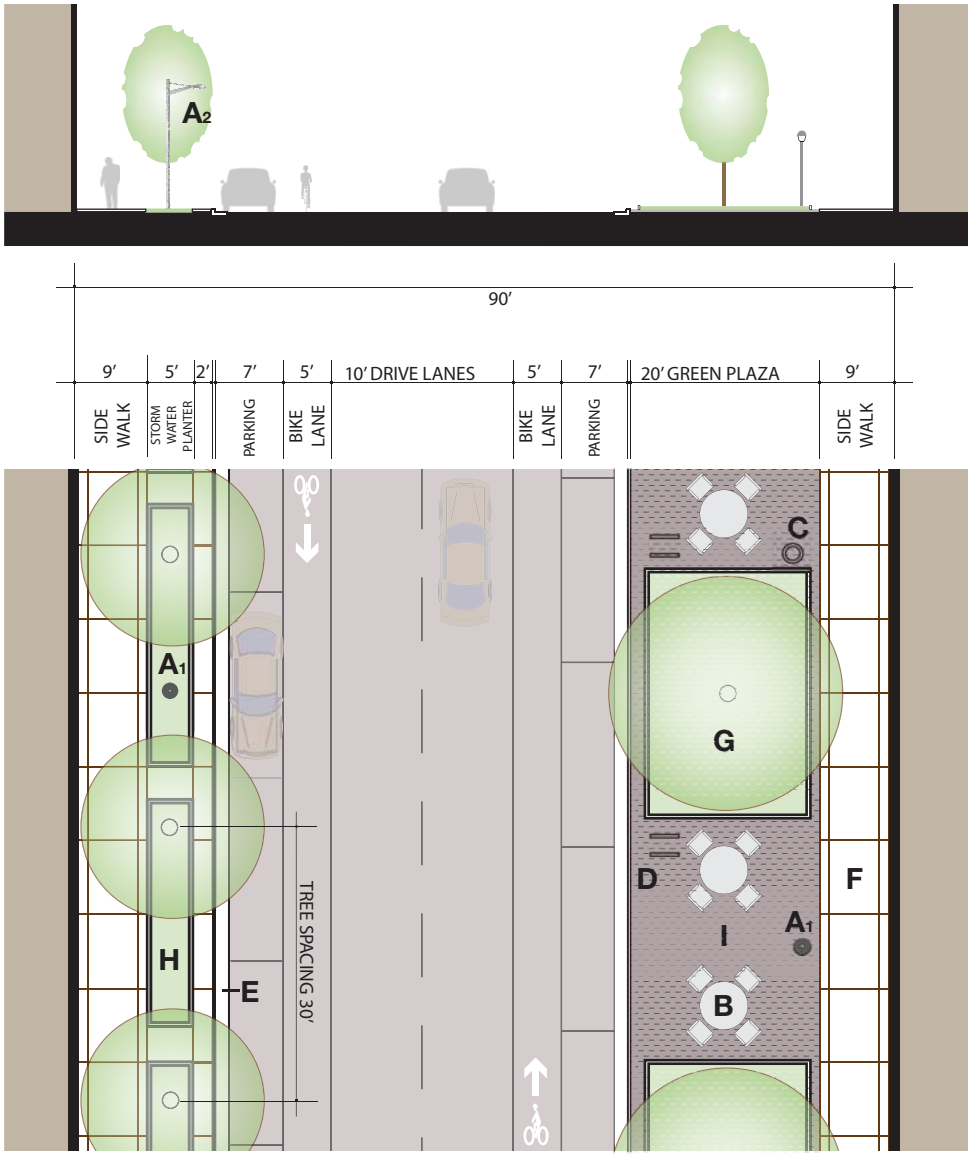
There is no on-street parking planned for any of these arterial roadways.

Intersections

Crosswalks should be located and designed to alert drivers to the presence of pedestrians and to contribute to pedestrian safety when crossing streets and roadways. Two standard crosswalk details are provided for use on campus.

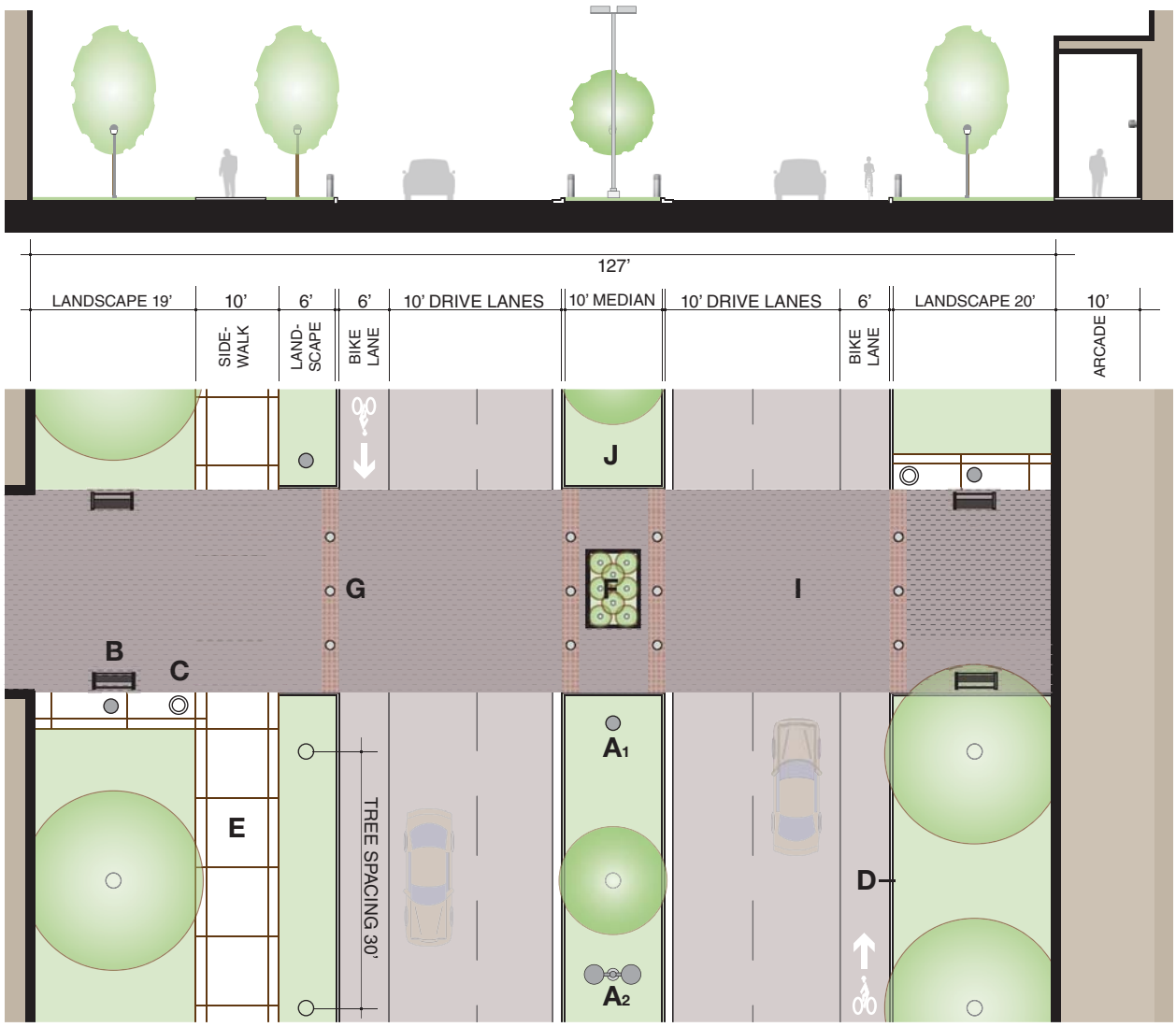
Typical crosswalks should be located at the majority of pedestrian crossings. Enhanced crosswalks should be located at major crossing locations where high pedestrian activity is anticipated.

Major ceremonial crossings are unique to their particular circumstances and will require design approval on an individual basis. Refer to the 2012 Facility Master Plan for the location of each type of crossing.



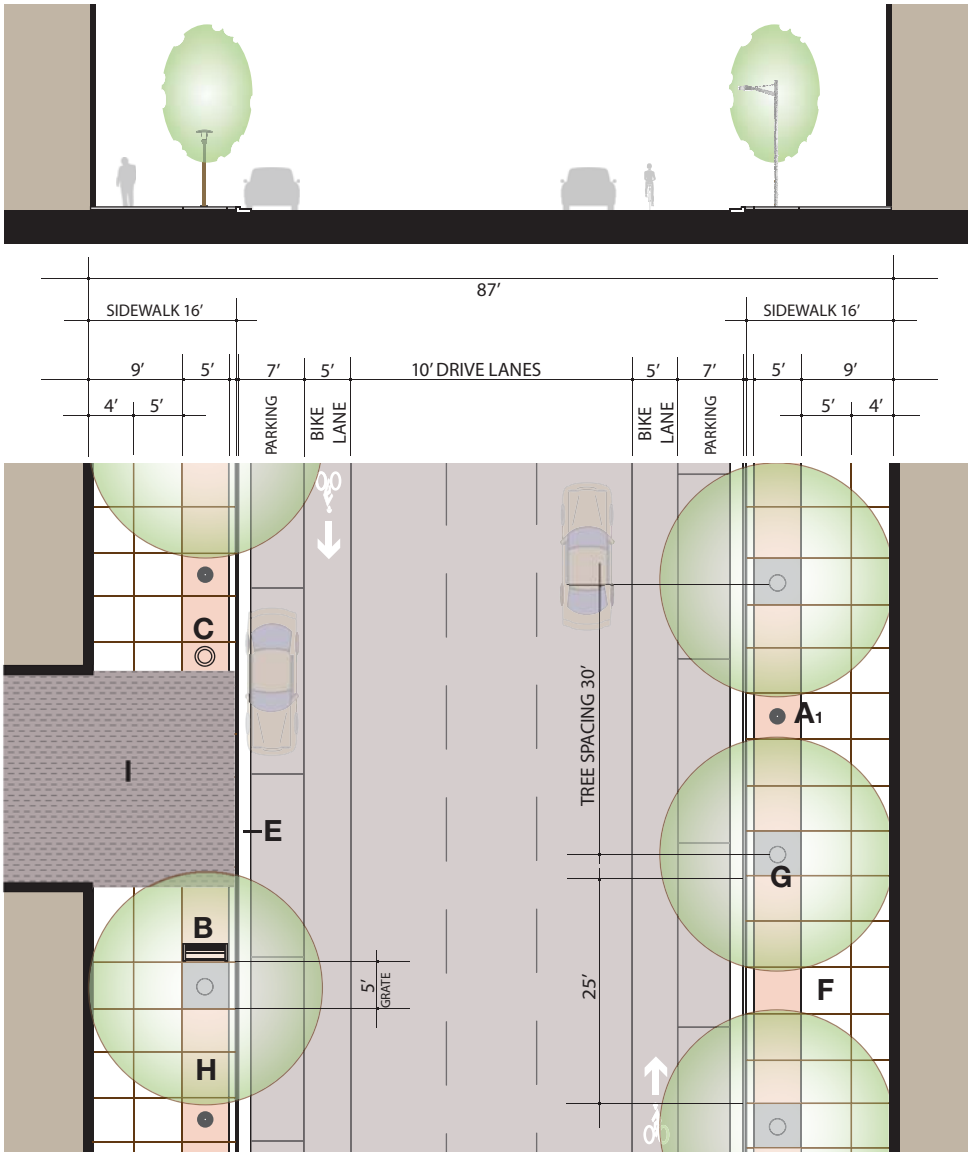
A1 Pedestrian scale lighting fixtures. Vocablary A (Vocabulary B at Montview)
A2 Vehicular scale lighting fixtures at intersections. Vocablary A
B A variety of public seating conditions and configuration between planters.
C Trash receptable surface mounted at edge of paving. One per building entry
D Embedded bike racks. Two per building enterance.
E 2' wide cast in place concrete curb and gutter.
F Cast in place concrete with medium broom finish. Saw cut scoring at 9' intervals.
G Infiltration, storm water planter.
H Continuous infiltration, storm water planter (w/ 3'W breaks for parking access).
I Porous plaza paving.

Figure II.3A - Green Street (Uvalda as mirror image of above)



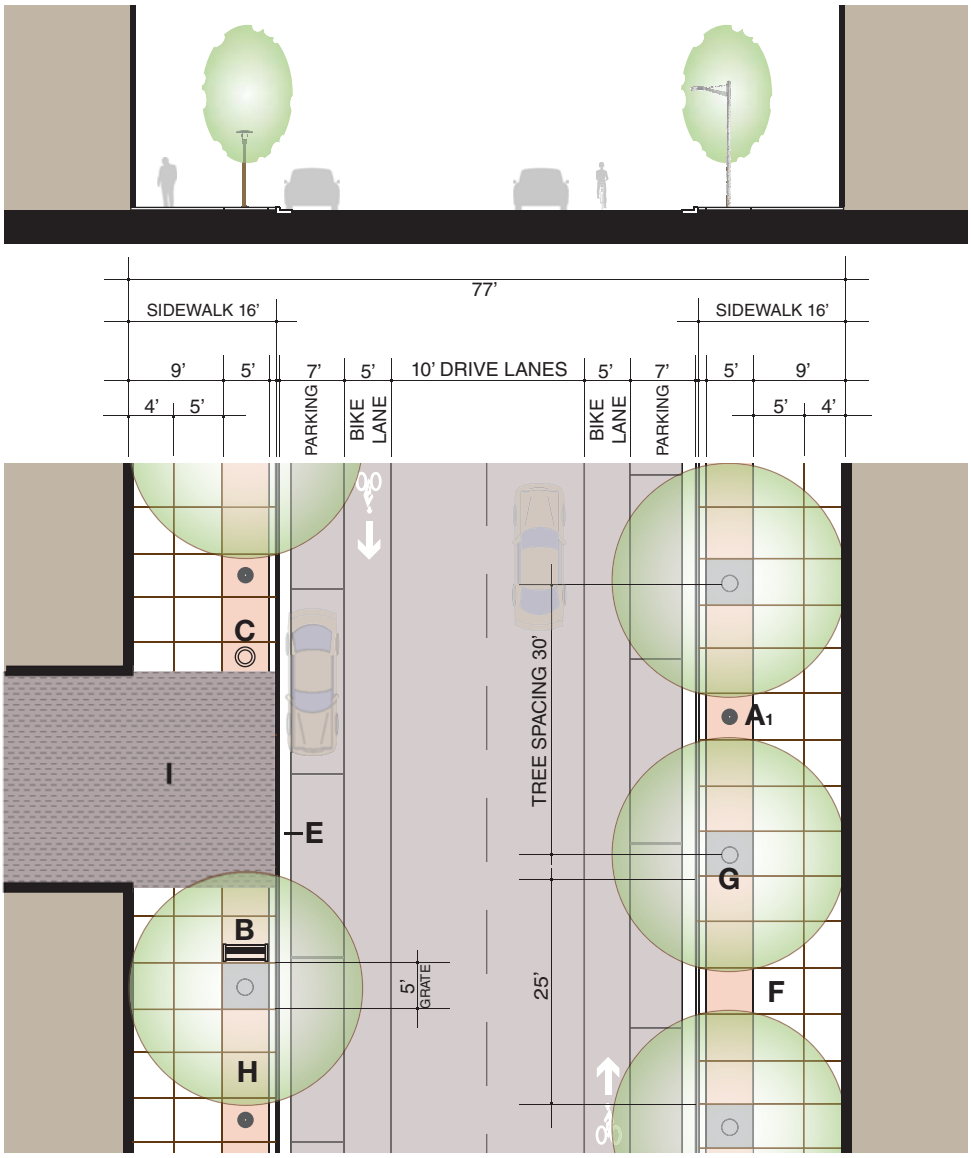
A1 Pedestrian scale lighting fixtures. Vocablary A
A2 Vehicular scale lighting fixtures. Vocablary A
B Bench within crosswalk paving zone. One per building entry.
C Trash receptable surface mounted at edge of paving. One per building entry
D 2' wide cast in place concrete curb and gutter.
E Cast in place concrete with medium broom finish. Saw cut scoring at 10' intervals.
F Raised Planter: Perenial plantings
G Illuminated bollards.
I Special paving at pedestrian crosswalks. Tactile bands at roadway borders.
J Ornamental trees at 20' O.C along median with perenial plantings throughout.

Figure II.3B - 17th Avenue (looking east)



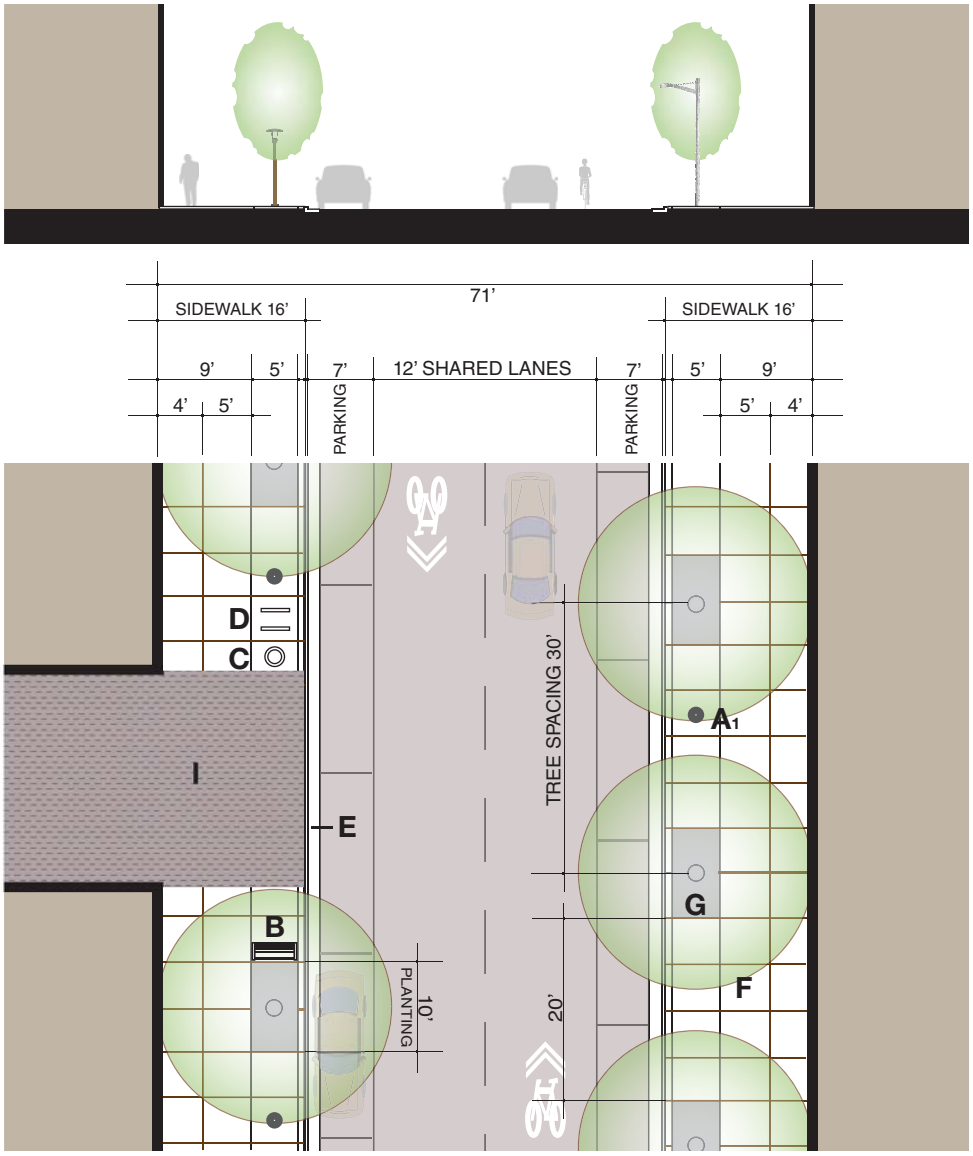
A1 Pedestrian scale lighting fixtures. Vocablary B.
A2 Vehicular scale lighting fixtures at intersections. Vocablary B.
B Bench to back planting bed. One per building entry.
C Trash receptable surface mounted at edge of paving. One per building entry
D Bike Racks not included.
E 2' wide cast in place concrete curb and gutter.
F Cast in place concrete with medium broom finish. Saw cut scoring at 5' intervals.
G Tree Grate: Deciduous trees in a 5'x5' tree grate.
H Colored/textured concrete.
I Special paving at primary building enterances. Pattern and materials reflective of building enterance are encouraged.

Figure II.3C - Montview Boulevard



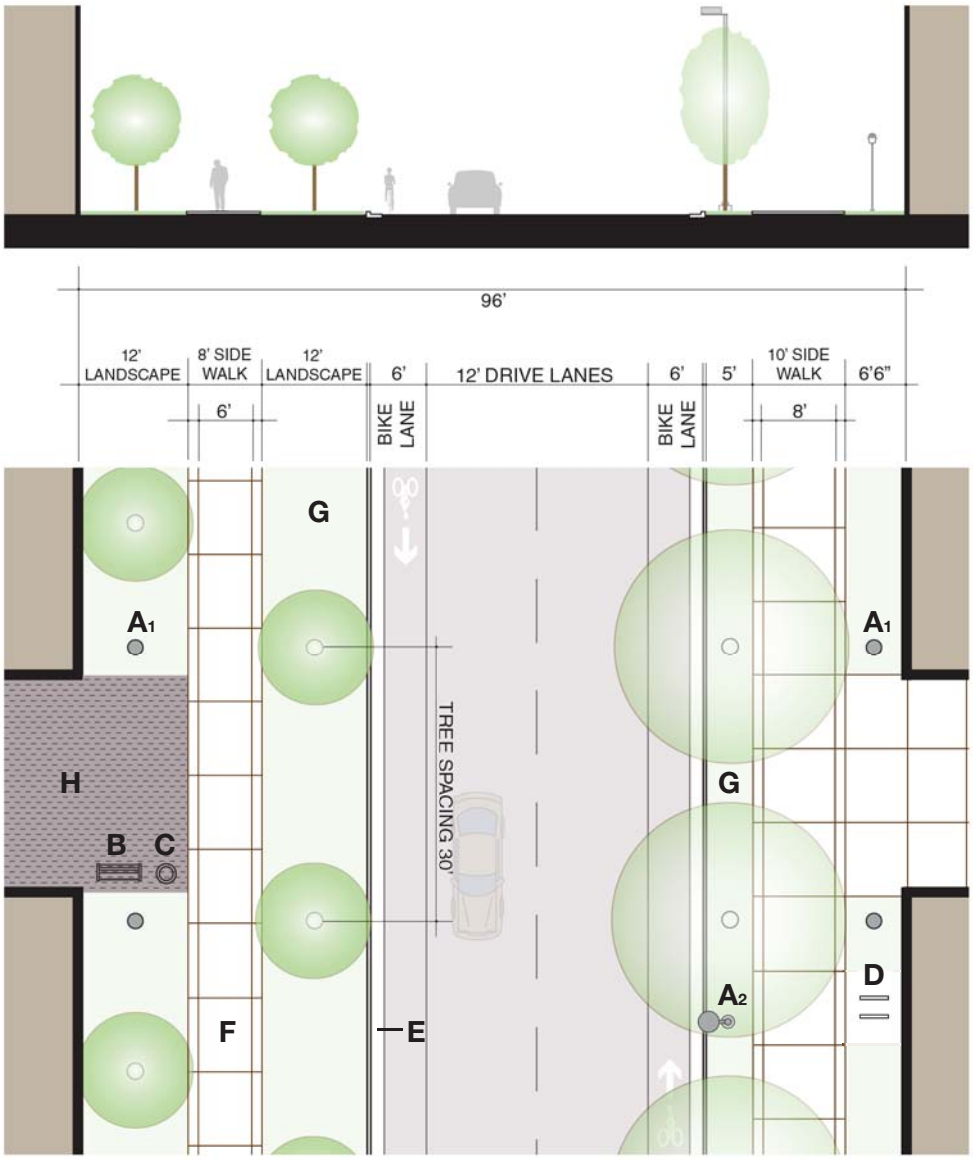
A1 Pedestrian scale lighting fixtures. Vocablary B.
A2 Vehicular scale lighting fixtures at intersections. Vocablary B.
B Bench to back planting bed. One per building entry.
C Trash receptable surface mounted at edge of paving. One per building entry
D Bike Racks not included.
E 2' wide cast in place concrete curb and gutter.
F Cast in place concrete with medium broom finish. Saw cut scoring at 5' intervals.
G Tree Grate: Deciduous trees in a 5'x5' tree grate.
H Colored/textured concrete.
I Special paving at primary building enterances. Pattern and materials reflective of building enterance are encouraged.

Figure II.3D - Primary Street



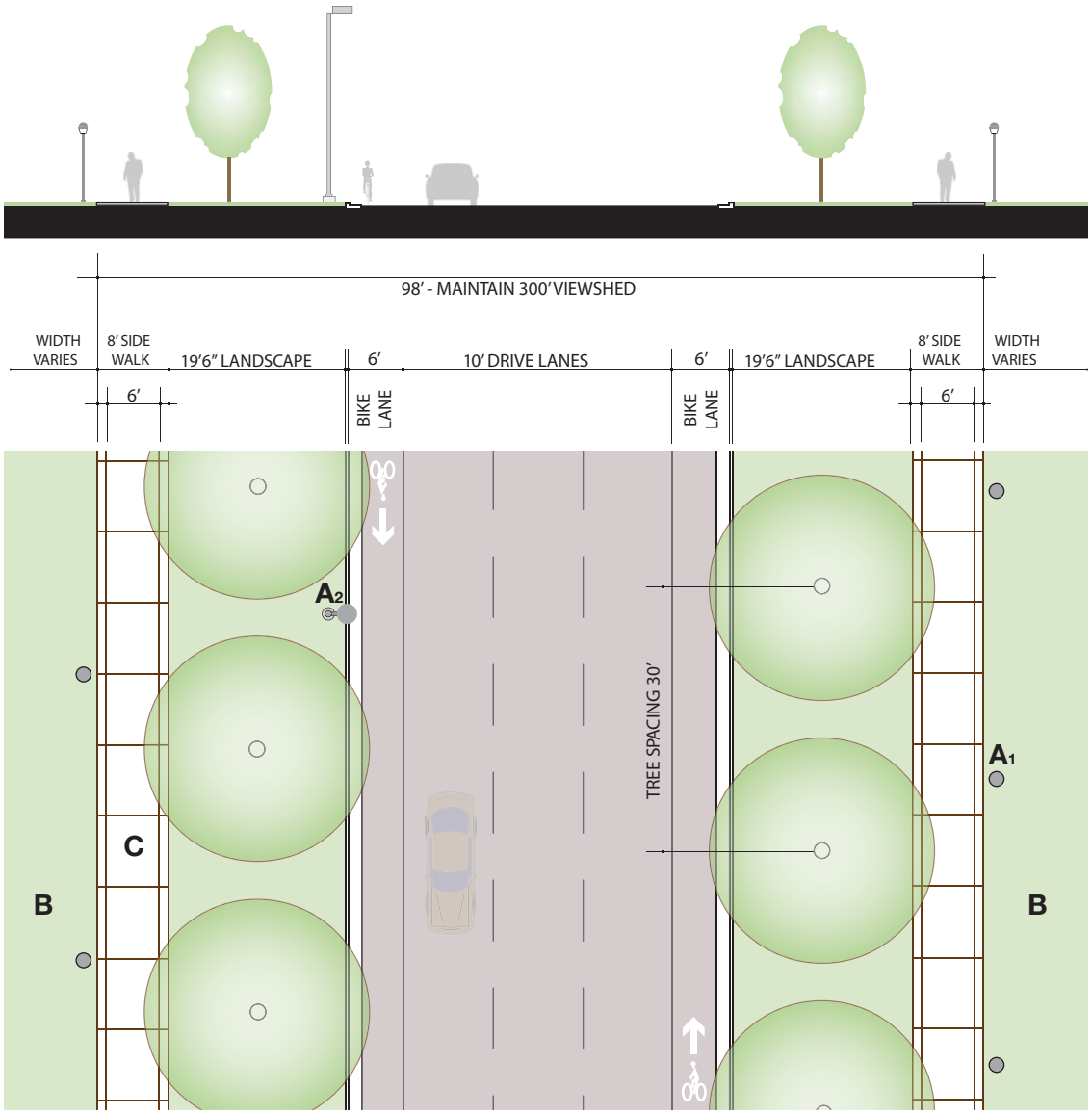
A1 Pedestrian scale lighting fixtures. Vocablary B.
A2 Vehicular scale lighting fixtures at intersections. Vocablary B.
B Bench to back planting bed. One per building entry.
C Trash receptable surface mounted at edge of paving. One per building entry
D Embedded bike rack, centered on scoring pattern. Two per building entry.
E 2' wide cast in place concrete curb and gutter.
F Cast in place concrete with medium broom finish. Saw cut scoring at 5' intervals.
G Planting Bed: Deciduous trees in 5'x10' tree well w/ landscape plantings.
H Colored/textured concrete not included.
I Special paving at primary building enterances. Pattern and materials reflective of building enterance are encouraged.

Figure II.3E - Secondary Street



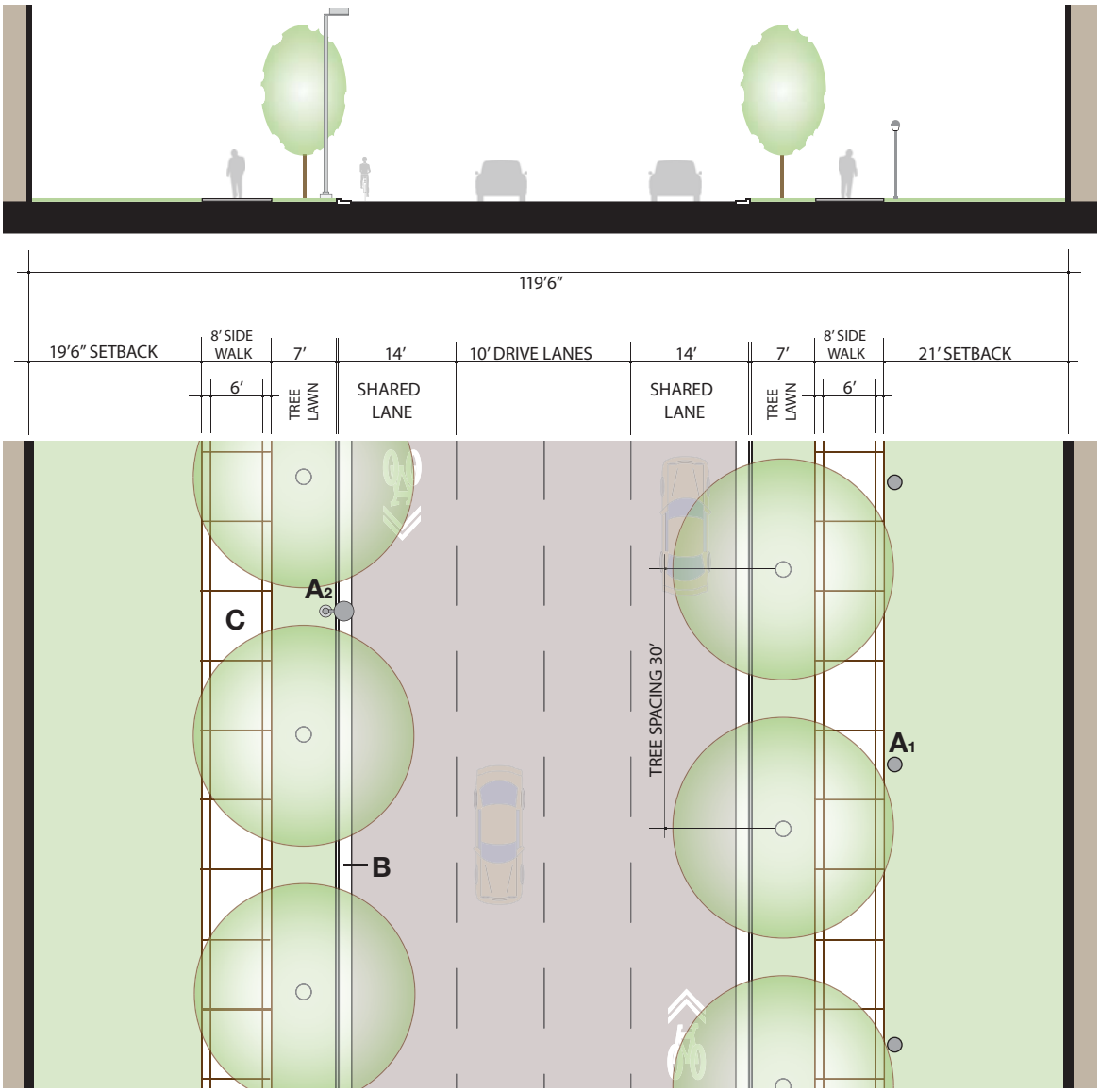
A1 Pedestrian scale lighting fixtures. Vocablary A
A2 Vehicular scale lighting fixtures. Vocablary A
B Bench to back planting bed. One per building entry.
C Trash receptable surface mounted at edge of paving. One per building entry
D Embedded bike rack, centered on scoring pattern. Two per building entry.
E 2' wide cast in place concrete curb and gutter.
F Cast in place concrete with medium broom finish. Saw cut scoring at 5' intervals.
G Continuous tree lawn.
H Special paving at primary building enterances. Pattern and materials reflective of building enterance are encouraged.

Figure II.3F - 19th Avenue (looking east)



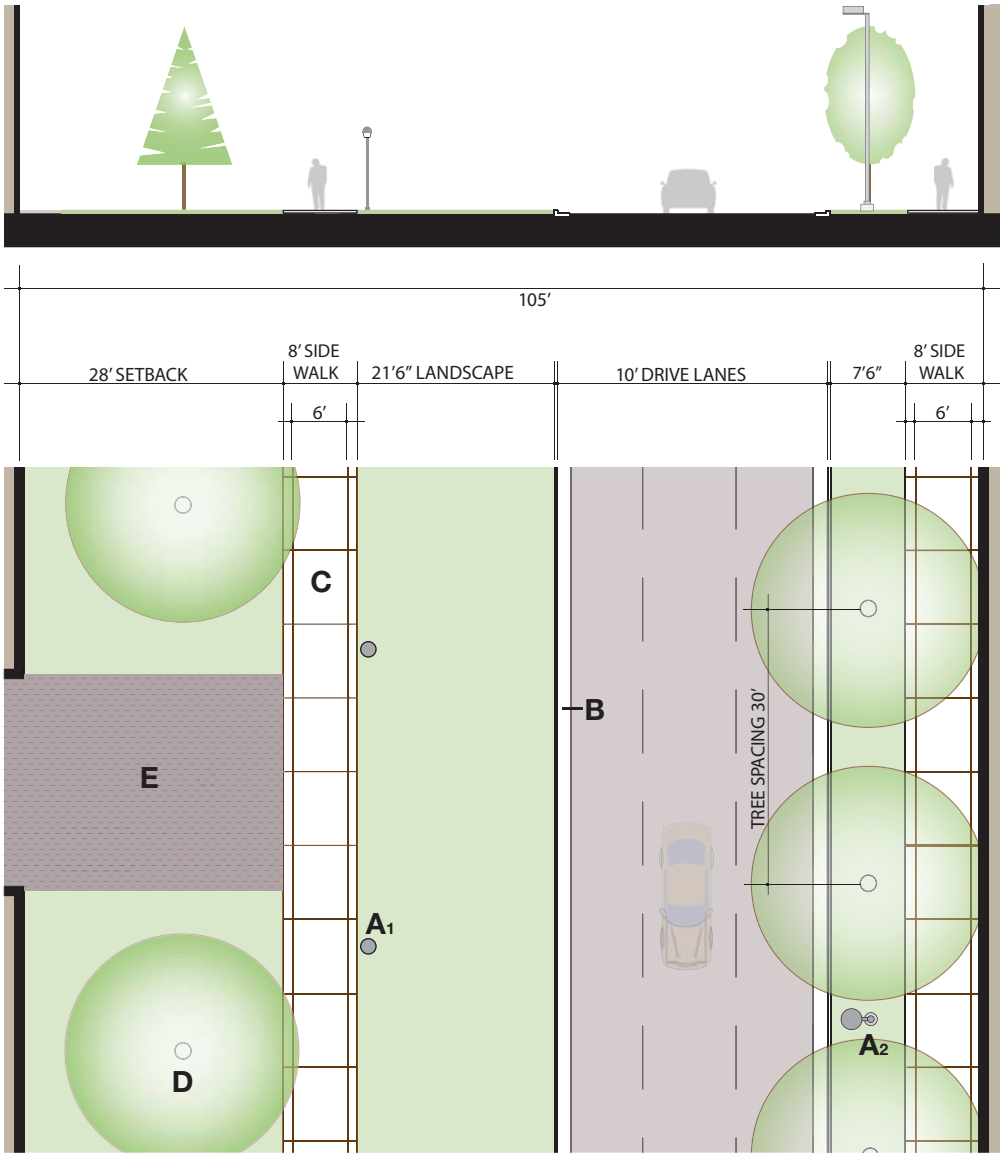
A1 Pedestrian scale lighting fixtures. Vocablary A
A2 Vehicular scale lighting fixtures. Vocablary A
B Naturalistic prairie landscape
F Cast in place concrete with medium broom finish. Saw cut scoring at 8' intervals.

Figure II.3G - Aurora Court (looking north)



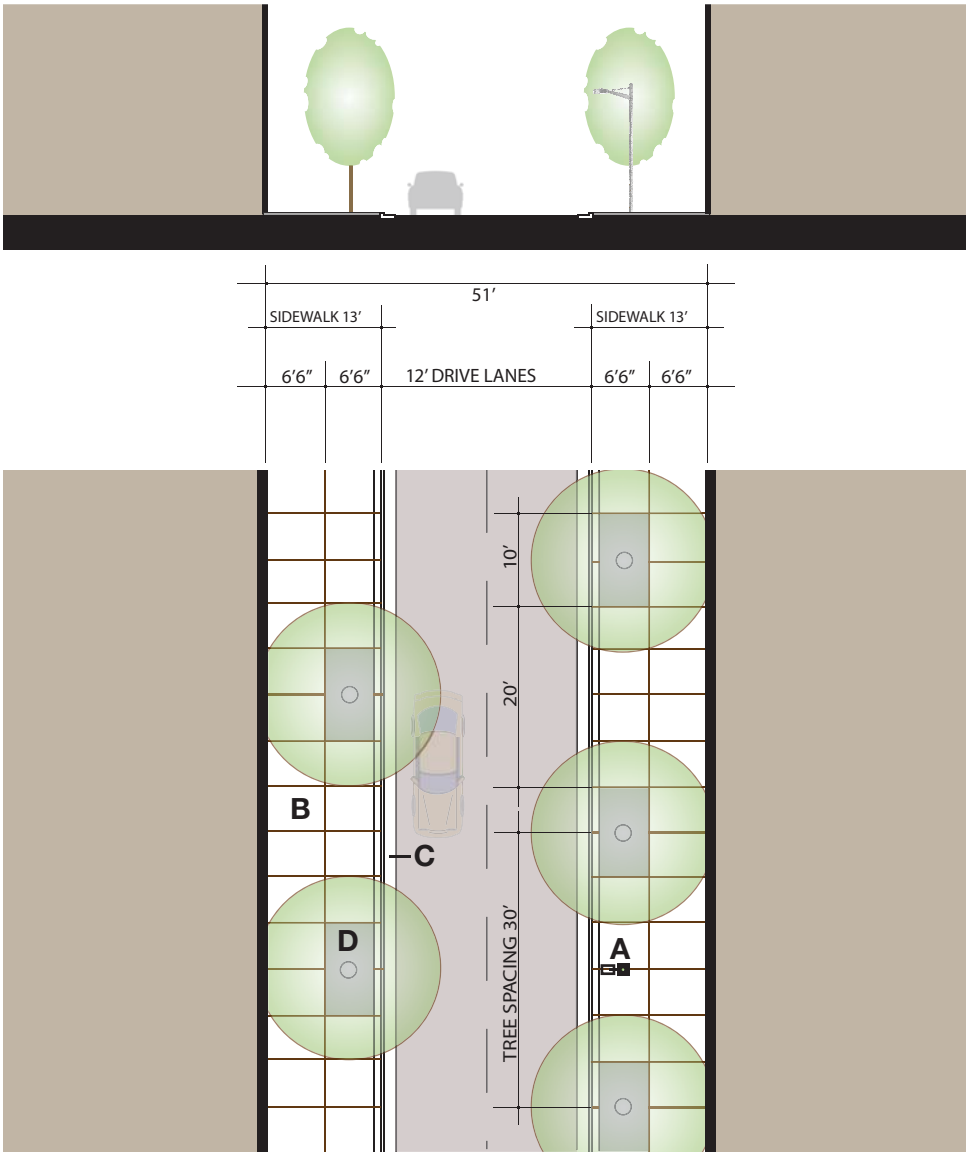
A1 Pedestrian scale lighting fixtures. Vocablary A
A2 Vehicular scale lighting fixtures. Vocablary A
B 2' wide cast in place concrete curb and gutter.
C Cast in place concrete with medium broom finish. Saw cut scoring at 8' intervals.

Figure II.3H - Victor Street (looking north)



A1 Pedestrian scale lighting fixtures. Vocablary A
A2 Vehicular scale lighting fixtures. Vocablary A
B 2' wide cast in place concrete curb and gutter.
C Cast in place concrete with medium broom finish. Saw cut scoring at 8' intervals.
D Exiting mature conifers to remain
E Special paving at primary building enterances. Pattern and materials reflective of building enterance are encouraged.

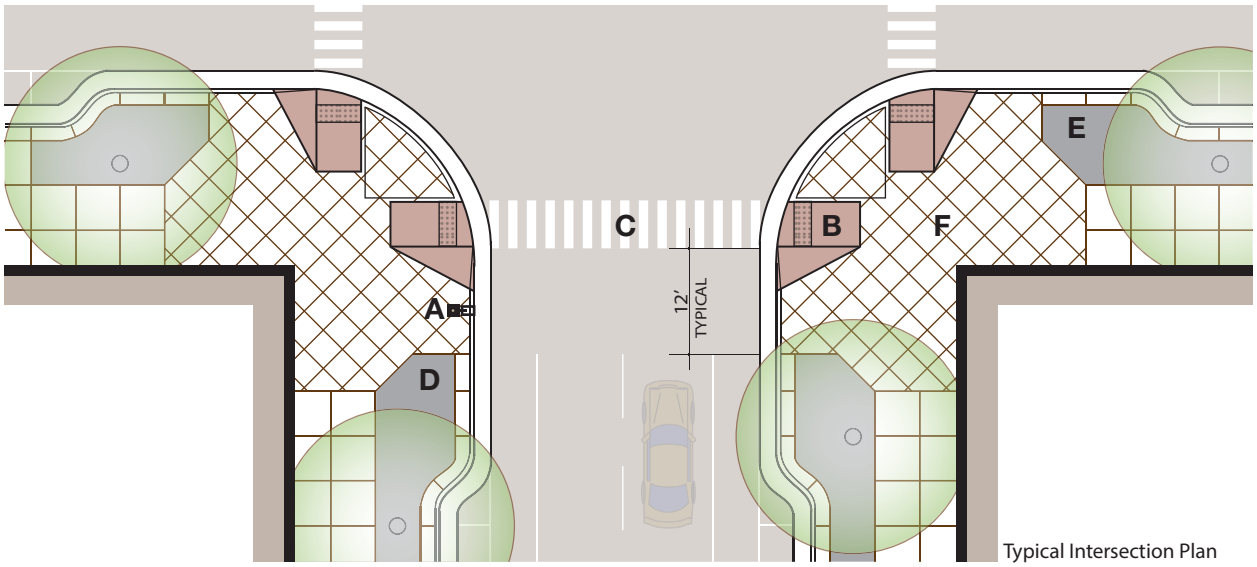
Figure II.3I - Wheeling Street (looking north)



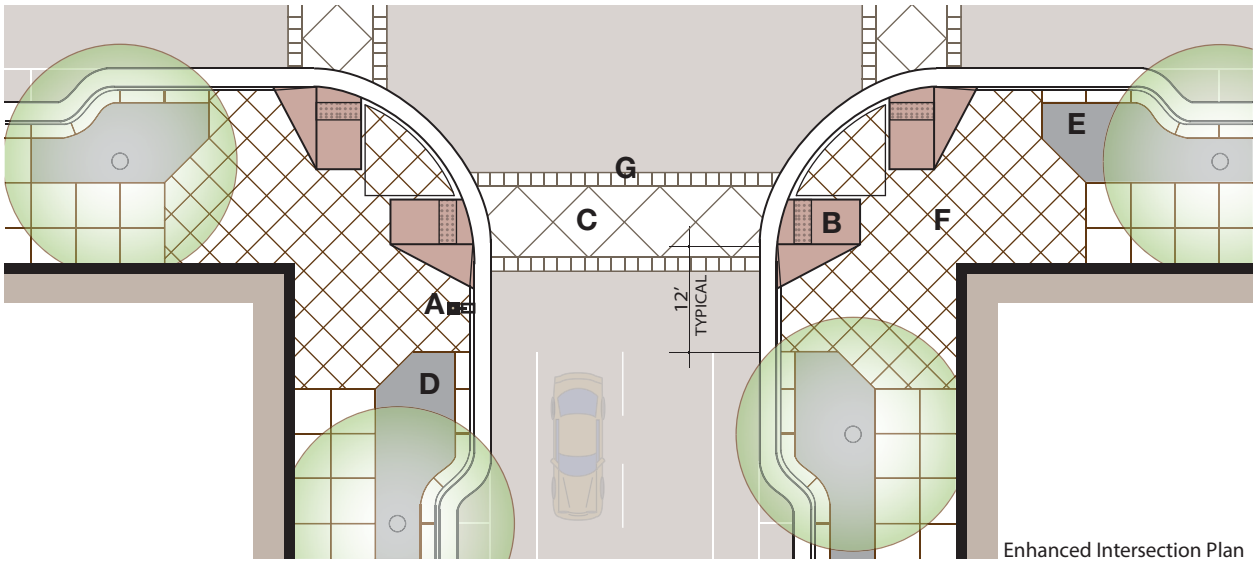
A Vehicular scale lighting fixtures. Vocablary B.
B Cast in place concrete with medium broom finish. Saw cut scoring at 5' intervals.
C 2' wide cast in place concrete curb and gutter.
D Planting Bed: Deciduous trees in 5'x10' tree well w/ landscape plantings.

Trash receptacles - one shall be located at parking garage pedestrian entry and exit and at secondary building enterances.

Figure II.3J - Tertiary Way



Typical Intersection Plan



Enhanced Intersection Plan

A Vehicular scale lighting fixtures.

B City of Aurora Standard handicap ramp.

C Typical: City of Aurora Standard crosswalk stripping.
Enhanced: 8' wide concrete crosswalk, tooled scoring at 4' x 4' intervals at a 45 degree angle to the road centerline.

D Planting bed. Edge of bed should stop 12' from ramp.

E Planting bed edge at 45 degree angle to match scoring.

F Cast in place concrete with medium broom finish. Scoring at 45 degrees, saw cut at 3' x 3' intervals.

G Enhanced: 18" wide concrete band, tooled scoring at 18" intervals.

Figure II.3K - Intersections

II.4 OPEN SPACE

Open spaces on campus should contribute to a sense of "wellness" and "healing". Landscaping should visually unify the campus while simultaneously providing interest. It should enhance comfort and provide shelter for people using exterior spaces. By creating unique qualities, patterns, and character with the landscape, it can serve as a way-finding mechanism by helping to orient and direct individuals to their destination. Open spaces are to be planned and designed to contribute to energy conservation and, as a consequence, lower utility costs. Landscapes should respond to sun and climate in such a way as to create distinctive spaces. They should enhance the image of the campus.

The campus is to be a safe and enjoyable environment. For security reasons, shrubs and other site elements that obscure views are to be used sparingly. The highest levels of illumination are to be at building entrances and at entrances to exterior spaces, with the next highest level of lighting occurring around the perimeter of open spaces. Such a lighting concept creates a sense of safety and well-being. To further encourage the use of exterior spaces, furnishings are to be ample, but carefully located to relate to views, programmatic needs, and pedestrian and vehicular circulation. Fixed seating located around the edges of exterior spaces provides views to the center as well as amenities to passing pedestrian traffic. Some flexibility should be designed into courtyard seating areas to allow users to manipulate the space to accommodate a variety of gathering conditions.

Open spaces are to be designed to encourage multiple uses. Landscaping, site features, and functions that distract from this flexibility are strongly discouraged. Grading design and the placement of trees, lighting, and furnishing are to accommodate a variety of short and long-term uses. Appropriate design minimizes hard surfaces, barriers, and other obstacles within large open spaces that compromise flexibility. Vehicular access, services areas, storage, parking, and other uses that conflict with pedestrian enjoyment are also to be minimized or landscaping is to be used to mitigate such conflicts. Landscaping is to enhance building facades and building entrances.

Campus edges, corners, and entrances are critical in establishing a positive first impression and a memorable sense of place. Landscaping along edges is to be simple but elegant, with emphasis on major visitor's entrances and prominent corners. To relate the campus to the surrounding community, the landscaping of campus edges is to compliment edges of surrounding properties including the native landscape of nearby Sand and Tollgate Creeks as well as General's Park.

The following is a list of considerations that should be accounted for in the design of any open space planned for the campus regardless of where it falls within the defined character zones:

- The ability to allow movement through the space is an important design element and should not adversely impact the desired primary planned activity.
- The relationship between the planned open scape and the surrounding buildings and significant landscape features should be the most important consideration in the design.
- Stairs should be minimized.
- Views to and from the space should be accommodated.
- Texture of surfaces should be used to define spaces and suggest intended activity.
- Sculpture or other "hard" elements should be interactive and stimulating.
- Seating arrangements should consider a variety of activities – intimate discussions, people watching, quiet study, group gathering, etc.
- The design should consider the micro-climate of the area including sun exposure and seasonal conditions.
- Spaces should be strategically lite and attractive in the evening as well as in daylight.
- In larger spaces, power should be provided for the occasional outdoor event.
- An appropriate number of trash and recycling bins should be provided in strategic places around the perimeter.
- Slopes of paved plazas or other open gathering areas should be 1% minimum for drainage but not more than 2% for accessibility.

Site Programs

Recreation

The physical layout of the campus should be designed to promote health and wellness for a diversity of users and physical capabilities. The intent is to encourage as much activity as possible, in as many spaces as possible. Therefore, open spaces must be designed for flexibility; establishing both formal and informal spaces to encourage a variety of interactions amongst students, faculty and staff.

Recreation spaces should also compliment the functions of surrounding buildings.

In order to accommodate the diversity of users on the campus, the following design criteria has been established.

- Formal recreation shall continue to occur at the Parade Grounds.
- Informal recreation is currently centered within the Academic Quadrangle. It is anticipated that informal recreation could similarly occur within a redesigned Campus Green.
- Jogging paths wrap the campus and connect with other site-wide and regional trails.
- Trees are to be planted at the edges of turfed areas to delineate open areas to be used for informal recreation.

Commencement | Convocation

Several of the open spaces established on campus can be used for formal events such as commencements and convocations. The Anschutz Medical Campus has developed a variety of spaces to allow the entire academic community to gather in one area for commencement and to then disperse to other more intimate spaces for convocations.

While establishing the commencement plan, several principles have been established:

- Spaces have been identified where commencement for all schools may occur with enough open area to accommodate faculty, graduates, friends and family (3,000 people). They are the Education Quadrangle and potentially within a redesigned Campus Green.
- A hierarchy of spaces have been planned where convocations of a variety of sizes can occur simultaneously.
- Walking distances between commencement and convocations spaces have been minimized.
- Spaces have been oriented to take advantage of topography (slopes no greater than 3%) and solar angle: Stages should face to the south or to the east.

Figure II.4 - Open Space | Site Programs

II.5 WALKWAYS

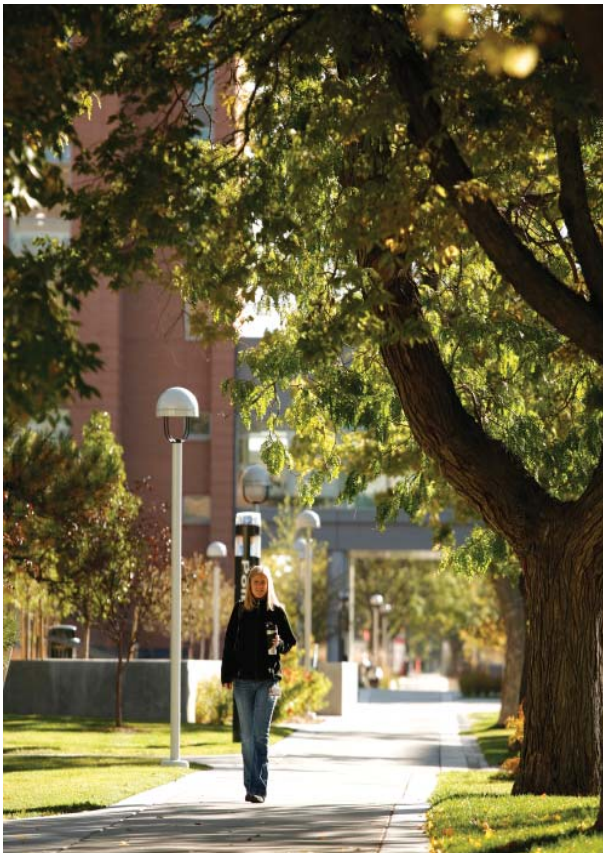
Pedestrian walkways currently constitute the major circulation network within the C1 | Academic Village district and can also be found within the C3 | Hospital district.

Walkways should enhance the pedestrian experience providing safe, convenient, and enjoyable passage throughout the campus. They should generally follow the natural "desire line" between destinations.

All walkways should be wheelchair accessible however the use of other alternative modes of transportation, such as bicycles, roller blades, etc., are discouraged from using the walkway network. These form of transport are encouraged to travel by way of dedicated lanes made available to them on the majority of campus streets.

Primary Walkways

- A primary walkway will typically follow a direct line between two major destinations. These pathways will often lead to the entrance of major buildings, to and from heavily used open spaces, transportation hubs, large parking lots or structures, or - in the case of promenades - form an organizational spine linking to other pathways.
- The width of any walkway should be evaluated in terms of the amount of traffic to be accommodated. Primary pathways should be 10'-0" in width. In no case should a major path be less than 8'-0" in width.
- A walkway may need to double as a fire lane. Rather than widening the paved area, the use of turf reinforcing systems on one or both sides of the walkway is encouraged at these locations.
- The intersection of primary walkways should emphasize and accommodate seating areas, lighting, special plantings, and way-finding elements.
- Primary walkways should be made of concrete. They should be designed to be sympathetic with other major campus paths to maintain a comprehensive whole.
- Primary walkways are to be handicap assessable and stairs should be avoided.
- Trash and recycling bins should be located along the path at regular intervals and major intersections.
- Walkways should be well lit and encourage a feeling of safety and security. This needs to be accommodated in a manner that consistent with the Universities' commitment to light pollution reduction. Blue phones (emergency phones) should be installed at strategic locations along major paths.
- Walkways should merge when approaching streets to reduce the number of crossings to a minimum. When a primary walkways cross vehicular roadways, it should always be at right angle with and open view of the street.



The Anschutz Medical campus Art Walk provides the central spine of our pedestrian walkway network.

Secondary Walkways

Secondary walkways accommodate fewer pedestrians than primary walkways. They might connect a major destination with a minor destination, or lead to a primary walkway or to a secondary entrance to a building.

Attempts should be made to reduce the number of secondary walkways whenever possible. The location of each walkway should be carefully evaluated to maximize its efficiency in allowing pedestrians to reach their desired destinations.

- The preferred width of a secondary walkway is 8'-0". In some limited cases the walk may be reduced to 6'-0" in width. It should be assumed that most walkways will require plowing by a truck having a min. 6' wide plow blade.

- Secondary walkways should follow desire lines to their destination. In cases where the desire line is not feasible or appropriate, an alternate route can be provided with landscaping features to encourage the use of the alternate route.

- Secondary walkways will accommodate less pedestrian traffic than primary walkways and the surrounding landscape should accommodate smaller, more intimately scaled features.

- Paths should be well lite and encourage a feeling of safety and security. Bollard lighting or pedestrian scale light poles should be utilized. Lighting needs to be accommodated in a manner consistent with the universities' commitment to light pollution reduction.

- Stairs should be discouraged as part of the secondary walkway system.

- Secondary walkways should accommodate trash and recycling bins near building entrances.

A quiet place to rest and reflect along a secondary walkway.

Walkways should follow "desire lines" between destinations.

II.6 PARKING

The experience of arriving to and departing from campus by car is to be a positive experience. It is encouraged that parking be located towards the perimeter of the campus and accessed primarily by streets contiguous with off-site roadways thus reducing traffic on interior roads.

On-street parking is to be incorporated into the design of streetscapes throughout the Urban Campus district as well as along the 17th Avenue - Translational Corridor.

As facilities are developed over the new 10 years, the reservoir of existing parking will be diminished as new roadways are constructed and surface parking areas are claimed as sites for new development. As demand continues to increase it may become necessary, where programmatically appropriate, to construct parking structures and/or provide parking as an integral component of new buildings.

- Entryways and vehicular circulation should be accessed with safe viewing angles for oncoming traffic. Clear signage should be provided at each main entrance.
- Lots should have the appropriate number of service and handicapped spaces to accommodate the surrounding buildings.
- Pedestrian access to and from lots should be carefully considered to minimize vehicular-pedestrian conflicts.

Surface Parking

- Concrete curb should be installed along the edge of all lots.
- Consideration should be given to the use of natural drainage systems with porous surfaces to maintain local groundwater.
- A minimum of 5% of surface parking area should be vegetative landscaping. Landscaping should be used to break up parking rows that exceed 15 spaces. Terminal islands should be placed at the end of every row.
- Surface lots larger than 120 spaces should have median rows at least ten feet wide and occurring at least every three rows.
- Rows at surface lots should be oriented perpendicular to building facades whenever possible.
- Each surface lot should minimize the number of curb cuts in order to maintain the continuous streetscape character of adjacent streets.
- Lots should be appropriately lit for safety. Lights should be directional to reduce glare and limit light pollution.
- Where parking lots border sidewalks or campus roads, the edges of lots should be landscaped to provide a min. 5’ wide buffer zone with vegetative screening.
- The layout of surface parking lots should allow for efficient plowing and provide locations to store snow.

Sustainable Strategies for Parking

The following strategies should be considered for all future and redesigned surface lot projects:

- Minimize the dimensions of parking spaces. Current spaces on campus are approx. 8’-6” wide by 18’ in length with drive aisle being approx. 23’ in width. Consideration should be given to future parking being designed with 45-degree double parking bays with line-way drive aisles allowing for the potential reduction in hardscape lot areas by 25%.
- The current university ratio of population to provided parking space is 2.3 to 1. The National average for Higher Education institutions throughout the US is currently 2.8 to 1. A reduction of spaces down to the National average would result in the elimination of approximately 2,300 spaces from our current 2013 inventory.
- Pervious concrete, pervious pavers, grass paving blocks and gravel pave systems should be considered as alternatives that provide environmental benefits over asphalt.
- Bio-swales, infiltration basins and rain gardens should be considered to help reduce runoff and instead allow water to recharge into the soil and area groundwater.
- High albedo surfaces should be considered (with solar reflectance rates of 25% or higher).
- Maximize tree canopies: The environmental benefits of having trees in parking areas include reduced

II.7 ENVIRONMENTAL CONDITIONS

Solar Orientation

Appropriate solar orientation in Auroras high plains climate, with its lack of humidity and moderate temperatures, is a critical consideration in the creation of comfortable interior and exterior spaces.

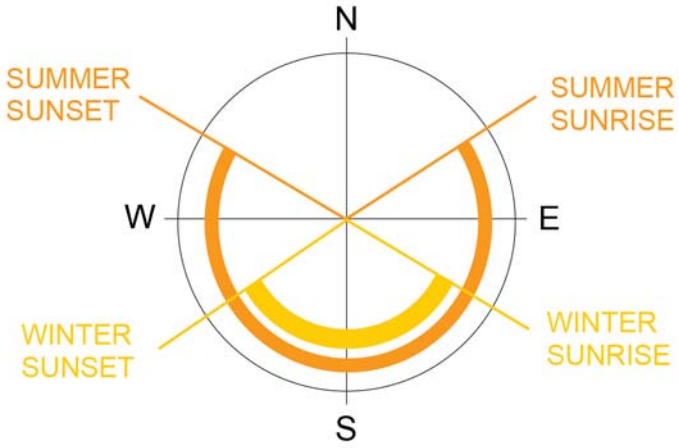
Exterior spaces oriented to receive winter sun allow some outdoor use during most days of the year. In Colorado, snow typically melts quickly in sunny areas. Melting snow may result in greater than average amounts of icing in shading areas.

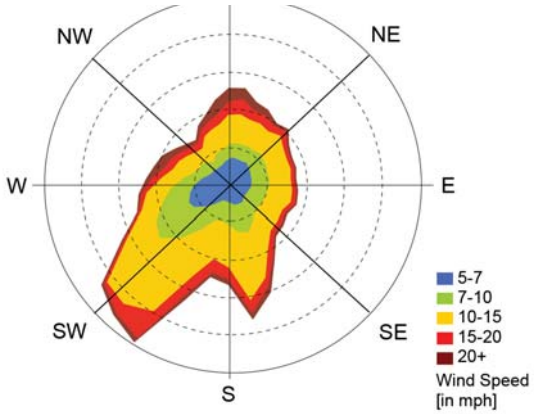
Pedestrian paths, building entries and outdoor areas should be configured to have their greatest exposure from the south, thereby encouraging daylight and snow melting to occur naturally. Larger more formally defined outdoor spaces should attempt to allow solar penetration into the southern corners and edges of outdoor areas. Buildings defining southern perimeters of open spaces should consider architectural setbacks at upper-levels to allow for the maximum amount of sunlight to reach as deep as possible into shaded areas.

The use of protected sidewalks and attached or integral building arcades should be considered in the design of buildings that are located on the south side of major open spaces or streets and therefore would protect pedestrian circulation routes.

Wind

Warm (Chinook) winds and cool summer breezes air generally from the southwest. Cold winter winds are predominately from the north and northwest.





II.8 SITE DRAINAGE

Site drainage must accommodate efficient movement of surface water across pavement, turf or planting beds towards an inlet or drainage system; or allow subsurface water movement through the soil to a drainage system.

An efficient stormwater drainage system is to be maintained.

- Stormwater management is subject to the recommendations of the Fitzsimons Redevelopment Authority.
- Sites to drain into site wide detention/retention ponds
- Grading for each project to meet existing grades at project boundaries.
- Building location and site planning to respect existing grades at project boundaries.
- Avoid adverse impact of stormwater on adjacent parcels.
- On site stormwater retention and treatment strategies are encourage for all new developments regardless of the district in which they occur.
- Utilization of surface water runoff for supplemental irrigation is encouraged.

Stormwater drainage areas are to be attractive and easily maintainable.

- Stormwater drainage areas should be located and shaped for ease of maintenance.
- Landscape for detention/retention areas should be functionally appropriate.
- All sites shall slope to drain.
- Sites should drain away from sidewalks and plazas.
- The use of impervious materials should be minimized.

Sites should be graded to appear that natural contours have not been disturbed.

- Minimize grading.
- Berms are to have gradual, natural appearing undulating slopes.
- Avoid slopes greater than 2 to 1
- Streets and surface parking should closely match with topography.

Lawns and shrub beds should be sloped for proper drainage.

- Lawn should be sloped between 1.5% and 25%
- Minimum 2% surface slopes should be provided in planting beds relying on surface drainage.
- Minimum 3% surface slope in turf areas that rely on surface runoff.
- Embankments greater than 25% should be planted with shrubs or ground cover.

Subsurface drainage should be accommodated in raised planters and tree pits.

- Provide subsurface drainage in raised planters where a 2% slope is not possible.
- Subsurface drainage should be provided beneath all tree grates and trees in paved areas.
- Provide subsurface drainage where landscaping abuts building walls.

II.9 HEIGHTS OF STRUCTURES

Building height should be sympathetic to the scale of adjacent structures and to the streets and open spaces surrounding them. In cases where buildings must be significantly taller than surrounding structures, the use of set-backs should be considered for portions of the building above the height of adjacent structures.

Care should be taken to limit the casting of shadows on open spaces or public ways. The potential for ice and/or snow accumulation on sides of buildings should be analyzed as part any design and appropriately mitigated.

In general, future buildings should be constructed between 4 and 6 stories in height. The 4 story minimum is intended to ensure adequate stewardship of campus resources, understanding that our land is finite and that this minimum level of density is necessary to avoid future sprawl. The 6 story maximum is set to encourage safety and economy in construction. The 2009 edition of the International Building Code defines high-rise construction as any building with an occupied floor located more than 75 feet above the level of fire department access. The 6 story limit is intended to avoid having to respond to the additional requirements and financial implications associated with high-rise construction.

In instances where program, site constrains, or other factors require a structure greater than 6 stories in height, an Environmental Impact report (EIR) should be undertaken to evaluate the impact of the structure on vehicular and pedestrian circulation, parking, utility infrastructure, views from existing and future structures, natural light, wind, noise, and air quality. The Character Guideline tables include the upper limits of construction for each of the Character Districts with EIR approval.

Guidelines and procedures to assist in the preparation of an EIR report can be obtained from the University of Colorado Anschutz Medical Campus, Office of Institutional Planning web site:

http://www.ucdenver.edu/about/departments/InstitutionalPlanning/Pages/AboutUs.aspx

The orientation of Research Towers 1 & 2 allow sunlight into the Research Common throughout the year.

II.10 BUILDING ENTRANCES

Major public entrances to buildings should be welcoming, easily identifiable, and accessible. They should be located off of primary streets or primary walkways at major open spaces. Building entrances and lobby spaces are gathering places for those using the building and should be designed to encourage interaction. They should be readily visible, prominent and contribute to the life and vitality of the adjacent streetscape or open space.

It is highly encouraged that the activities occurring within buildings, as appropriate, be visible from the exterior. Windows should be placed to maximize the availability of natural light to the interior as well as views outward.

- The main entrance to any building should be handicap accessible with direct access to an elevator provided near the lobby.
- Building identification signage should be located near the main entrance of the building in view of the closest major pathway.
- Landscaped areas should be located near the building entrance as an amenity to building occupants during lunch breaks, between classes, etc.
- Appropriately scaled landscaping should frame the building and lead to the entrance doors.
- Service entrances should not be located in view of the main entrance. Locate service areas near tertiary or secondary entrances.

The Health and Wellness Center presents a clearly articulated entry condition along an activated streetscape.

- Bicycle parking should not be located adjacent to, or should be shielded from view of, primary building entrances. Locate bike racks near secondary entrances.
- Outdoor transition space, such as porte cochers and canopies, should be provided for protection from snow and rain. Their design should relate to the materials, scale, and articulations used on the buildings exterior and have some relation to those of the interior lobby.

The University of Colorado Hospital provides a welcoming entry sequence for both vehicles and pedestrians.

II.11 LIGHTING

Lighting shall be designed to enhance the pedestrian experience and provide an element of continuity throughout the site. Sufficient light levels shall be provided for pedestrian and vehicular safety and comfort. Over-lighting shall be avoided with upward facing luminaires prohibited and light trespass minimized.

Fixture placement shall reinforce the special and conceptual definition of open spaces. Lighting should be used to help define spaces and to allow for people to find their way. Lighting should highlight building entries and should enhance the pedestrian experience by offering visual interest. Entries shall be defined by lighting that balances with interior lobby illumination creating a sense of visual hierarchy. Facades may be softly illuminated at the top to provide a subtle skyline presence. Additional lighting may also be provided to highlight or accent particular architectural details and open spaces when deemed appropriate.

Lighting will play a key role in producing a campus environment that is safe and enjoyable. Orientation is enhanced by lighting destinations such as building and parking area entrances. Lighting of other landscape elements, entry walls and signs can further assist orientation and way-finding.

In most instances, pedestrian and vehicles will share a roadway. Lighting must be designed to honor the safety and security of users and to distinguish various areas of the campus as vehicular, mix of vehicular and pedestrian, and pedestrian only.

In all cases, the campus will offer safe and secure lighting for pedestrians at night. Lighting will be designed to minimize glare and potential light pollution.

Vehicular Lighting

The links between the campus and Colfax Avenue and Peoria Street form significant gateways into the campus environment. Highlighting signs and other entry features in an inviting manner will clearly indicate the edges of the campus environment.

Collector Roadways

Light Levels: Between .6 and 1.2 foot-candles per IES recommendations.

Fixtures located on both sides of streets with a staggered arrangement

- Pole mounted fixtures with heads at approximately 18'-25' high.
- Metal Halide color corrected lamps, 3500K, 82CRI
- Estimated Wattage 250W - exact wattage to be determined through photometric study.
- Approximately 75' on center, staggered spacing – to be coordinated with landscape layout.
- Approximately 66' on center – to be coordinated with landscape layout.
- Approximately 40'-60' on center – to be coordinated with landscape layout.

Primary & Secondary Streets

Light Levels: Between .4 and .8 foot-candles per IES recommendations.

Fixtures located on both sides of streets with a staggered arrangement.

- Pole mounted fixtures with heads at approximately 18'-20' high.
- Metal Halide color corrected lamps, 3500K, 82CRI
- Estimated Wattage 175W - exact wattage to be determined through photometric study.
- Approximately 75' on center, staggered spacing – to be coordinated with landscape layout.

Tertiary Ways

Light Levels: Between .3 and .6 foot-candles per IES recommendations.

Fixtures at these locations shall be located on a single side of the street. Fixture locations shall be carefully coordinated with building entries, service locations, adjacent surface parking lightning and tree spacing. Consideration shall be given to service truck access when locating fixtures to provide ample clearance for truck maneuvering. Building mounted fixtures may be used when pole mounted fixtures are not feasible or when narrow conditions would warrant as a means of simplifying the ground plane. If typical light patterns are interrupted

for loading docks, service entries, etc., then they should be replaced in these instances with building mounted lights.

- Pole mounted fixtures with heads at approximately 18'-20' high.
- Metal Halide color corrected lamps, 3500K, 82CRI
- Estimated Wattage 70W - exact wattage to be determined through photometric study.
- Approximately 75' on center, staggered spacing – to be coordinated with landscape layout.

Intersections

Intersections shall maintain relatively higher light levels through the use of symmetric fixture arrangements at all corners. Staggered fixture arrangements will resolve their alignment to be symmetrical at all intersections.

Surface Parking Areas

Fixtures at parking lot locations shall be located in a grid layout with poles matching adjacent fixtures. Fixtures shall meet minimum light level requirements and also provide color rendition, uniformity, and minimum glare for enhanced security. Light trespass shall be minimized and internal "house-side" shield shall be used when required.

- Pole mounted fixtures with heads at approximately 18'-20' high.
- Metal Halide color corrected lamps, 3500K, 82CRI
- Estimated Wattage 175W - exact wattage to be determined through photometric study.
- Approximately 66' on center – to be coordinated with landscape layout.

Mixed Vehicular and Pedestrian Lighting

Lighting should emphasize the pedestrian zone first and motorists second.

Roadway lighting shall be confined to one side of the roadway with pedestrian lighting on the opposing side to indicate the preferred pedestrian path of travel. Wall mounted fixtures may also be used in arcaded pedestrian areas. At crosswalk locations, the lighting emphasis should change from street lighting to pedestrian bollard lighting.

Pedestrian Walkways & Open Space Lighting

Along heavily used pedestrian walkways, lighting must not only guide the pedestrian from one point to the next but must also provide the lighting required for safety and security.

Plazas and quadrangles are unique, being surrounded by key academic buildings. Building entry and facade lighting should play a key role in how these spaces are perceived at night. Buildings should look inviting and be a welcome boundary to these spaces. Pedestrian pole lighting can be kept to a minimum if the building facade lighting is well designed. This can help to emphasize the openness of the plaza or quadrangle by minimizing lighting equipment located in the space. Formal landscape features should be well lite within plazas. This will not only increase the sense of security but also provide a pleasing visual vista for the pedestrian only areas.

Fixtures shall be located in a manner responding to architectural and landscape design elements. Lower fixtures should be utilized to emphasize the pedestrian scale. Feature lighting of landscape and art elements should be utilized to provide a safe, warm and inviting atmosphere. Where building entries occur adjacent to open spaces, the lighting should help define the entry and the connection to the open space. Lighting may be integrated in site walls or landscape areas to minimize the appearance of fixtures. Fixture styles may respond to the architectural and landscape design elements occurring within the immediate context.

- Pole mounted fixtures with heads at approximately 10' high.
- Metal Halide color corrected lamps, 3500K, 82CRI
- Estimated Wattage 70W - exact wattage to be determined through photometric study.
- Approximately 40'-60' on center – to be coordinated with landscape layout.

Pedestrian lighting and signage within the Academic Village.

Fixture Vocabulary A

Vehicular Luminaire

Gardco “Round Form 10” CA Style

Material: Aluminum, RAL7038

Height: 30’ (RA5)

*See University of Colorado Denver Design & Construction Standards, Section 26 56 00 for additional Information

Pedestrian Luminaire

Gardco “Round Form 10” MP Style

Material: Aluminum, RAL7038

Height: 10’ (RA4)

*See University of Colorado Denver Design & Construction Standards, Section 26 56 00 for additional Information

Bollard Lighting

Gardco “Round Form 10” MP Style

Material: Aluminum, RAL7038

Size: 16” Diameter

*See University of Colorado Denver Design & Construction Standards, Section 26 56 00 for additional Information

Exterior Building Wall Lighting

Gardco “Bollard 10” BR160

Material: Aluminum

Color: RAL 7038

*See University of Colorado Denver Design & Construction Standards, Section 26 56 00 for additional Information

Fixture Vocabulary B

Vehicular Luminaire

WE-EF Lighting, SH3

Material: Aluminum, “Classic Silver”

Height: 20’-6”’

Pedestrian Luminaire

WE-EF Lighting, SH3

Material: Aluminum, “Classic Silver”

Height: 12’

Bollard Lighting

XEDA IP65

Material: Aluminum

Color: “Classic Silver”

Exterior Building Wall Lighting

WE-EF Lighting, SH5

Material: Aluminum

Color: “Classic Silver”

II.12 SITE FURNISHINGS

Site furnishings for streetscapes and open spaces have been developed to delineate the nature of the various Character Districts and, in some instances, provide a unifying vocabulary between them. Elements include benches, bike racks, trash receptacles, and tree grates. These amenities further animate the site at a human scale and establish the design continuity necessary to create unique sense of place.

Vocabulary A

Tree Grates

Supplier: Neenah Foundry

Model: No. R8712

Sizes: 60” x 60”

Material: Standard raw cast gray iron

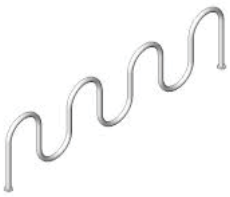
Bike Rack

Supplier: Huntco BRP Series

Model: BRP7, in-ground

Sizes: 97” X 36”

Material: Hot dipped galvanized metal



Streetscape Bench

Supplier: Landscape Forms

Model: “Stay” backed, surface mount

Sizes: 69” length

Material: Powder coated steel

Color: Silver

Streetscape Trash Receptacle

Supplier: Landscape Forms

Model: “Chase Park”

Sizes: 36 Gallon, 24” dia x 40”h

Public Space Bench

Supplier: Landscape Forms
Model: “Scarborough”, backed w/ 2 arms
Horizontal strap seat
Sizes: 72”
Material: Powder coated steel
Color: Stormcloud

Public Space Chair

Supplier: Landscape Forms
Model: “Scarborough”, backed w/ 2 arms
Sizes: 24”
Material: Powder coated steel
Color: Stormcloud

Public Space Table

Supplier: Landscape Forms
Model: “Catena”
Sizes: 30” dia.
Material: Powder coated steel
Color: Stormcloud

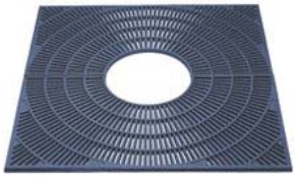
Public Space Trash Receptacle

Supplier: Landscape Forms
Model: “Scarborough” vertical straps
Sizes: 25”dia x 40”h
(side opening , surface mount)
Material: Powder coated aluminum
Color: Stormcloud

Vocabulary B

Tree Grates

Supplier: Urban Accessories
Model: “Fan”
Sizes:
Material: Standard raw cast gray iron



Bike Rack

Supplier: Landscape Forms
Model: “Ring”
Sizes:
Material: Stainless Steel

Streetscape Bench

Supplier: Landscape Forms
Model: “Stay” backed, surface mount
Sizes: 69” length
Material: Powder coated steel
Color: Silver

Public Space Bench

Supplier: Landscape Forms
Model: “Bancal”
Sizes:
Material: Powder coated steel, Ipe wood seat and back
Color: Silver

Trash Receptacle

Supplier: Landscape Forms
Model: “Chase Park”
Sizes: 36 Gallon, 24” dia x 40”h

II.13 LANDSCAPING, TREES AND IRRIGATION

A comprehensive Landscape Master Plan will be developed by the university in the near future and will include a recommended plant list inclusive of trees, shrubs, perennials, vines, grasses, etc.. This collaborative effort will be undertaken in conjunction with neighboring institutions and stakeholders in order to ensure that a rich and environmentally appropriate pallet of materials and planting strategies get established for implementation throughout the square mile site.

The following guidelines are meant to inform designers of the university's general goals and objectives for landscaping throughout the campus.

High quality and well-designed landscaping is desired in all areas not covered by buildings and streets. Landscaping areas are to be continuous from one parcel to the next and should incorporate materials that are comparable with building use, site improvements, street scapes, drainage corridors and easements.

Landscape should strive to create cohesiveness between the various character districts while simultaneously enhancing the unique characteristics of each.

All plants shall be selected from the Recommended Plant List following minimum spacing recommendations.

- Campus edges and corners are to be visually defined and present positive impressions to visitors and the surrounding community.
- Landscaping is to be environmentally sensitive and reactive to the impact of sun and shadow.
- All trees and shrubs shall be non-invasive species well suited for the central plains of Colorado.
- It is encouraged to reduce overall water usage by incorporating drought tolerant species aiding in the creation of durable landscapes.
- To reduce maintenance needs, the campus encourages the use of plants that do not require heavy ongoing pruning.
- Trees or shrubs that produce fruit should be located far enough away from pedestrian walkways that fruit does not fall on to sidewalks.
- Landscape, graphics, and lighting should be coordinated to create a positive impact and should not interfere with the intended function of each.
- Landscape placement should enhance views and axes.
- Accent landscaping should be used in front of uniform masses of plant material.

Landscaping is to be environmentally responsive.

- Landscaping should be used to shade buildings, parked cars, and appropriate outdoor functions.
- Landscaping should be used to reduce erosion.
- Position landscaping to screen cold winter winds and channel summer breezes. South side of buildings should be shaded with deciduous trees to conserve energy. North sides of buildings to be planted with evergreens to conserve energy.
- Avoid over-planting of "mono-cultures" susceptible to disease, insects, etc.

Planting are to fit appropriate spacing when mature.

- Plant groundcovers and low shrubs in areas less than 5'-0" wide.
- Provide turf at least 5' wide for effective irrigation and maintenance.
- Minimize the need for excessive pruning by selecting species whose growth suits the limitations of proposed locations.
- Space large shrubs 8'-0" to 10'-0" apart.
- Space medium shrubs 5'-0" to 8'-0" apart.
- Space small shrubs 3'-0" to 4'-0" apart.

Native ornamental grasses used to enhance an architectural balustrade.

At-grade planting beds are to be contained.

- Contain at-grade planting beds by steel edging, concrete mow bands or adjacent concrete pavement. Plastic or rubber edgings are not permitted.
- Mulch all planting beds with shredded wood mulch to a depth of 3 inches.

Perennials and annuals are to be planted to enhance specific sites.

- Select species suitable to soil conditions.
- Meet or exceed campus minimum size for materials.
- Only plant annuals in designated pots or planting beds.
- Annuals require higher maintenance and watering needs; locate where irrigation can be supplemented.
- Locate perennials and annual in areas where easy maintenance can be provided.

Trees

The legacy of the existing site development is in the trees, many of which date from a landscape enhancement program initiated by the Army in the mid-twenties. This legacy is to be preserved and enhanced in future campus development.

All plants shall be selected from the Recommended Plant List following minimum spacing recommendations.

Major existing trees are to be preserved.

- Building or utility construction near existing trees shall be constructed in such a manner as to ensure their survival.
- Existing trees 6" caliper or larger are to be noted on site plans and are not to be removed without prior approval.

Trees are to fit appropriately when mature.

- Spacing for deciduous trees is 30'-0" minimum.
- Spacing for columnar trees is 15'-0" minimum.
- Spacing for ornamental trees is 12'-0" minimum.
- Minimum 3" caliper when trees are planted in grates.
- Near traffic, branch trees no less than 13'-6" above grade.
- Minimum branching height for pedestrian is 8'-0" above sidewalk.
- Trees are not to be located closer than 36" from face of curb.
- Minimum distance between trees and street lighting is 10'-0"
- Minimum planting strip for shrubs at building foundation is 5'-0" wide.
- Trees should not be planted within 10 feet of steam lines, electric lines, water, sewer or drainage lines.

Trees shall not interfere with traffic movement.

- Do not plant trees within 15'-0" of the corner of street intersections.
- Do not plant trees within 10'-0" of the corner of service drive intersections.
- Trees shall not interfere with the views of traffic control devices or signage.
- Tree grates shall be used when trees are planted in paved areas.

Trees are to be used in pavement where appropriate

- Install grates or removable pavers around trees planted in pavement.
- Install campus standard tree grates measuring at least 5'-0" by 5'-0".
- Plant trees of at least 3" caliper.
- Provide root zones with sub-drains and separate zoned drip irrigation.

Irrigation

Landscape areas must include a properly designed, automatic irrigation system that provides full coverage on all plants. Supplemental irrigation to be supplied to exiting trees or vegetation that has had water diverted or eliminated due to site development or construction.

Campus standard irrigation equipment is to be used.

- Select irrigation equipment suited to the design of the irrigation zones, where plants are grouped based upon similar watering needs, and growing conditions.
- Provide and replace sprinkler heads using standardized parts that will maintain the desired level of irrigation.
- Provide controls to irrigate shrubs, flowers, and trees separately from turf. Utilize controllers with timing systems that permit use of low-volume systems over

longer cycles.

- Use pop-ups with low-pressure, low-volume spray heads. Irrigate shrubs and trees with drip or low-volume heads. Pop-up heads in turf areas are to have risers at least 4 inches high.
- Irrigate groundcovers with fixed risers or shrub high pop-ups, bubblers, or drip systems.

Spray Patterns are to be adjusted to fit site conditions.

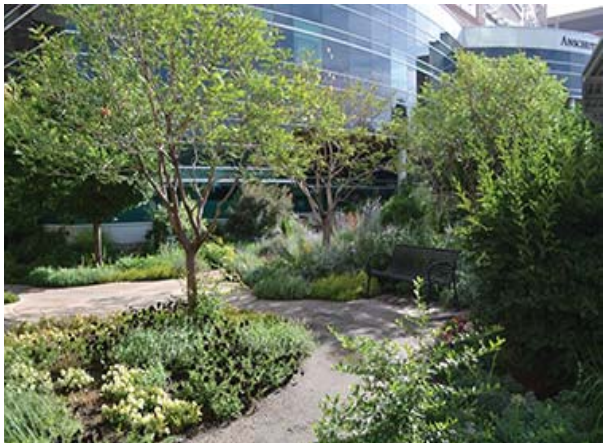
- Coordinate foundation planting with irrigation to provide at least 5-foot offset for spray irrigation and 3-foot offset for drip irrigation from face of building.
- Operate irrigation when pedestrians are not likely to be present.
- Confine normal spray patterns to mass vegetated areas or root zones of trees. Provide 100 percent overlap in these areas.
- Avoid spraying walks, courtyards, plazas, roadways, buildings and fences. If spraying of walks and bike-ways cannot be avoided, the controller must be timed to spray at night.

*See University of Colorado Denver Design & Construction Standards, Section 32 84 00 for addition irrigation requirements.

II.14 LANDSCAPE ADJACENT TO BUILDINGS

Plantings should not obscure building entrances but rather enhance its clarity and frame views toward the building.

- Residual spaces, adjacent to and between buildings, should be designed and planted to be part the total composition of development and not as an afterthought.
- Plantings should be located far enough from building facades so as to allow for air movement.
- Planting should not obstruct important views from windows. Plants located near windows may be used to filter glare and bright sunlight, but should be distant enough from the facade to maintain views outward.
- Planting should not be located in a way to create unsafe environments and should not create darkened areas near entrances or along walkways.
- Provide gravel borders or mulch planting beds around buildings to protect foundations and facades from lawnmower damage.



Discovered space in front of UCH Inpatient Tower

Courtyard garden in front of Education 1.

II.15 GATEWAYS & SIGNAGE

Gateways

Gateways celebrate entry, providing symbolic thresholds onto the Campus. They create a strong first impression upon visitors in relation to the goals, principals and ideals at the heart of the institutions making up the Anschutz Medical Center.

The university is in the process of developing a vocabulary of gateway markers to be unitized at key entry conditions onto the campus.

Signage

Signage and way-finding not only provide direction and orientation, but also enhance the campus identity through consistent use of color, typography and materials.

Through a future comprehensive planning study, the Anschutz Medical Campus shall establish prescriptive design guidelines for present and future implementation of campus signage.

The goals and objectives for this future campus signage study are summarized below:

- Signage shall clearly, concisely and consistently communicate; providing identification, directional, regulatory and operational information.
- Signage shall perpetuate the identity of the University of Colorado | Anschutz Medical Center by adhering to established graphic standards for logo, shape, colors, scale and typography.
- Signage shall provide a vehicle with which to distinguish the various districts and programmatic functions of the campus using shape, color or other means of coding.
- Signage shall complement the established palette of architectural and landscape materials and colors.
- It shall provide tools with which those navigating the campus may establish and maintain their orientation by reinforcing their proximity to campus landmarks.
- Signage shall reflect the character of a high quality campus environment.
- It shall accommodate and enhance existing and future programs and the needs of those navigating throughout the campus, while remaining sensitive to the site and environment.
- Signage shall be durable, economical and designed to have the flexibility to accommodate future growth and change.
- A hierarchy of signage shall be established, communicating directions to campus landmarks, thereby requiring fewer signs to efficiently direct visitors.
- Signage shall be appropriately designed to function both during the day and in the evenings.

Proposed signature gateway onto campus at Aurora Court and Colfax Avenue.

UCH gateway signage in the median of Tony Ruiz Plaza and Colfax Avenue.

II.16 PUBLIC ART, DONOR RECOGNITION|MEMORIALS & INTERPRETIVE SIGNAGE

Public Art

The Art in Public Places Program (AIPP) was established by the Colorado Legislature in 1977. Under the program, 1 percent of the cost of building or renovation of any state facility must go toward the purchase or creation of public art near the facility. Works of art purchased through this program are located in publicly accessible spaces inside and outside of state buildings.

These art installations form the state art collection and are developed and administered by Colorado Creative Industries. The works selected through this program represent great diversity in style, imagery, materials and techniques. By uniting artists, architecture, and host institutions, AIPP integrates the art experience into the built environment and civic spaces

The University of Colorado Anschutz Medical Campus presently contains over $1.2 million in public art making it the largest public art program in the state.

Public art enriches the physical and intellectual environment and should be sited in strategic locations throughout the campus. Art should give physical form to the goals and values of the university. The following criteria shall be used to evaluate works of art:

- The aesthetic significance of an individual work of public art.
- Appropriateness to site, including (for outdoor sites) appropriateness to the site's adjacent architecture, hardscaping, and landscaping.
- The contribution an individual work of art can be expected to make to the University's educational mission, as well as to the existing collection of public art.
- The significance of the artist or artists.
- The relative uniqueness of the work of art, including factors of originality and authenticity.
- The University's ability to assure the proper long-term care of the individual work of public art, including security, conservation, and maintenance.
- The safety of the work of public art, as well as the safety of users interacting with it.
- Where works of art come as donations, the University's ability to manage effectively the long-term stewardship of donor relationships.

Corpus Callosum by Thomas Sayre along the 17th Place Art Walk.

Donor Recognition|Memorials

Due to the unique history of the campus and its physical design, a range of donation and memorial opportunities exist. The university will be undertaking a comprehensive study to identify options for types and locations for such opportunities. The ideas established in this study are to be expanded by committees established to integrate appropriate memorial and donor opportunities within the future development of the campus. The key principals are as follows:

- Guidelines shall be developed for memorials and donor recognition opportunities appropriate to the role and mission of the Anschutz Medical Campus.
- A memorial committee will identify a hierarchy of suitable memorials.
- Significant historical memorials currently existing on campus shall be preserved.
- The history of the Fitzsimons site shall be acknowledged through memorials.
- Memorials and donor recognitions shall create a consistent identity throughout the campus.
- Memorials shall be displayed within the landscape of the campus.

Origin by Kendra Fleischman within the Education 1 courtyard

II.17 SITE SAFETY

Design should adhere to three basic environmental design principles concerning crime prevention:

1) Natural Access Control - a design concept aimed at reducing the opportunity for crime. The intent is two-fold. One is to deny access to a potentially vulnerable situation. The second is to create a perception of risk in potential offenders.

2) Surveillance Strategy - a concept that encourages "eyes" on a space without physically being in the space. For example, through placement of windows or low shrubs, people in a building can observe an adjacent open space.

3) Territorial Reinforcement Strategies - the creation of boundaries identifying public, semi-private and private spaces. By marking private space in particular, the campus community is encouraged to develop ownership of the space.

Emergency Telephones

Blue phones are a communication tool for emergency situations allowing an individual to reach the University Police as quickly as possible. In order to ensure that phones are located were needed, the following principles shall be adhered to:

- Devices shall be readily visible and accessible to pedestrians, bicyclists, joggers, drivers, and bus riders.
- Sight lines between emergency phones must be maintained and not obscured by trees, shrubs or light poles.
- A system of placement shall be established, not exceeding 500' apart, allowing users to identify devices and anticipate reasonable distances between devices.
- Surface parking lots will have a minimum of one phone per lot, sited near entry points at pedestrian walkways.
- Emergency telephones shall be signed as "police" rather than "emergency telephones".

II.18 SUSTAINABILITY

The Anschutz Medical Campus recognizes that a sustainable approach to creating and maintaining the campus is the only way that we will be able to continue to provide a high quality environment for current and future users.

Sustainability can be defined in many different ways, but commonly refers to using physical resources in a wise and efficient way today so that those resources will be here for future generations. The energy we use to heat and cool our buildings, the water we use for our lawns and indoor plumbing, the fuel we use for our vehicles are all finite resources and the quantity and quality of those resources will dissipate if we do not take action now to conserve them.

As a signatory of the ACUPCC, the university is required to develop a comprehensive Action Plan (CAP). This plan requires the university to conduct a greenhouse gas emissions inventory to measure and define its years contribution to climate change. The results of this inventory revealed the following:

•University GHG Emissions for 2006/2007 were 164,000 metric tons/CO2 equivalent.

•Approximately 75% of our GHG emission come from energy use in our buildings.

•Energy use in university research facilities is intensive.

Based upon these findings, the Chancellor's Advisory Task Force on Sustainability is developing a CAP that will provide a 20 percent reduction from the 2006/2007 baseline through:

•Energy efficiency projects in university buildings.

•Renewable energy development.

•Education and communications.

•Appropriate Funding mechanisms for projects.

•Integration of CAP into all aspects of campus activities.

The following is a list of protocols guiding sustainability at the Anschutz Medical Campus:

American College and University Presidents Climate Commitment (ACUPCC), 2007

- Signed by Chancellor in 2007
- Requires bi-annual inventory of Greenhouse Gas Emissions (GHGs) and development of comprehensive plan to reduce GHG emissions
- Climate Action Plan completed in 2010 with goals to significantly reduce GHG emissions in incremental periods over 40 years – 20% by 2020, 50% by 2030, 80% by 2050

Governor's Greening of Government Executive Orders, 2007

- Created by Governor Ritter to enact resource efficiency programs at state agencies and higher education institutions
- Requires reductions in the use of energy, water, waste, vehicle fuel consumption, and to seek a zero-waste goal in construction projects

High Performance Certification Program, 2007

- Requires construction projects achieve the highest possible LEED certification with the goal being LEED Gold
- The new facility, addition, or renovation project contains 5,000 or more building square feet; and
- The project includes an HVAC system; and
- In the case of a renovation project, the cost of the renovation exceeds 25% of the current value of the property

University of Colorado Board of Regents Sustainability Resolution, 2010

- Recognizes Regents supports for system-wide sustainability efforts
- Directs incorporation of LEED standards in university buildings
- Supports ACUPCC commitments for climate action planning and GHG reductions
- Supports Greening of Government goals

Sustainability Tracking, Assessment & Rating System, 2012

- A transparent, self-reporting framework for colleges and universities to measure their sustainability performance
- Rating looks at sustainability in Academics & Research, Operations, Administrative & Community Engagement
- CU Denver/Anschutz received a Silver rating in 2012
- Marketing opportunities to have rating showcased in Princeton Review

II.19 MAINTENANCE, MANAGEMENT AND OPERATIONS

The Campus landscape is to be assessed annually

- Retain horticulturist and landscape architect to access planting areas and make recommendations concerning spacing, massing, size and to determine:

    1. Health of plants
    2. Appropriateness of plant selection for location
    3. Recommended maintenance and management practices
    4. Recommended replacement of plants if necessary
    5. Irrigation management and watering needs of plants

Landscape maintenance and warranty contracts are to be maintained.

- 2-year warranty and contractor maintenance for all woody plant material installed as part of a Campus construction project.

Excessive planting shearing is to be minimized.

- Where shearing is necessary, shear shrubs together and concisely for form a hedge. Do not prune individual plants.
- Plants requiring shearing should be easily accessible

PART III BUILDING DESIGN GUIDELINES

III.1 CONTEXT

Buildings are to be compatible with the Facilities Master Plan and should reinforce the quality, character, and cohesiveness of the individual districts in which they are located as well as that of the campus as whole.

Facades should relate to surrounding conditions and help to create a unified compositional identity. Buildings should reinforce the integrity of adjacent open spaces and support the structural organization of the character zone in which they are located. They should be sympathetic to adjacent facades, major datum, cornice lines, etc.. Secondary facades should be of comparable quality as the primary facade with walls, windows, doors and facade articulations designed to accentuate human scale.

Building massing and facades should exhibit a rationality reflective of the organizational structure within.

Buildings should be designed to be responsive to environmental conditions; incorporating solar orientation studies and dynamic wind analyses in the most early phases of the design process.

Building 500 exhibits a richness in architectural detail

The School of Dental Medicine Building relates well in terms of scale and materiality with the adjacent Art Walk.

The curtainwall articulations on the UCH Anschutz Center for Advanced Medicine respond well to a human scale.

A cohesive composition of interrelating masonry buildings define the Education Quadrangle.

III.2 EXTERIOR CLADDING MATERIALS

In the last decade, the campus has developed a primary vocabulary of brick buildings to define a general character of permanence and fortitude. Materials complimentary to brick, such as natural stone, have also be used successfully. While not required, the campus has a strong preference for masonry as the material of choice for exterior cladding.

Materials conveying a "high-tech" quality, such as metal panels and glazed curtainwall assemblies, have helped define the character of our research quadrangle and Hospital district. Their ability to communicate an image of a modern, state-of-the-art academic health science community makes the use of these materials particularly suitable in these applications.

Any choice of exterior materials should strive to achieve an impression of quality and durability. Considerations of texture, and richness of detail should occur within the context of adjacent structures and the scale of surrounding open spaces.

Cladding materials are to be cost effective over the life-cycle of the building. They are to reinforce order and a consistency of architectural character with neighboring buildings and open spaces.

The use of materials and/or systems new to the market will only be considered if the architect can provide product data sufficient to convince the university's facilities staff of their durability, reliability, and relevance to the design. Sustainable materials, systems, and processes should be given special consideration whenever possible.

Glazing

Windowless, inward-looking buildings are to be discouraged. It is highly encouraged that the activities, when appropriate, occurring within buildings be visible from the exterior. Reflective or highly tinted glass should therefore be avoided. Building fenestration should respond to solar orientation and include glazing that maximizes energy efficiency.

Roofing Types and Materials

Sloped and flat roof types are acceptable as design approaches however all roofs should be designed to augment and enhance color and material selections and the overall aesthetic expression of the building.

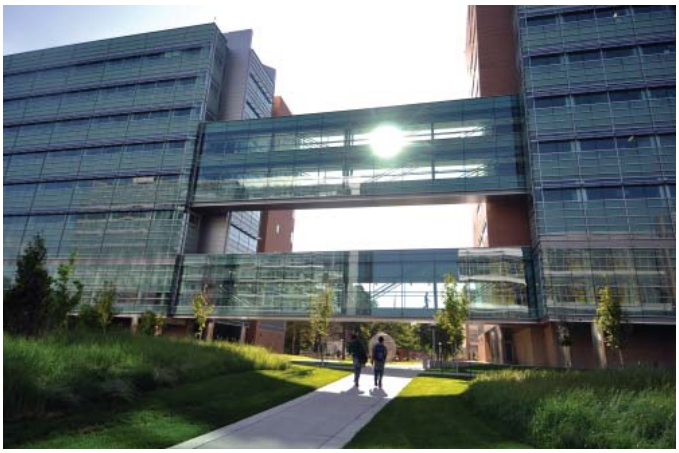
Building massing and roof silhouettes should be responsive to the functional and symbolic nature of the building as well as its relative location on campus.

Exposed roofs should be consistent with the buildings architectural expression in scale, surface material and general color. Rooftop mechanical equipment should be enclosed in structures that are integrated with the building design.

Flat roofs visible from surrounding buildings, either in the present or potentially in the future, must be orderly and coherent in design.

Flat roofs should be a ballast type construction where the inside of parapets are sympathetic to the exterior skin and ballast is of either a complimentary color to the off white gray or reddish brown dominant colors of the established campus palette.

Roofs should be organized to present their best possible appearance from above.



Research 2 Towers, while diverging from a primarily masonry vocabulary, still relate well to the human scale of the campus.

III.3 SITE SELECTION

In the effort to devise a systematic methodology for evaluating the most appropriate site for future buildings, the following process has been established. The intent is to provide university leadership with a clear and concise means of understanding the pros and cons inherent in any number of potential building sites in relation to a project's intended program, user population, and environmental impact.

Step 1

Goal: To establish a program plan allowing university leadership the ability to evaluate economic, programmatic, and strategic perimeters of the proposed project.

- Define program
- Establish primary user groups for the building
- Identify governing parameters of the buildings program (EMI, vibration, etc.)
- Identify any Institutional adjacency requirements
- Define primary typological spaces

Step 2

Goal: Research programmatic precedents to gain an understanding of how similar projects have responded to the needs and requirements identified in Step 1.

With the conclusion of Steps 1 & 2, a minimum of three sites shall be proposed to leadership as potential building opportunities.

Step 3

These three potential sites shall then be evaluated and ranked in accordance with their relationship to the following:

1) Where does the potential site exist in relation to the campus core?

In order to encourage greater density within the core of the campus, potential building sites will be ranked in accordance to their relative distances from Building 500. A site located within a one minute walk from the center of Building 500 will be awarded the maximum raking of 10 points. 1 point will be deducted from the 10 for each 1 minute walking distance that a potential site falls outside of the initial 1 minute ring.

2) Is the site located along the 17th Avenue Translational Corridor?

To encourage greater density of development along the 17th Avenue, 10 points will be awarded to sites located along, and fronting on to, the Translational Corridor.

3) Are site utilities present or will they need to be extended?

To avoid unnecessary added infrastructure costs for future projects, higher points will be awarded for sites located within the boundaries of 19th Avenue to the north, Victor Street to the east, 17th Avenue to the south, and Racine Street to the west. These are the major utility pathways for campus infrastructure housing the "utility loop" for the campus. A reduction in total points will be awarded to site falling outside of this loop proportionate to their relative distances from it.

4) Are parking needs accommodated within acceptable distances?

These points are in addition to the mandatory requirement that handicap parking spaces be located near building entrances and accessible pedestrian routes.

- Patient parking within 300 feet of destination
  10 points if applicable to program
- Visitor parking within 300 feet of destination
  5 points if applicable to program
- Physician parking within 300 feet of primary destination
  5 points if applicable to program
- Staff parking within 1000 feet of primary destination
  5 points if applicable to program
- Student parking within 1000 feet of primary destination
  5 points if applicable to program
- Service vehicle parking within 100 feet of destination
  5 points
- Potential for car pool spaces at close-in locations to encourage participation
  5 points

5) Does the proposed scale of the development fit within the existing context?

This is a simple "yes" or "no" evaluation of a potential site with an affirmative earning an additional 10 points with no earning none. An example would be the potential for a 10 story structure (with an approved EIR report)

Figure 2.3A - Site Selection, Campus Core Point Zones

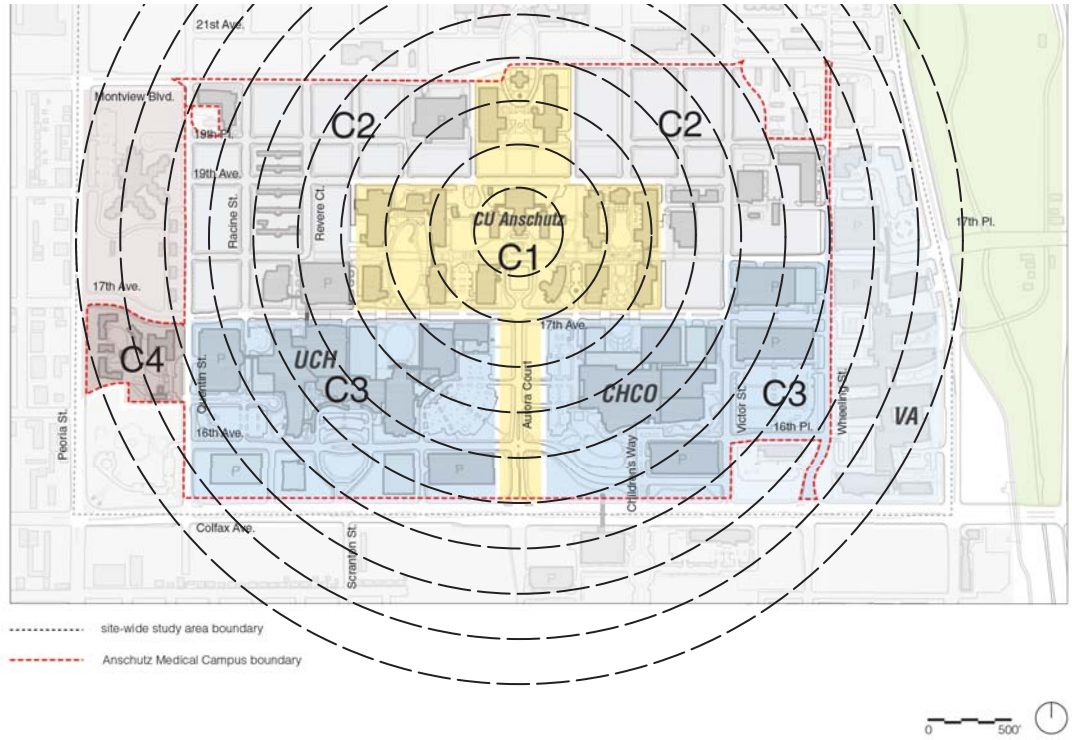


Figure III.3A - Site Selection | Campus Core Point Zones

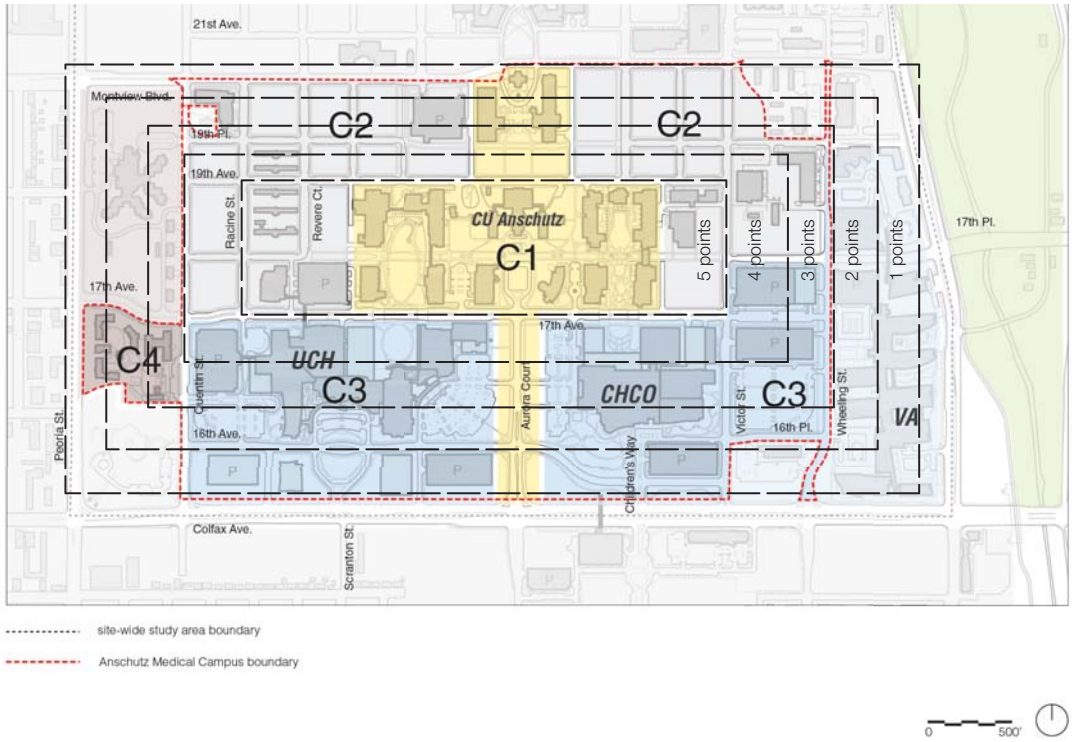


Figure III.3B - Site Selection | Utility Point Zones

being constructed north and adjacent to the education quadrangle as opposed to on 17th Avenue near the research quadrangle. The former would receive no additional points while the latter would achieve ten points.

6) Does the character zone support or detract from programmatic requirements?

This is a simple "yes" or "no" evaluation of a potential site with an affirmative earning an additional 10 points and "no" earning none.

C1 | Academic Village - Is the proposed building collegiate in program, having a low visitor to student/faculty ratio and subsequently do users have a high familiarity navigating within the zone?

C2 | Urban Campus - Is the proposed building program enhanced by a connectivity with the Colorado Science and Technology Park at Fitzsimons? Is this a mixed-use development with a relatively high potential for reprogramming and occupant turn-over (flexibility). Is on-street visitor parking beneficial?

C3 | Hospital District - Is patient/visitor access the primary driver?

Final points are then tallied and presented to university leadership for consideration.

III.4 STRUCTURED PARKING

Mixed use functions should be considered for incorporation into all structured parking developments. When feasible, ground floors fronting open space should be activated by public uses.

All structured parking facades should be designed to be compatible with the pattern, articulation, scale and massing of surrounding structures.

Special attention should be given to the design and articulation of the ground floor fenestration, particularly how it integrates with the design of the adjacent sidewalks and streetscape to create a quality pedestrian environment.

Lighting should be bright enough to provide a proper level of safety and security but should be properly controlled to not spill out beyond the exterior walls.

Emphasis should be placed upon the design and articulation of elevator lobbies and stair towers as components of the pedestrian experience, and should be properly separated from vehicular ingress and egress locations.

Internal vehicle ramps should be located off of a tertiary way or relegated to the center of garages with three or more parking bays. Whenever possible, garage entrances should be located on a secondary street or tertiary way and avoid vehicular entrances across from public open spaces.

III.5 FUNCTIONAL AND MECHANICAL FACILITIES

Functional and mechanical areas devoted exclusively to building services, deliveries, trash removal, or mechanical equipment access or service, should be located away from public areas and be designed to be as visually unobtrusive as possible. Any negative environmental effects such as noise or a potential reduction in air quality on the surrounding environment should be carefully considered and mitigated to the greatest extent possible within the projects budget.

III.6 ACCESSIBILITY

The Anschutz Medical Campus is committed to providing an environment in which everyone is respected and valued and to providing equal and dignified access to those with disabilities. All new construction must comply with the Americans with Disabilities Act (ADA). Renovations to historic buildings should strive to improve access in a manner compatible with their historic integrity.

III.7 SUSTAINABILITY

Pursuant to the goals, objectives, a protocols noted in Section 2.19 of these Guidelines, all new construction projects, as well as significant renovations, should achieve the highest possible LEED certification with the goal being LEED Gold or equivalent.

The Sustainability Checklist, included in Appendix I of these Guidelines, is intended to aid design teams in the creation of high performing, healthy, durable, and environmentally sound buildings. It is an edited version of the Checklist adopted by the Colorado Science and Technology Park at Fitzsimons as part of their August 27, 2008 Urban Design Guidelines and, as such, should help to support consistency between the university, its affiliates, and its public/private neighbors to the north.

The Checklist is divided into 10 sections, each representing a different aspect of design and construction. They are as follows:

1. Transportation
2. Landscape & Site
3. Stormwater management
4. Construction Waste
5. Materials
6. Indoor Environmental Quality
7. Energy Optimization
8. Water Efficiency
9. Recycling & Solid Waste
10. Management

Individual credits in each of these section are broken down in 3 categories:

1. Included
2. Mandatory
3. Recommended

Included Credits

These are credit already included within the Master Plan and automatically earned by any development within the borders of the Anschutz Medical Center.

Mandatory Credits

These credits have been deemed most important for effective sustainable design and must be complied with. When these credits are combined with the included credits, the project should be comparable to a USGBC LEED Silver rating.

Recommended Credits

While not all of these credits are required in order to meet present sustainability goals, designers are highly encouraged to comply with as many as are found to be feasible within the programmatic and budgetary requirements of the project. By meeting all included and mandatory credits, projects should be comparable to a USGBC LEED Gold Rating if they meet 30% of these recommended credit.

III.8 MAINTENANCE, MANAGEMENT & OPERATIONS

The Facilities Condition Index or FCI is based on a systematic methodology to audit a building condition by breaking it into components. The components include foundation, skin, floors, roof, ceilings, interior partitions, windows, doors, heating, ventilating, cooling, plumbing, conveying and safety. Each system is evaluated and rated based against its new or original condition. If a part of the building has a deficiency, it is assigned a reduction value. The goal of the State Building program is to keep buildings at an FCI 80% or better. The State provides Controlled maintenance funding to address the building deficiencies based on most critical needs and availability of funds for academic or generally funded buildings. The large majority of the buildings located on the University of Colorado Anschutz Medical Campus are above the 80% FCI rating and a serving the campus mission and function.

All building are to be reviewed annually each summer and their FCI reported to the Office of the State Architect. Critical controlled maintenance needs are identified and ranked each year for potential funding to fix deficiencies.

APPENDIX I - SUSTAINABILITY CHECKLIST

	Description	LEED Credit
1 - TRANSPORTATION		
Included		
☐ Alternative Transportation - Public Transportation Access	Locate the Project within a short distance of pre-existing public transit infrastructure, such as bus or light rail routes, to reduce the energy and pollution associated with employees or building occupants commuting to the site.	SS c4.1
Mandatory		
☐ Bicycle Facilities / storage and changing areas	Provide bike racks and showers/changing facilities to encourage building occupants to bike to work, reducing the amount of energy and pollution associated with transportation.	SS c4.2
☐ Parking capacity, reduced parking footprint	Reduce the parking footprint around a building to the minimum required by local zoning in order to reduce stormwater runoff, mitigate heat island effect, and encourage the use of public transportation.	SS c4.4
Recommended		
☐ Preferred parking for Low-Emitting & Fuel- Efficient Vehicles	Reduce pollution and land development impacts from automotive use. Provide preferred parking for fuel efficient vehicles for 5% of the total vehicle parking capacity of the site.	SS c4.3
2 - LANDSCAPE & SITE		
Included		
☐ Site Selection	No project shall be built upon previously undeveloped land, prime agricultural land, land below the 100 year floodplain, within 100 feet of wetlands or 50 feet of bodies of water,	SS c1
☐ Development Density and Community Connectivity	Increase the density of building projects and encourage the use of existing infrastructure to help reduce the land use and embodied energy of the project.	SS c2
☐ Brownfield Redevelopment	Build upon remediated brownfield sites to avoid the use of undeveloped land and help improve the environmental conditions of previously contaminated sites.	SS c3
Mandatory		
☐ Minimize site disturbance during construction	Preserve existing landscapes and wildlife habitat. Particular attention should be given to activities which may induce erosion or the release of dust into the air.	SS p1
☐ Xeriscaping and drought tolerant plants - no potable use or no irrigation	Encourage water conservation. Potable water should not be used for irrigation.	WE c1.1, c1.2
☐ Native Landscaping	Plant material should be well-adapted to local climate and weather conditions; thus reducing the amount of resources and maintenance required.	WE c1.1, c1.2
Recommended		
☐ Shade producing trees and vines - Shaded parking lots	Shade producing trees reduce the amount of water lost to evaporation and reduce the impacts of heat island effect.	SS c7.1
☐ Slow release fertilizers on new landscaping	Slow release fertilizers yield lesser impact upon stormwater runoff and surrounding vegetation.	SS c6.2
☐ Lawn avoided or restricted to within 20 feet of buildings 5 feet of parking, driveways and walkways (in zone C3)	Limiting lawn to areas within close proximity of human interaction helps to reduce the water consumption of such landscapes.	WE c1.1, c1.2
☐ Heat island effect - non roof	Limit the amount of ground area covered by dark, heat absorptive materials such as asphalt; thereby lowering summer cooling loads and providing a more comfortable outdoor environment	SS c7.1
☐ Protection of Biodiversity	Limit site disturbance to preserve surrounding natural habitats and promote biodiversity	SS c5.1
☐ Minimize site disturbance through sympathetic design	Preserve existing tree canopies, native vegetation, and existing pervious surfaces.	SS c5.1
3 - STORMWATER MANAGEMENT		
Included		
☐ Stormwater Design - Quantity Control	Maintain equal or lower stormwater runoff rates as compared to initial site conditions. Methods include an increase in pervious area, including retention systems, etc.	SS c6.1
☐ Stormwater Design - Quality Control	Reduce the impact of building upon the site by limiting impervious areas within the site, increasing stormwater infiltration, and managing stormwater runoff.	SS c6.2
Mandatory		
☐ Erosion and sedimentation control	Preserve step slopes with native vegetation to reduce stormwater related erosion	SS p1
☐ Inert roofing materials	Utilize non-toxic exterior roofing materials to reduce the amount of pollutants carried away in stormwater	SS c6.2
☐ Outdoor hazardous waste pollution prevention	Use non-toxic exterior cladding and site materials to reduce the amount of pollutants carried away in stormwater	SS c6.2
Recommended		
☐ Walkway and roof drain biofiltration systems	Include biofiltration systems to reduce the amount of particulates immersed in stormwater runoff.	SS c6.1
☐ Parking lot filters and bioswales	Utilize filters and bioswales to reduce stormwater runoff quantity as well as to reduce the amount of contaminates contained within the runoff.	SS c6.1
☐ Porous pavement for parking lots and walkways	Reduce stormwater runoff quantities by encouraging onsite absorption	SS c6.1
☐ Reduce stormwater runoff rates	Reduce stormwater runoff quantities below the site's original levels	SS c6.1
4 - CONSTRUCTION WASTE		
Mandatory		
☐ Divert 75% of construction waste from disposal	Reduce the environmental impact associated with construction waste by recycling or reuse.	MR c2.1, c2.2
Recommended		
☐ Building reuse - Maintain 50% of existing walls, floors & roof components	Reuse of building materials to reduce environmental impact of waste in renovation projects	MR c2.1, c1.2
☐ Building reuse - Maintain 100% of existing walls, floors & roof components	Reuse of building materials to reduce environmental impact of waste in renovation projects	MR c2.1, c1.2

MATERIALS

Mandatory			
☐	Recycled content - 10% (post-consumer + 1/2 pre-consumer	Utilize recycled content materials to lessen environmental impact	MR c4.1
☐	Regional Materials - 10% extracted, processed and manufactured regionally	Utilize materials sourced from 500 miles away or closer to reduce energy used and pollution created in transporting materials over long distances.	MR c5.1
Recommended			
☐	Recycled content - 20% (post-consumer + 1/2 pre-consumer	Utilize recycled content materials to lessen environmental impact	MR c4.2
☐	Recycled content insulation	Utilize recycled content materials to lessen environmental impact	MR c4.1, c4.2
☐	Recycled content gypsum board	Utilize recycled content materials to lessen environmental impact	MR c4.1, c4.2
☐	Material reuse, 1%	Reuse of materials to lessen environmental impact	MR c3
☐	Regional Materials - 20% extracted, processed and manufactured regionally	Utilize materials sourced from 500 miles away or closer to reduce energy used and pollution created in transporting materials over long distances.	MR c5.2
☐	Recycled light gauge steel, rebar and structural steel	Utilize recycled content materials to lessen environmental impact	MR c4.1, c4.2
☐	Recycled content roofing materials	Utilize recycled content materials to lessen environmental impact	MR c4.1, c4.2
☐	Finish materials from reclaimed or remilled wood, excluding flooring	Utilize reclaimed wood to reduce the environmental impacts associated with the manufacturing and processing of virgin lumber	MR c3
☐	Certified wood	Source wood from sustainably harvested forests.	MR c6
☐	Natural materials	Utilize bio-based products having comparably lower environmental impacts.	MR c5.1, c5.2
☐	Adaptability	Plan for adaptability with structures to reduce waste associated with renovation work examples: raised floors, pre-wired data and communications cabling, etc.	

5 - INDOOR ENVIRONMENTAL QUALITY

Mandatory			
☐	Minimum IAQ Performance	Comply with minimum indoor air quality standards established by ASHRAE 62-2004	IEQ p1
☐	Environmental Tobacco Smoke Control	Smoking and/or tobacco use is prohibited anywhere within the boundaries of the University of Colorado |Anschutz Medical Center	IEQ p2
☐	Construction IAQ management plan	Any construction/renovation project must include an approved indoor air quality control plan	IEQ c3
☐	Low-emitting materials - adhesives & sealants	Reduced VOCs to promote healthier environments	IEQ c4.1
☐	Low-emitting materials - paints & Coatings	Reduced VOCs to promote healthier environments	IEQ c4.2
☐	Low-emitting materials - carpet systems	Reduced VOCs to promote healthier environments	IEQ c4.3
☐	Low-emitting materials - composite wood & agrifiber products	Reduced VOCs to promote healthier environments	IEQ c4.4
☐	Design for thermal comfort	Establish comfort criteria per ASHREA Standard 55-2004	IEQ c7
Recommended			
☐	Outdoor air delivery monitoring	Provide capacity for ventilation system monitoring to help sustain occupant comfort	IEQ c1
☐	Daylight & views - daylight at 75% of spaces	Provide connections between indoor spaces and the outdoors	IEQ c8.1
☐	Daylight & views - views at 90% of spaces	Provide connections between indoor spaces and the outdoors	IEQ c8.2
☐	Indoor chemical & pollutant source control	Reduce the impacts of pollutant and particle entry into the building as well as properly manage hazardous activities within.	IEQ c5
☐	Increased ventilation	Exceed ASHRAE 62.1-2004 standards by 30% or more	IEQ c2
☐	Pre-occupancy construction IAQ management plan	Follow USGBC flushing and/or air filtering requirements	IEQ c3

7 - ENERGY OPTIMIZATION

Mandatory			
☐	14% Whole building performance improvement over ASHRAE 90.1-2004	Design for enhanced energy efficiency throughout the entire life cycle of the building	EA p2,c1
☐	Energy modeling of design alternatives	Provide computer simulations to evaluate design options	EA p2,c1
Recommended			
☐	31.5% Whole building performance improvement over ASHRAE 90.1-2004	Design for enhanced energy efficiency throughout the entire life cycle of the building	EA p2,c1

BUILDING ENVELOPE

Mandatory			
☐	Roof Insulation	Roof shall exceed the thermal requirements of ASHRAE 90.1-2004 by a min. of 10%	EA p2,c1
☐	Infiltration		EA p2,c1
☐	High performance Glazing		EA p2,c1
☐	Low slope cool roofs	Provide highly reflective "cool" roofing to mitigate heat island effect	EA p2,c1
Recommended			
☐	Passive heating & cooling	Orient buildings and glazing locations to maximize passive heating and cooling opportunities	EA p2,c1
☐	Wind mitigation measures	Siting, orientation, and landscaping should reduce potentially harmful impacts of wind; i.e. snow or sand deposition, thermal loss, drafts, and building deterioration.	EA p2,c1

SPACE CONDITIONING

Mandatory			
☐	Fundamental refrigerant management	No Chlorofluorocarbons (CFCs) permitted	EA p3
☐	Mechanical systems energy efficiency		EA p2,c1
☐	Variable speed motors or drives for pumps and fans		EA p2,c1
☐	Low Nox, low CO boilers		EA p3,c4
☐	High efficiency air filtration		EA p2,c1
☐	Enhanced refrigerant management		EA c4
Recommended			
☐	Mechanical ventilation with high efficiency fans & carbon monoxide sensors at subterranean garages	In order to provide safe and healthy environments, mechanical ventilation is required. To minimize energy consumption, high efficiency fans shall be utilized with the system controlled by CO2 sensors	IEQ c1
☐	Design for cross ventilation	Incorporate natural ventilation strategies	EA p2,c1
☐	Premium efficiency electric motors		EA p2,c1
☐	Staged Heating and cooling systems	Utilize multiple heating & cooling systems of a variety of sizes to reduce inefficiencies incurred when running oversized systems at part-load	EA p2,c1
☐	Fan assisted natural ventilation		EA p2,c1
☐	Operate inlet air dampers for natural ventilation	Mechanical systems should be equipped to utilize natural ventilation and other passive strategies when possible.	EA p2,c1

LIGHTING

Mandatory			
☐	Common area fluorescent, hard-wired compact fluorescent or HID lamps	Incandescent lamps are not permitted.	EA p2,c1
☐	No radioactive elements in exit signage or other lighting		EA p2,c1
☐	Light pollution reduction	Exterior lighting shall be designed to minimize light trespass	SS c8
☐	Super T8 lamps & electronic ballasts	To be specified where appropriate	EA p2,c1
Recommended			
☐	Automatic light shutoff in office common spaces	Provide occupancy sensors in spaces having low or transient occupancy	EA p2,c1
☐	Photocell controls on all common area exterior, site & landscape fixtures		EA p2,c1

WATER HEATING

Mandatory			
☐	Energy efficient water heating	Utilize efficient water heating technologies to reduce energy consumption	EA p2,c1
Recommended			
☐	Tankless gas water heaters		EA p2,c1
☐	Centralized water heating systems	Centralized water heating systems are more efficient than smaller, individual units	EA p2,c1
☐	Waste heat recovery	Consider the capturing of waste heat from water heaters to preheat incoming water or to supplement space heating.	EA p2,c1
☐	Heat pump water heaters	Consider heat pumps as a means of heating water as well as space heating and cooling.	EA p2,c1
☐	Condensing water heaters	Condensing water heaters and boilers run with greater efficiencies than traditional water heaters, thru reducing building energy consumption.	EA p2,c1
☐	Condensing water heaters	Condensing water heaters and boilers run with greater efficiencies than traditional water heaters, thru reducing building energy consumption.	EA p2,c1

RENEWABLE & ALTERNATIVE ENERGY SOURCES

Recommended			
☐	Conduit to roof, unobstructed roof areas & roof framing plan for future photovoltaics	Provide the infrastructure necessary to accommodate future PV installations	EA c2
☐	Green power purchase	Purchase renewable sources of electricity	EA c6
☐	Solar space heating system	Incorporate passive solar heating strategies within the design of buildings	EA p2,c1
☐	Solar water heating		EA p2,c1
☐	Photovoltaic landscape/parking lot lighting		EA c2
☐	Photovoltaics	PV can be integrated into building structures to provide a dual function as sun shades or roofing membranes	EA c2
☐	Dedicated space for on-site distributed energy system	Reserving space for future energy generation systems may prove beneficial amid uncertainty of national energy resources. Dedicated space for on-site energy systems provides flexibility for the future.	
☐	On-site power generation	Options include micro turbines, fuel cells, combined heat and power systems, etc.	
☐	On-site renewable energy	On-site renewable energy reduces harmful emissions while increasing power access reliability. Options for on-site renewables include photovoltaics, wind turbines, solar hot water heaters, etc.	EA c2

CONTROLS & FEEDBACK

Mandatory

☐ Fundamental commissioning	Proper commissioning increases the likelihood that new buildings meet their clients expectations	EA p1
☐ Thermal comfort, design	Comply with ASHRAE 55-2004	IEQ c7
☐ Enhanced feature setback thermostats	Thermostats with setback controls allow temperatures to float during unoccupied periods within the building.	IEQ c6

Recommended

☐ Daylight sensors	Proper daylighting controls save energy without significant changes to occupant comfort	EA p2, c1
☐ Enhanced commissioning		EA p2, c1, c3
☐ Controllability of systems - lighting	Providing occupant with greater control of their local environments can lead to greater productivity, comfort and well-being.	IAQ c6
☐ Controllability of systems - thermal control	Providing occupant with greater control of their local environments can lead to greater productivity, comfort and well-being.	IAQ c6
☐ On-demand energy & water feedback & control	Information on energy and water consumption allows building occupants to connect their actions to the resource consumption levels of the building and increases individual awareness	
☐ Measurement and verification	Measurement and verification of building performance can help diagnose problems more quickly and keep systems running properly	EA c5

8 - WATER EFFICIENCY

Mandatory

☐ High efficiency plumbing fixtures	All buildings shall have high efficiency fixtures to reduce water waste and decrease overall consumption.	WE c3.1, c3.2
☐ Water use reduction - 30% reduction		WE c3.2

Recommended

☐ Energy Star rated appliances	Energy Star rated appliances should be specified when available.	WE c3.1, c3.2
☐ Automatic irrigation systems set to early morning and evening	Conserve water by reducing evaporative losses	WE c1.1
☐ Automatic shutoff faucets	Faucets equipped with automatic shutoffs reduce water waste and should be specified where appropriate	WE c3.1, c3.2
☐ Weather-based evapotranspiration (ET) irrigation controllers	Weather based irrigation controllers automatically adjust to change in weather conditions to minimize weather related evaporative water losses	WE c1.1
☐ Drip or soaker-based irrigations	Drip irrigation conserved water by more effectively delivering it to desired locations.	WE c1.1
☐ Waterless or ultra-low flush urinals	Contributes to lower water consumption and lessens the strain on water infrastructure	WE c3.1, c3.2
☐ Greywater and stormwater reuse	For toilet flushes and site irrigation, strategies can contribute to reduced water waste	WE c1.1, c1.2, c3.1, c3.2

9 - RECYCLING & SOLID WASTE

Mandatory

☐ Storage and collection of recyclables	At a minimum, provide for the storage and collection of glass, plastic, office paper, newspaper, cardboard and metals.	MR p1

Recommended

☐ Hazardous waste disposal	Providing proper disposal infrastructure for hazardous waste reduces the amount of hazardous waste and potentially harmful material included in standard waste receptacles.	MR p1

10 - MANAGEMENT

Mandatory

☐ Tenant design and construction guidelines	Provide tenants with descriptive tools that both educate and help implement sustainable design and construction features of the building	SS c9