



Design Guidelines

June 2009

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Prepared for: **The University of Kentucky**

Prepared by: **EDAW Inc. - Planners**
Cooper Carry - Architects
CARMAN - Landscape Architects/Civil Engineers

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1.0

Introduction

Purpose

The overall objective in establishing design guidelines for site development at Coldstream Research Campus and other development areas of Coldstream Farm is to ensure a sense aesthetic value and environmental sensitivity in the development of the campus.

These guidelines are for use by the University of Kentucky and the tenants of the campus, their architects, landscape architects, engineers, and maintenance personnel in the design, development, and care of the tracts within the Coldstream boundaries.

In no instance are these guidelines intended to be less restrictive than the requirements of the Lexington – Fayette Urban County Government. For any item not covered by these guidelines, the provisions of the P-2 Ordinance covering minimum requirements for development shall apply.



Objectives for Use

The following are the objectives for these design guidelines:

- To promote a high quality park setting for a mix of buildings marked by a consistently high quality of architectural design.
- To assist in the development of a comprehensive open space system for the community.
- To promote and enhance the development of an attractive, effective, and safe transportation network.
- To assure those locating in the campus that the quality of the overall development will remain high; and therefore, that the economic and environmental values will be protected permanently.
- To preserve, enhance, and protect the natural and cultural features of the environment.
- To provide direction for maintenance following development of the site.





Coldstream Research Campus Illustrative Master Plan

Design Review Committee

A Design Review Committee oversees the application of the design guidelines. This committee is comprised of architects, landscape architects, and other design professionals who interpret the guidelines to project tenants and developers, review all plans for building and site design, and serve to discern any special requirements for preservation of natural site characteristics. Official approval of all development and construction plans will be subject to approval of the Design Review Committee prior to imple-

mentation. Construction work will be given periodic inspection by a representative of the Design Review Committee to ensure its compliance with the Design Guidelines. Each proposal will be considered on its own merits. The Design Review Committee will study the natural conditions of each parcel and its development potentials and problems. Each proposal will be evaluated on the basis of its conformance to high aesthetic standards, its relationship to the characteristics of the site, and its compatibility with the development on adjoining parcels.

The process of project applications and design review is described in Chapter 6: Design Implementation.

Master Plan

The master plan for Coldstream Research Campus builds upon the existing fabric of development since its inception in the 1980's. The current plan, dated 2009, has a series of overarching objectives, out of which flows these Design Guidelines. The Design Guidelines are the primary tool to achieve the objectives of the master plan, and as such, have a variety of measurable strategies to effect those objectives.

Objectives include:

- The creation of a walkable community, one in which the standard of measure is the human, not the automobile.
- The evolution toward a mixed use community in which to work, live, shop, and recreate.
- The preservation of the natural systems of Cane Run and its tributaries.
- The enhancement of the cultural landscape around the Carnahan House and its incorporation into a mixed use town center for the campus.
- The creation of a comprehensive open space network connecting all developed areas within the campus to each other with walking and bicycle trails to reduce vehicular trips.
- The creation of a compact street grid with small parcel sizes and small setbacks to produce a human-scaled neighborhood pattern of development.
- The inclusion of local retail within office and residential buildings across the campus to reduce vehicular trips.
- The provision for a wide variety of building types and sizes to best meet the diverse needs of the marketplace.
- The inclusion of principles of sustainability into planning, design, and maintenance of the campus to set a benchmark for environmental stewardship within the region.
- The establishment of a benchmark of LEED certification for all commercial buildings and an energy star rating for residential buildings. LEED Silver commercial buildings are strongly encourage.

Site Design Criteria

Purpose

This chapter addresses the qualities of the common areas of Coldstream Research Campus. Common areas are those outside of lease lines and include green spaces and roadways. These areas create an impression of the character of the campus through both hard materials – pavements, walls, lights, etc. – and soft materials – plants, berms, and bodies of water. It is the intent of these Design Guidelines that the common areas have a consistent character that builds upon the beauty of the existing landscape of the campus.

The master plan for Coldstream Research Campus is a framework for development of a variety of building types, all set within a verdant park setting. This concept builds upon the existing green infrastructure of parks, historic grounds, and floodplains. Collectively, these existing open spaces create a valuable and scenic common area that benefits users and visitors to the campus. The master plan envisions additional green areas to create a comprehensive network of green spaces that encourage walking, provide storm water management, and provide for active and passive recreation. In addition to green spaces, roadways are a critical part of the public realm of Coldstream Research Campus. Both existing and proposed roads are a part of the master plan and each type has a unique set of guidelines that shape its character. One of the overarching concepts of the master plan is to transform the existing paradigm of automobile-scaled environment toward a more human scaled environment. To that end, guidelines are proposed herein that suggest some critical spatial relationships that will lead in that direction.



Existing condition at the Quadrangle.

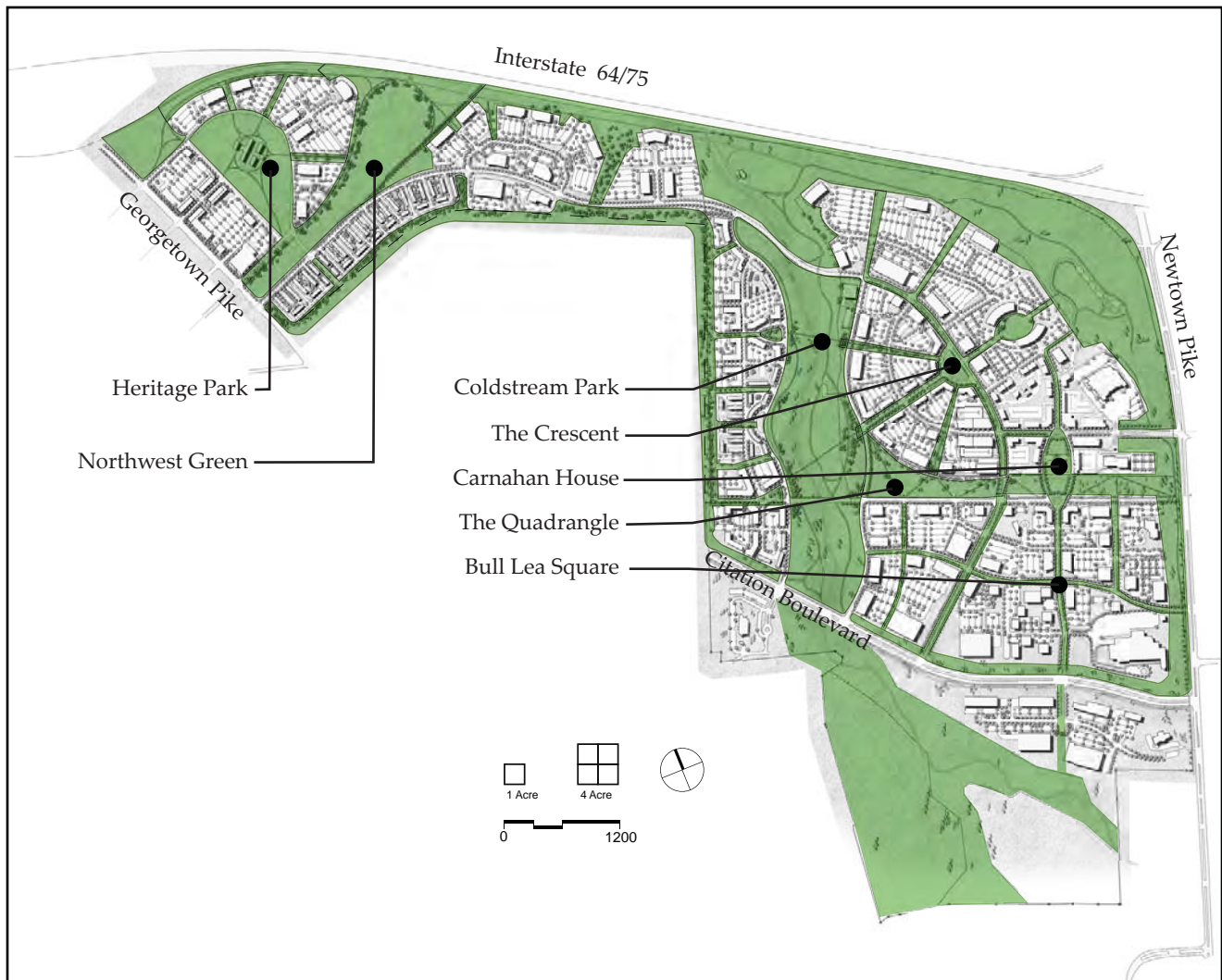


Existing stone wall along Newtown Pike.

Green Spaces

Coldstream Park: This area is a 225-acre park containing Cane Run and a tributary of Cane Run that adjoins Interstate 64/75. It is owned by Lexington – Fayette Urban County Government and is open to the public, with trails and parking areas in place. In the master plan, a few improvements are envisioned; notably a pair of pedestrian bridges to cross the stream and a pair of road crossings as well. In addition, a series of new trails are proposed to provide continuous walking opportunities both east and west of Cane Run itself. These improvements would require approval of Lexington – Fayette Urban County Government prior to implementation.

Carnahan House: The Carnahan House is the historic center of the research campus and both the house and its grounds should be retained and enhanced. The master plan proposes to preserve the existing entry drive and tree grove area east of the house, and to supplement that with additional trails to provide more walkability. The existing stone walls should be retained as is, but with two pedestrian openings of 6 feet in width created; one each on the north and on the south walls to allow for better pedestrian access to this grove. The immediate setting of the house itself is envisioned in the master plan to be adapted into an elliptical-



Green Space Plan



Existing Carnahan House.

shaped public green of 275 feet x 600 feet. This area would capture the house, its driveway approach, and immediate landscape, but would remove parking, outbuildings, and a swimming pool. New parking and service would be provided in the ellipse for the adapted reuse of the house as a restaurant, meeting facility, or bed and breakfast. The intent is to create a vibrant future for this historic building in a new public setting. The roads that frame the ellipse would provide a new north – south access for both vehicles and pedestrians to traverse the campus, and the construction of these would require some selective removal of existing stone walls in this area.

The Quadrangle: The quadrangle is a new green space that is the extension of the historic grove of trees and lawn that is the driveway approach to the Carnahan House from Newtown Pike. It stretches from the house to Coldstream Park, creating a green ribbon from east to west and capturing the two primary natural and cultural landscapes of the campus into one continuous landscape. The south side of this green is a straight line, echoing the straight line of the stone wall of the Carnahan House and signifying the cultural landscape, while the north side forms a graceful curve that flows to Cane Run and signifies the natural landscape. Reinforcing this notion is the landscape itself, with formal rows of trees on the south side and informal groves of trees on the north side. A series of walks are proposed in the quadrangle and connect access points from outside across the green to each other in a stitching pattern, to facilitate easy pedestrian

movement both east/west and north/ south, much like in a quadrangle on a college campus. Benches and other site furniture are envisioned throughout the quadrangle to make it both passage and destination for users and visitors. The quadrangle should be 75% pervious and feature a minimum tree canopy coverage of 30%. To denote the mission of the research campus as a place of innovation and technology, a series of helical wind turbines are proposed along the south side of the quadrangle from Newtown Pike across Cane Run itself. These turbines would be placed at 400-foot to 500-foot intervals and are envisioned as 60 feet in height. They would serve as highly visible symbols of 21st century technology and generate power that could be utilized to operate lighting in the park. Thus, the quadrangle is envisioned as the civic green for the campus, with respect to the past, but technology that speaks to the future.

The Crescent: The Crescent is about one acre of green in the Northeast Village on McGrathiana Parkway. It is a formal space intended to serve as passive recreation for the mixed use community adjoining it. It is envisioned as predominantly lawn, with a surrounding walk and trees that shade the walk. Benches and trash receptacles should be provided for the comfort and convenience of pedestrians. Shade structures, public art, or fountains may be a part of the program, but are not required. The Crescent should be 75% pervious and feature 50% tree canopy coverage.

Bull Lea Square: Bull Lea Square is a quarter acre park and plaza that straddles Bull Lea Road on the north side of its intersection with Street A. It is envisioned as a sunny pocket park onto which retail uses like a delicatessen or coffee shop may front. It is proposed as a mix of lawn, against Street A, and paved plaza, against the pair of enframing office buildings. In this manner, the walkway adjacent to the buildings may function as an outdoor café in the mild seasons, with umbrella tables and chairs providing shade and seating. This walkway should be a minimum of 15 feet wide and a maximum of 25 feet wide to accommodate that intended use. Retail storefronts and entry doors should face directly upon the square, with no vehicular conflicts. The square should be 50% pervious and feature 30% tree canopy coverage.



Section through the Ellipse at the Carnahan House.



Section through the Quadrangle.

Roadways

The roadways of Coldstream Research Campus carry vehicles, bicycles, and pedestrians to and through the site. Varieties of road types exist or are proposed to provide that circulation. These include:

Level 2: Major Arterial

Newtown Pike

Level 3: Minor Arterial

Citation Boulevard

Level 4: Collector Road

McGrathiana Parkway
Aristides Boulevard
Bull Lea Road
Eastern/Western Parkway

Level 5: Local Street

Street A
Street B
Street C
Street D



Existing condition at New Town Pike.

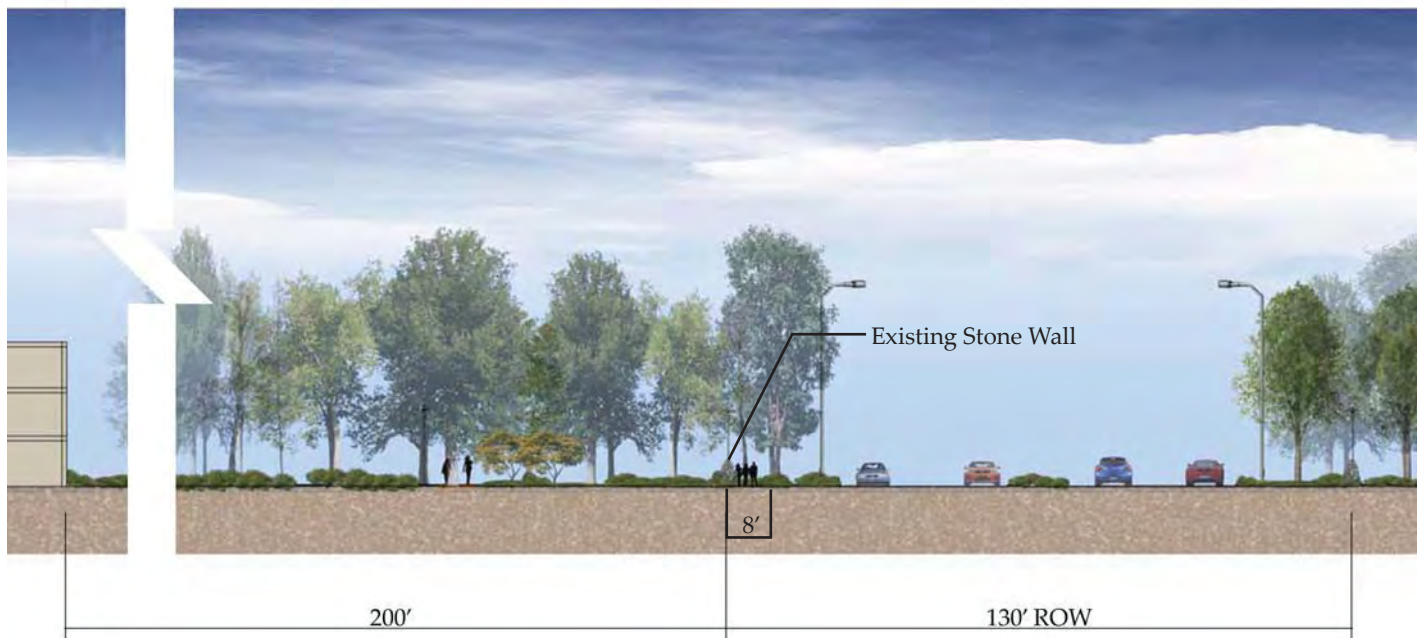


Existing condition at Citation Boulevard.



Roadway Network Map

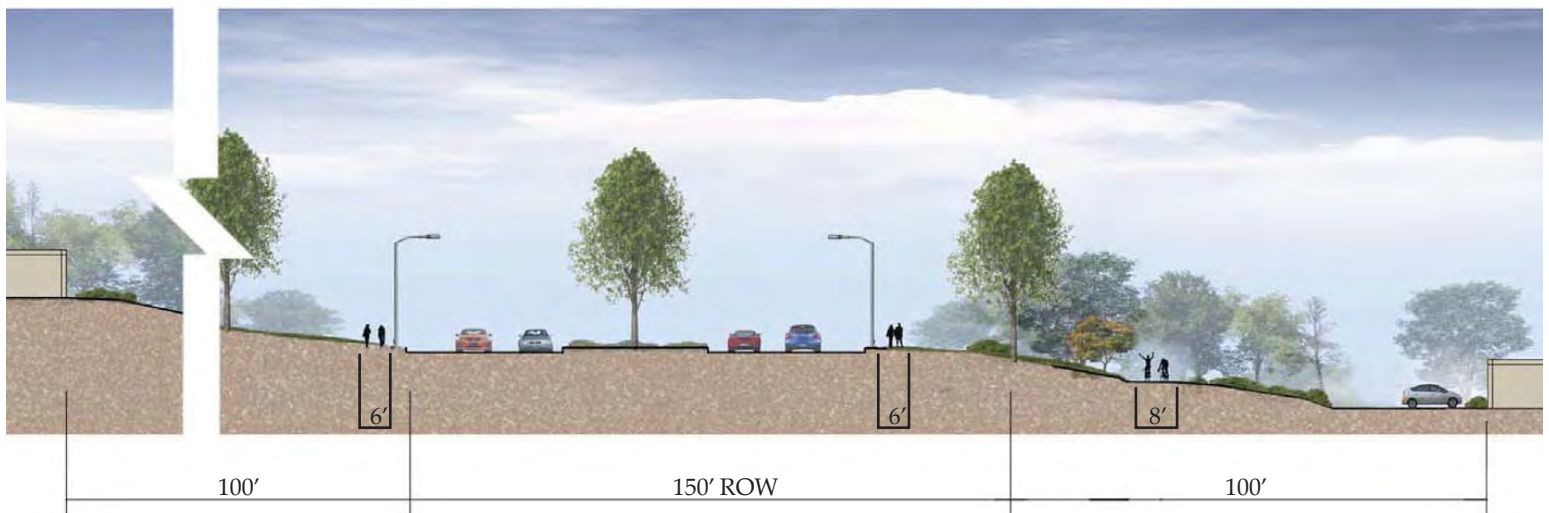
Level 2: Major Arterial



Newtown Pike

Right of Way: 130 feet; No on-street parking
 Speed: 55 mph
 Building Setback: 200 feet
 Sidewalk: 8 foot asphalt trail
 Landscape character: Informal

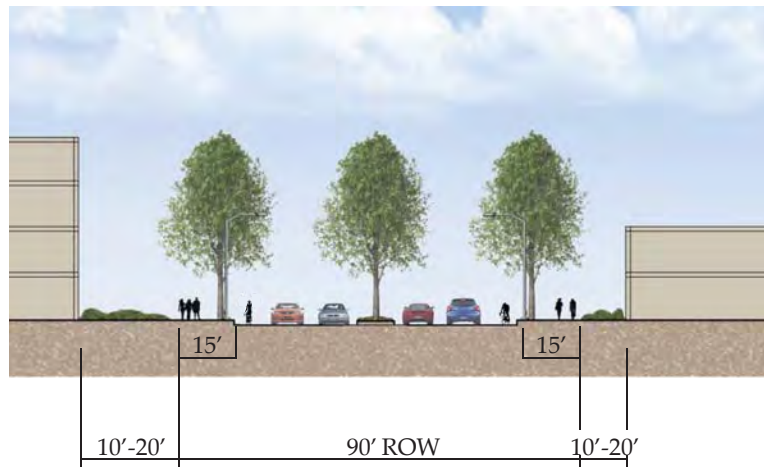
Level 3: Minor Arterial



Citation Boulevard

Right of Way: 150 feet; No on-street parking
 Speed: 45 mph
 Building Setback: 100 feet
 Sidewalk: 8 foot asphalt trail on north side
 Landscape Character: Informal

Level 4: Collector



McGrathiana Parkway

Right of Way: 90 feet; No on-street parking

Speed: 35 mph

Building Setback: 10 feet minimum; 20 feet maximum

Sidewalk: 8 foot concrete both sides in Northeast Village; one side in Northeast and Northwest Villages

Landscape Character: Formal; street trees at 40 foot centers



Aristides Boulevard

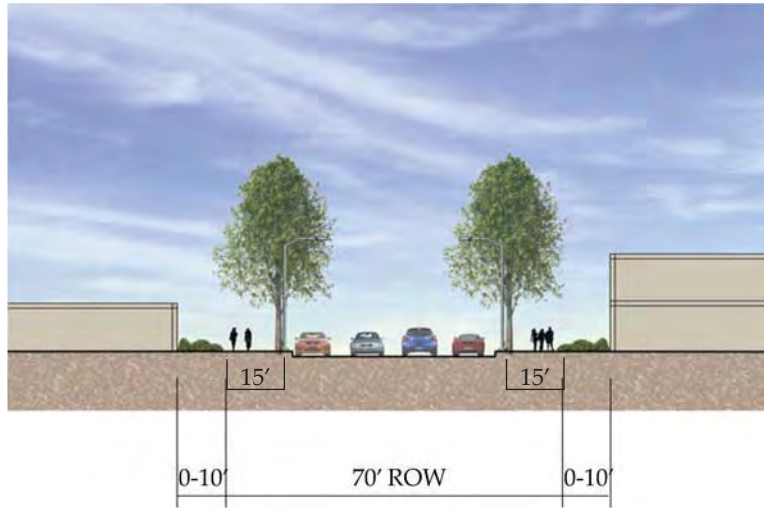
Right of Way: 70 feet (Carnahan Center area); On-street parking both sides

Speed: 25 mph

Building Setback: 0 foot – 10 feet

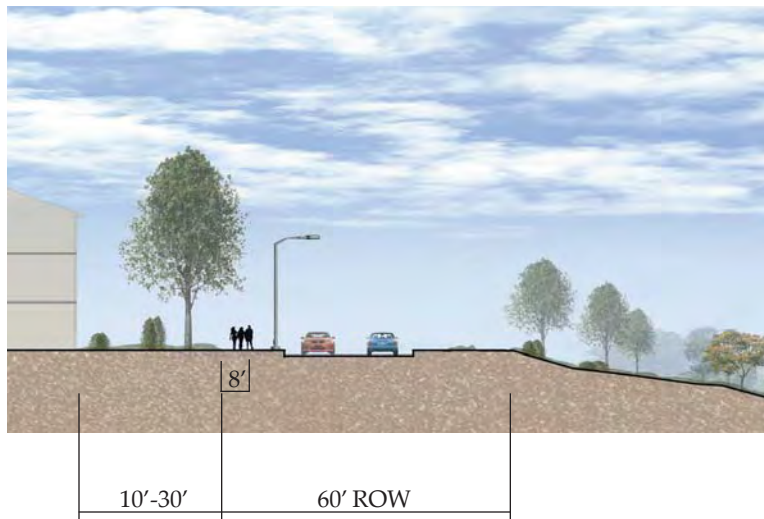
Sidewalk: 15 foot pavers both sides in Carnahan Center; 10 foot concrete beyond

Landscape Character: Formal; Street trees at 30 foot centers



Bull Lea Road

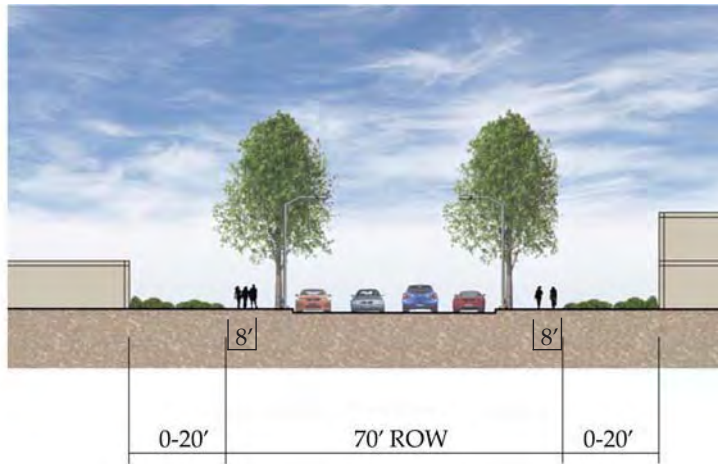
Right of Way: 70 feet; On-street parking both sides
 Speed: 25 mph
 Building Setback: 0 foot – 10 feet maximum
 Sidewalk: 15 foot pavers both sides in Carnahan Center; 10 foot concrete both sides
 Landscape Character: Formal; Street trees at 40 foot centers



Eastern Parkway Western Parkway

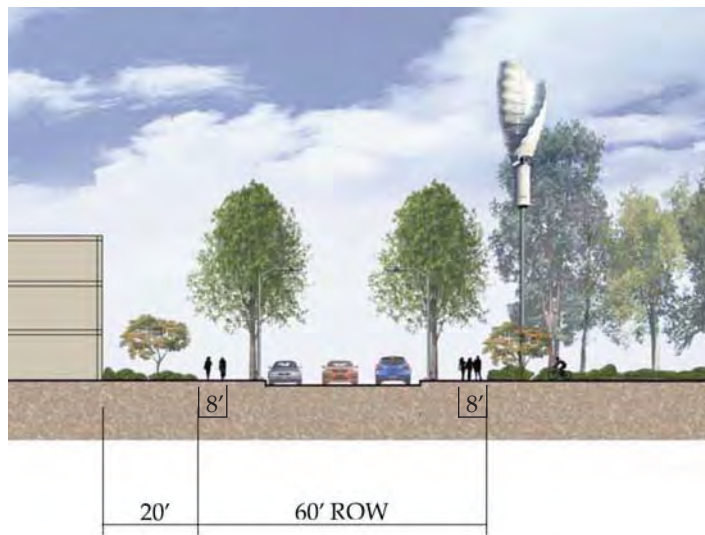
Right of Way: 60 feet; No on-street parking
 Speed: 35 mph
 Building Setback: 10 feet minimum; 30 feet maximum
 Sidewalk: 8 foot concrete on building side only

Level 5: Local Street



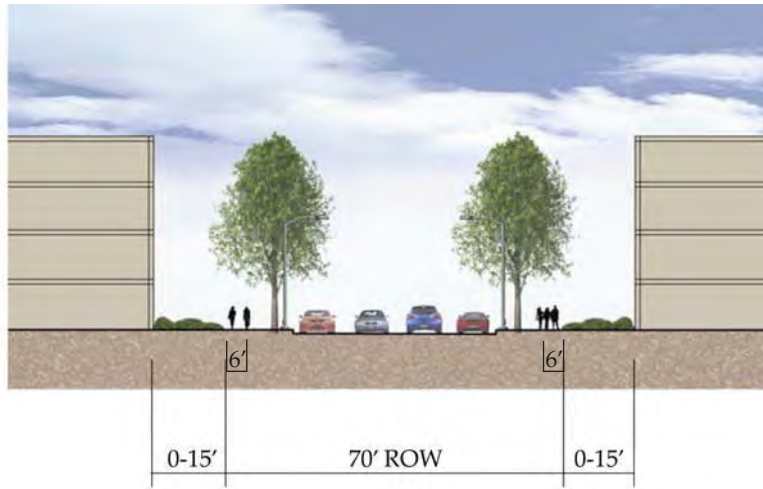
Street A

Right of Way: 70 feet; On-street parking both sides
Speed: 25 mph
Building Setback: 0 foot – 20 feet maximum, except at square
Sidewalk: 8 foot concrete both sides
Landscape Character: Formal; Street trees at 40 foot centers



Street B

Right of Way: 60 feet; On-street parking building side only
Speed: 35 mph
Building Setback: 20 feet
Sidewalk: 8 foot concrete both sides
Landscape Character: Formal; Street trees at 40 foot centers



Street C

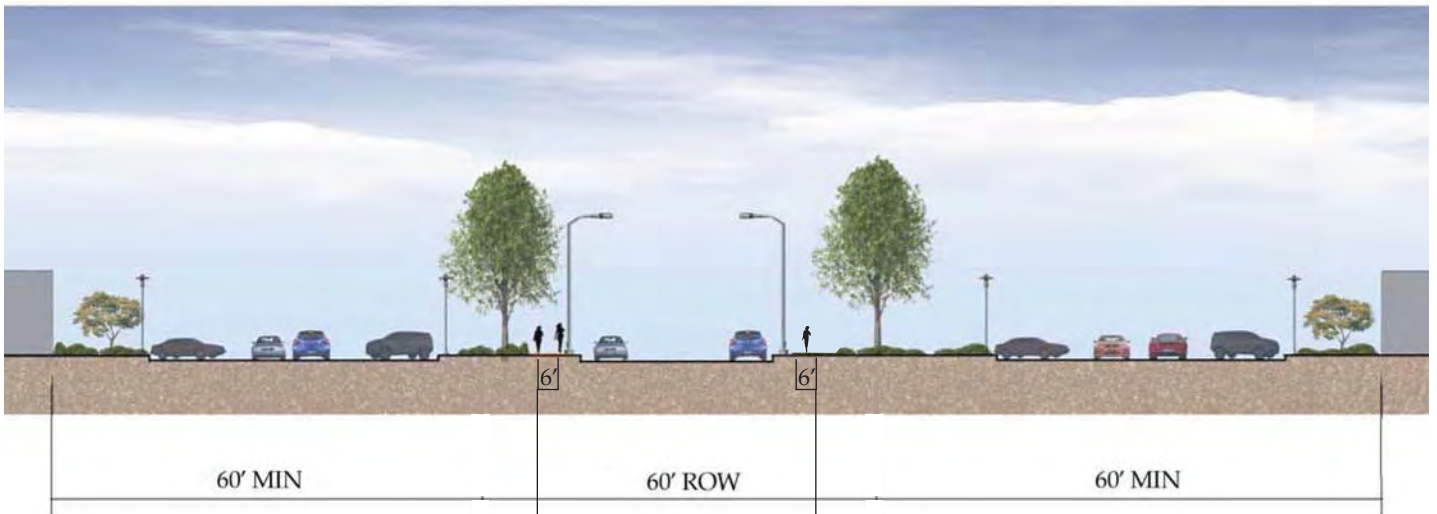
Right of Way: 70 feet; On-street parking both sides

Speed: 25 mph

Building Setback: 0 foot – 15 feet maximum

Sidewalk: 6 foot concrete both sides

Landscape Character: Formal; Street trees at 50 foot centers



Street D, E, F, G

Right of Way: 60 feet; No on-street parking

Speed: 25 mph

Building Setback: 60 feet minimum

Sidewalk: 6 foot concrete one side

Landscape character: Informal; Street trees at 60 foot centers

Site Development Guidelines

Purpose

This chapter describes the character and quality of building development within leased parcels. The information contained herein sets the standards for quality that will protect and enhance Coldstream Research Campus as it grows in the future. The information should be used by corporations, developers, architects, landscape architects, and engineers as they prepare site plans for individual buildings and parcels. The intent is to foster a consistent level of quality and conformance to the master plan, so that the individual projects contribute to the overall ambience and value of the campus.

The master plan anticipates future building patterns with a distinctly different character than the existing patterns. The existing pattern features generous setbacks from streets, parking in the front yard, and inconsistent relationships between a building and the street it addresses. This has resulted in a sprawling, automobile-scaled environment. The pattern of the master plan features smaller setbacks from streets, little parking in the front yard, and a consistent relationship between a building and the street it addresses. This will result in a walkable, pedestrian-scaled environment. The primary siting difference from the existing pattern to the proposed master plan lies in what is termed “streetwall” buildings; buildings that have a direct connection and orientation to the street upon which they front. The following guidelines illuminate the criteria necessary to achieve that end result.

Building Locations

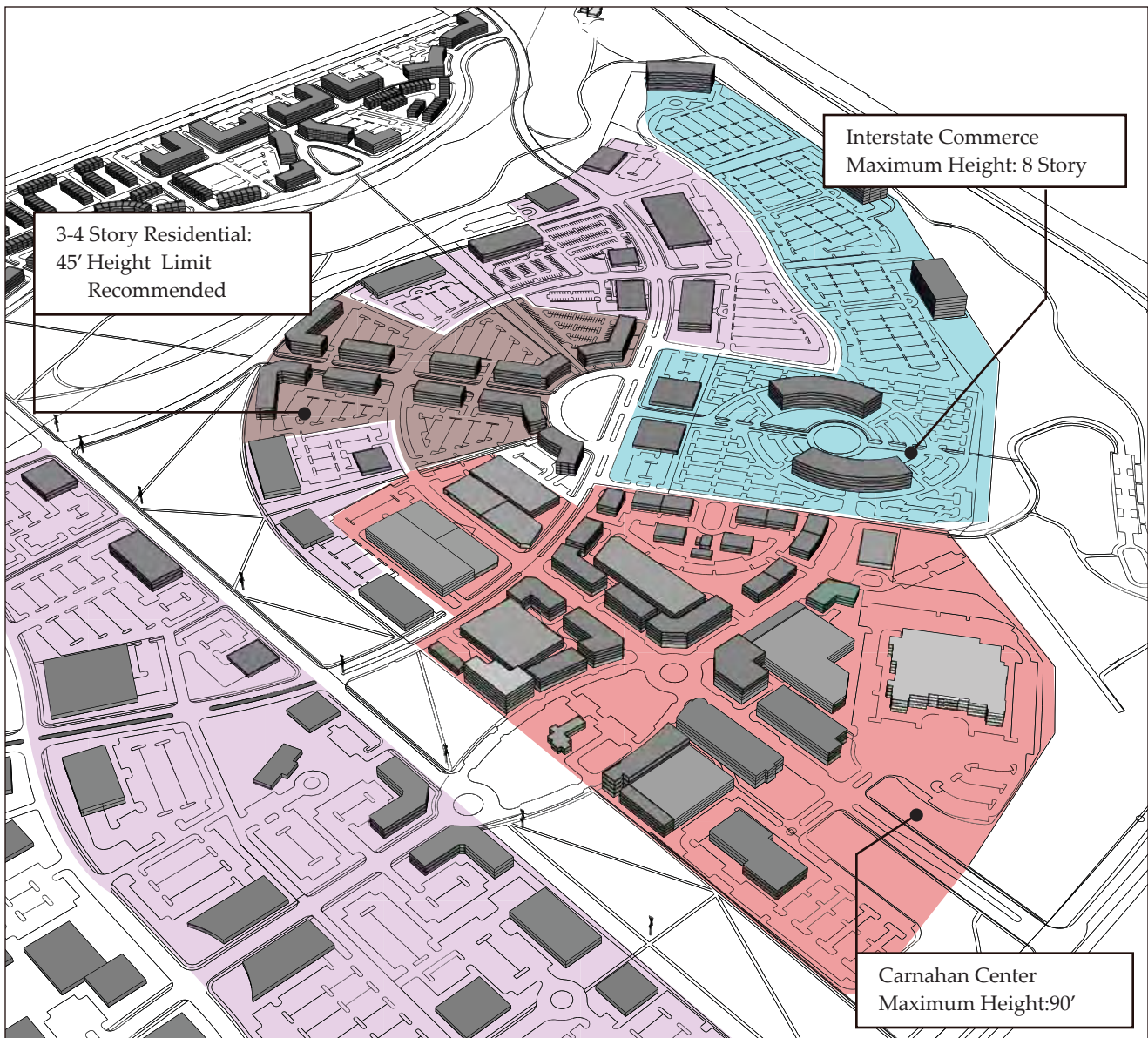
Parcels for lease in Coldstream may be developed for one building or a series of buildings, depending upon the size of the parcel. As described in the master plan, whether a single building or multiple buildings, any building shall have its front yard and address on a street. Since the streets in the campus vary in terms of scale, building setbacks vary as well. In Chapter 2, each street type is illustrated, with a menu of building setbacks. Setbacks are defined as the horizontal distance from right of way line of street to building façade. Applicants should note that in Coldstream there are some setbacks that include both minimum distance and also maximum distance. The maximum distance criteria is included to create the pattern of street-wall buildings described above, and mandates that buildings directly address the street onto which they front. Further, all buildings shall have an entry on the front yard with a walkway that leads directly to the street and sidewalk.

The side and rear yards for any building shall conform to standard zoning ordinance requirements, without additional requirements from these design guidelines. That said, in the case of a building that lies at the corner of two streets, each façade that addresses each street shall conform to the setbacks for each street. The intent is to consistently align streets with buildings. Therefore, it follows that parking, circulation, and services areas should be in the side or rear yards. As a practical matter, if the majority of parking fields are in the rear yards, it follows that an entry should be provided on the rear yard façade of the buildings. This may, on a daily basis, serve as the primary entry, but it does not relieve the applicant of the obligation to provide an entry on the front yard.

Building Height / Mass

The height of a given building varies by use and location within the campus. In general, the intent is to promote new building heights that are in harmony with the existing building heights. In most areas of the campus, a 45 feet height limit is recommended. This would support up to a 3 story office or up to a 4 story residential building, uses that are proposed

throughout the master plan. Certain particular areas or neighborhoods are planned for higher buildings. These include Interstate Commerce, which should have an 8 story height restriction as it lies adjacent to the interstate highway and Carnahan Center, which should have a maximum height of 90 feet to allow for a robust mix of retail, office, residential, and hotel uses as envisioned in the master plan.



Master Plan volumetric study.

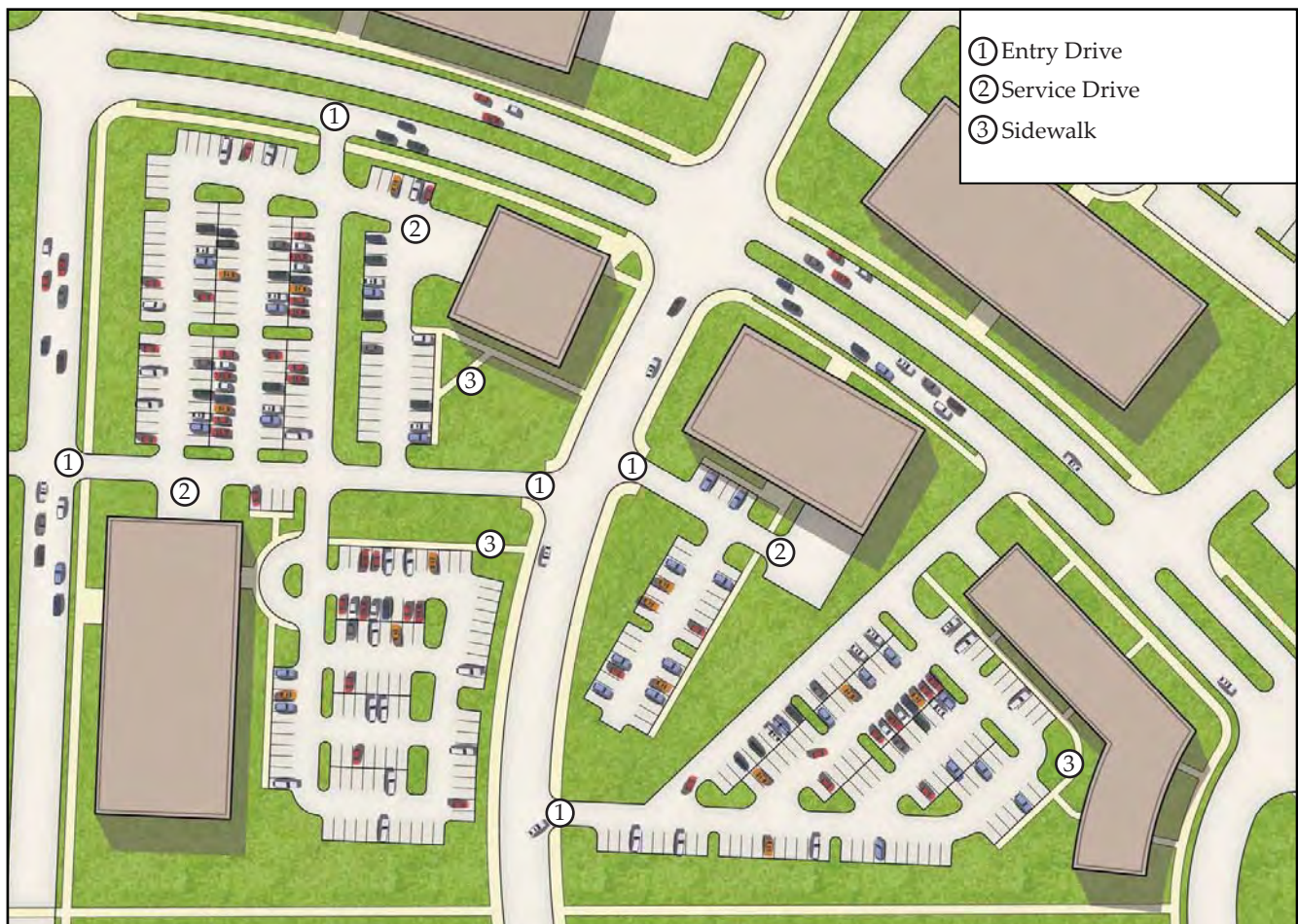
Site Circulation

There are three types of circulation systems to be included in any parcel or building development plan: vehicular, pedestrian/bicycle, and truck/service vehicle. Many times, these systems are co-located but each has different requirements that must be addressed.

For vehicles, there should be a clearly defined access drive from the street which should be 24 feet minimum and 30 feet maximum. Buildings over 75,000 SF may have 2 such entry drives, but no more than 2 entry drives are permitted for any single building. Parcels of multiple buildings may have up to 3 entries, unless the parcel is over 10 acres, in which case up to 4 entries are permitted. For any building or

parcel with multiple entries, these shall be a minimum of 200 feet apart from each other and also from any street. The intention for these guidelines is to provide adequate vehicular access without compromising the continuity of pedestrian sidewalks that follow streets. For buildings or parcels over 100,000 square feet, there should be a main circulation drive leading from street to building without perpendicular parking along it. Parallel parking on such an approach drive is permitted.

For trucks and service vehicles a separate cartway is not required, but where the site permits, a separate drive from street to service yard is encouraged, especially for users with



Site Circulation.



Multi-use pathways (class 1) can be used by both pedestrians and bicyclists.



In-street bicycle paths (class 2) should be clearly defined.

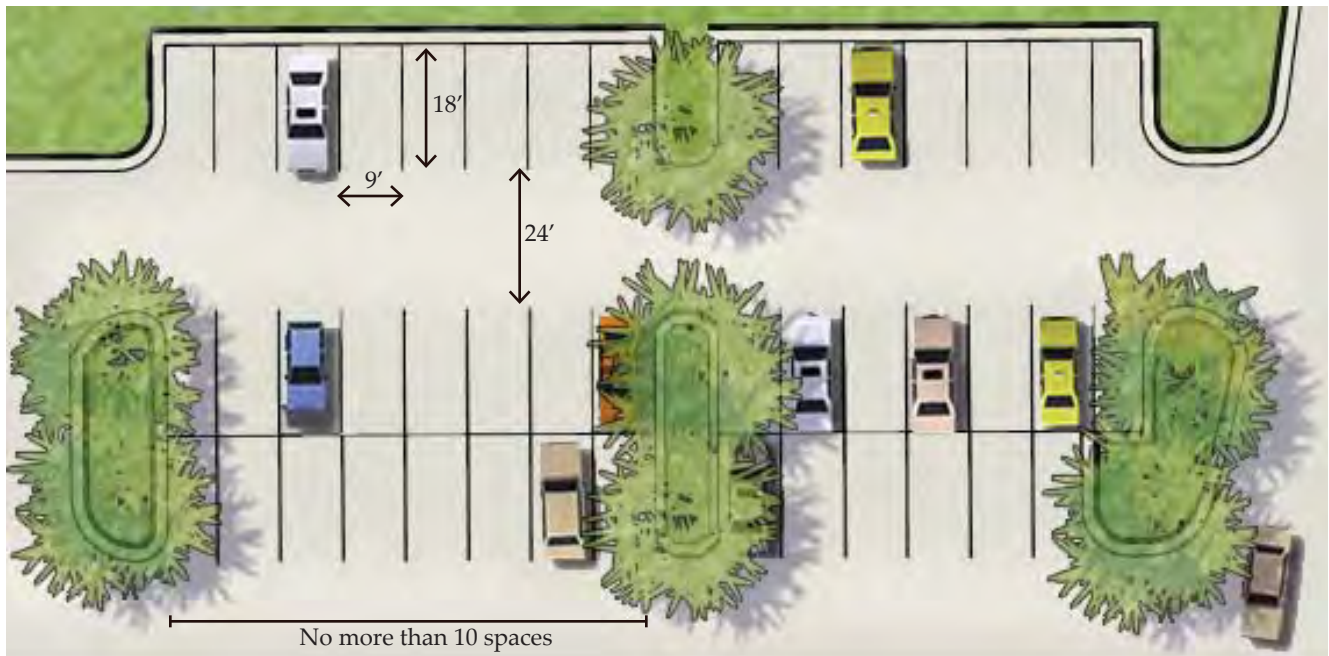
multiple tractor trailer loading docks, so that the large truck movements are not through parking fields. All truck turning movements shall be within a given parcel and are not permitted within a street right of way. When trucks and cars share the drive, care should be taken in the site plan to accommodate the large turning radii of trucks.

Pedestrians and bicyclists should have continuous access within a parcel from the street to the building entry in a manner that meets the standards of ADA and with a minimum of vehicular conflict points. Pedestrian paths shall be a minimum of 6 feet wide. Separate Class 1 bicycle lanes are not required within a parcel, but Class 2 shared bicycle lanes of 5 feet width are encouraged to reduce vehicular trips.

Parking

Parking is a necessity in the campus, but in many cases can detract from the overall campus if its extent is uncontrolled. It is the intent of these guidelines to utilize low impact development strategies to mitigate the negative aspects of parking including increased storm water runoff, decreased water quality, and heat gain. Parking fields should consider the smallest possible footprint of impervious surface, utilizing 9 feet x 18 feet spaces with 24 feet drive aisles, yielding a tray of 60 feet. Provision of 10% compact spaces at 8.5 feet wide is encouraged to reduce that footprint. No more than 10 spaces in a row may be provided without

a planted island of 9 feet wide to support a shade tree. In addition, 10% of the interior area of a parking field shall be devoted to planted islands. These islands shall not be smaller than 9 feet x 18 feet in size. Note that the interior area is defined as that area within the overall paved outline of the parking field; in this manner, corners where two parking trays intersect count towards interior area, while perimeter green space does not. Where parking fields abut a street, a continuous evergreen hedge or shrub mass shall be provided with a height of 4 feet to visually screen the parked cars from public view.



Recommended Typical Parking Layout;

Add planted medians with shade trees to reduce heat island gain and to provide areas where storm water could infiltrate into the ground. Landscaped areas will also help with enhancing the appearance of a parking area by reducing the amount of visible pavement.



Example of a Lower Case



Example of porous pavement.

Bioswales are encouraged on the perimeter of parking fields. Bioswales are shallow depressions filled with water tolerant plantings that capture the first flush of storm water and absorb much of it into the groundwater through the plant root systems, thus reducing downstream runoff. The absorption process cleanses road salts, oils, and fertilizers from the water, and thus improves water quality as well. Bioswales may be provided within a parking field or at its perimeter and should feature a curbless edge to facilitate the capture of rain water. However, care should be taken to include curb stops in this instance, so that cars do not drive into the bioswale. It is also critical to coordinate the site grading plans with any consideration of using bioswales so that drainage is effective. Bioswales have specific requirements for soil mix, subbase, drain pipes, and plantings and should be designed by a licensed landscape architect or engineer.

Porous pavements are also encouraged in parking fields to reduce storm water runoff and to polish rain water. This pavement type is structurally appropriate for parking areas, but features voids in its surface to allow for rain water to percolate through the pavement. Concrete, asphalt, and precast concrete pavers are various types of porous paving that may be considered.

Heat gain from paved areas and rooftops has been linked to global climate change. There are two ways that parking fields can reduce heat gain. One is to utilize pavements with high albedo (light color) for better reflectivity of solar heat. In this manner, a light colored concrete would be favored over a dark asphalt. A second way to mitigate heat gain is to shade the pavement. The guideline for planted islands stated above will go far to reducing heat gain. In addition, trees around the perimeter of a parking field are encouraged. It is worth noting that certain shade trees are water tolerant and therefore could be included within a bioswale, doubling the benefit.

Service Areas

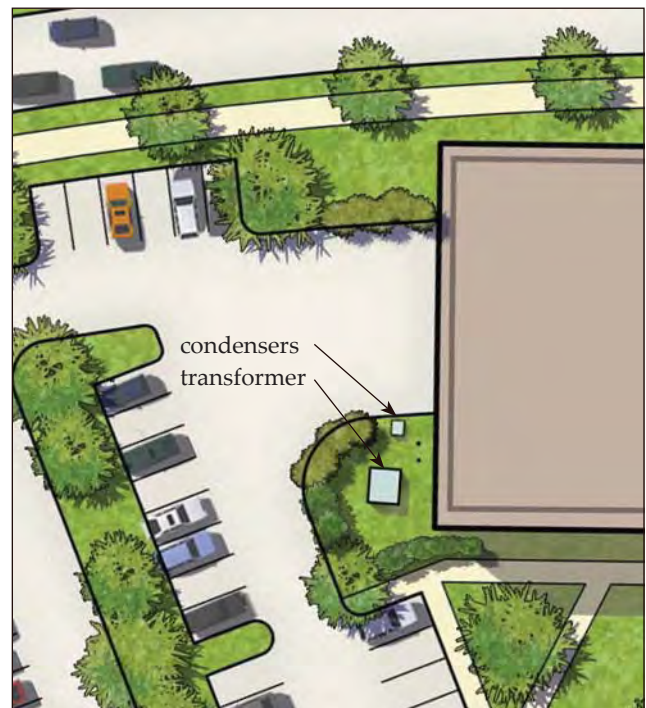
Service areas for loading, utilities, and waste management are a necessary function but should not detract from the overall appearance of the landscape and park setting. To that end, no such service facilities shall be placed in the front yard of any building. Such facilities may occur in the side or rear yard and shall be screened from view from any street with an opaque screen, the type of which varies by the facility.

Loading areas are typically expanses of pavement that allow for truck turning movements as well as loading/unloading of materials and supplies. In the case of some office buildings with limited service needs, truck docks may be within the building footprint, and therefore no additional screening is required. In the case of some research or manufacturing buildings with multiple docks and large service trucks, these areas shall be screened from view from any street by a 6 feet high masonry wall that is of the same material as the building or a double row of evergreen trees of 6 feet height. Berms may be substituted for plantings or walls if space permits, as long as a total height of 6' is achieved. Wood fences are not permitted as a screening device.

Utilities, including transformers, condensers, satellite dishes, back flow preventers, etc. should be screened from view from streets to the extent practicable, given that some access to them is required for routine maintenance. Care should be taken in the development of a site plan to coordinate these features and to consolidate them into one area, rather than have them strewn about the landscape. Where utilities are co-located within loading areas, the screening wall provided for the loading can be extended to include the utilities. The preferred color for such utility structures is black and the preferred method of screening is with evergreen shrubs as part of larger landscape design. Individual utilities with individual walls or fences are not encouraged, and therefore care should be taken in the site planning process to illustrate comprehensively all such utility structures.



Planted berm serve as a screening device.



Utilities treatment in service area.



Example of an LED pedestrian lighting fixture - BEACON Products.



Example of an LED pedestrian lighting fixture - GARDCO Radiant model.



Example of a dark-sky compliant full cut-off street/parking lighting fixture - GARDCO ECOLume model.

Waste management is an issue of health and safety and all such facilities shall meet health department codes. In addition, dumpsters and recycling bins should be visually and physically screened from view. Where practical, these should be located within the building footprint. When in a service yard, dumpsters shall be screened with a 6 feet wall for office, retail, hotel, and laboratory buildings that is of the same material as the building. Toxic, hazardous, or medical waste and material shall be stored in locked containment areas in accordance with health department and environmental regulatory agency requirements.

All dry utilities within a parcel shall be underground. This includes electric, cable, communication, and fiber optic. Care should be taken to aggregate such dry utilities into defined corridors to maximize opportunities for landscape planting throughout the site and to minimize excavation areas for routine maintenance and replacement.

Site Lighting

Parking fields and pedestrian paths within a parcel shall be adequately illuminated for public safety. Two types of exterior lights should be considered for that purpose: roadway/parking light masts and walkway light poles.

For the roadway/parking lights, the height of the mast shall not exceed 24 feet and the poles should be spaced accordingly for even illumination. The lamp should be a downlight or cutoff type, to avoid light spill toward the sky or adjacent parcels. The light source should be metal halide, LED, or color corrected high pressure sodium. Standard high pressure sodium produces a yellow cast which renders landscape plantings as brown, so a color corrected version is preferred.

For walkway lights, the height of the pole shall not exceed 14 feet, nor be less than 10 feet in height. These fixtures shall be spaced accordingly along pedestrian walks to provide a minimum average footcandle reading of 1.0. Like roadway lights, pedestrian lights should be downlights and share a common light source within a given parcel, for an even and consistent reading throughout the parcel. Consideration should be given to energy efficiency in selection of light fixtures, with LED

sources currently having the most efficient output, then color corrected high pressure sodium, then metal halide.

Site lighting fixtures should be black or anodized bronze in color to blend into the landscape during the day. Contemporary style is preferred over classical or traditional styles, in keeping with the character of the architecture of the campus. Floodlighting of building facades is discouraged as it causes unnecessary light spill into the night sky, though selective downlighting of facades is allowable.

Signage

Building and parcel identity is an important component of wayfinding and efficient circulation throughout the campus. To that end, both building mounted signs and freestanding signs are permitted. Any and all such signs must first conform to Lexington/Fayette Urban County Government ordinances. Beyond those legal requirements, the intent of these design guidelines is to create signs that are clear, simple, direct, and appropriately scaled for their intended purpose.

Landscape Plantings

The existing landscape of Coldstream Research Campus is one of the great strengths of its character; its historic groves of trees, vast sweeps of bluegrass, and natural riparian areas associated with Cane Run contribute to a beauty and tranquility that adds terrific value to the campus. The planted landscapes of the roads and existing research buildings have respected that landscape ethic and it is the intent of these guidelines to continue that standard of quality. Landscape plans submitted by an applicant shall be produced by a licensed landscape architect.

To that end are a series of guidelines that will assist applicants in the creation of landscapes that fit within the existing patterns and will add value to the overall campus. In the front yard of any building, shade trees are encouraged, depending upon the building setback and the presence of street trees along the street. Where the setback is 20 feet or greater, shade trees are encouraged. Where the setback is less than 20 feet, shade trees should not be planted, and either flowering trees, shrubs, or groundcovers are more appropriate to the available space.



Existing condition at the Quadrangle.

Evergreen trees are not permitted in the front yard.

In the side and rear yards, a variety of shade, flowering, and evergreen trees are encouraged, in either formal or informal patterns, depending upon the architectural context. In general, a formal architecture setting should have a formal landscape plan, while an informal architecture setting should have an informal landscape plan.

Landscape plans should avoid the practice of monoculture, which is the use of large quantities of a single species, as the occurrence of a pest or disease could decimate a given parcel. It is preferred to intermix species to minimize that risk. There are certain circumstances in a formal landscape where consistency is desirable, but judgment should be used to avoid monoculture. Therefore, a strategy for parcel landscape is that no single species should represent more than 25% of landscape plantings.



Landscape treatment plan.

Native plantings are preferred over exotic plants, as they require less water and maintenance for healthy growth. These plantings are more likely to reseed themselves and be resistant to pests, fungi, and diseases. Native plants also contribute to wildlife habitat with a variety of nuts, berries, and seeds as food sources for animals. The landscape plant palette which follows provides a list of native plants appropriate to Coldstream Research Campus.

In parking areas, the guidelines from that section above apply as far as quantity. As far as type, all parking islands should be planted with shade trees for maximum pavement cooling. Flowering trees and evergreen trees should not be used in parking islands. At the perimeter of a parking field, evergreen trees are appropriate as a screening material. Care should be taken in the design of such buffers so that they fit within the overall landscape concept and do not stand apart from it. For example, in a formal landscape, an informal evergreen mass would not be appropriate; similarly, a straight evergreen hedge set within an informal landscape would be equally inappropriate. The intent of a landscape screen is that it fits seamlessly into an overall pattern.

Recent studies have demonstrated that lawn areas can contribute to strong concentrations of nitrogen and phosphorous runoff into waterways, a leading source of non-point pollution in watersheds. While the Lexington area is known worldwide for its bluegrass, it is the intent of these guidelines to improve water quality while creating a memorable landscape. Therefore, care should be taken in landscape plans to provide judicious use of lawn areas, and not simply have lawn as the ubiquitous groundcover for everything not paved. Two strategies are recommended here. One is to use organic fertilizers for any lawn area to reduce the quantities of nitrogen and phosphorous, and the second is to consider the use of native grasses, forbs, and perennials to create meadows as a landscape type. Meadows would be appropriate at the perimeter of a site and not appropriate in the front yard. Meadows could also be placed next to bioswales (a bioswale is a form of a wet meadow) to form a large sweep of native plant-



Native plant landscaping reduces long-term project expenses landscape maintenance requirements.



Low evergreen shrubs screen the objectionable view of the parking lot behind.

ings. The value of a meadow lies in its ability to sustain itself without undue mowing, fertilizers, pesticides, or irrigation. That said, meadows, to be successful, need to be expansive in size, and therefore, judgment must be used in the inclusion of a meadow within a parcel landscape plan so it fits within the overall plan.

RECOMMENDED STREET TREES	
Acer rubrum 'Arm Strong' 'Autumn Flame' 'Columnar' 'October Glory' 'Red Sunset'	Red Maple
Acer saccharum	Sugar Maple
Platanus X acerifolia	London Planetree
Platanus occidetnalis	American Sycamore
Quercus acutissima	Sawtooth Oak
Quercus alba	White Oak
Quercus bicolor	Swamp White Oak
Quercus coccinea	Scarlet Oak
Quercus imbricaria	Shingle Oak
Quercus muehlenbergii	Chinkapin Oak
Quercus phellos	Willow Oak
Quercus shumardii	Shumard Oak
RECOMMENDED SHADE TREES	
Betula nigra	River Birch
Carya glabra	Pignut Hickory
Carya ovata	Shagbark Hickory
Celtis laevigata	Sugar Hackberry
Celtis occidentalis	Common Hackberry
Diospyros virginiana	Common Persimmon
Fagus grandifolia	American Beech
Gymnocladus dioicus	Kentucky Coffeetree
Juglans nigra	Black Walnut
Liquidamber styraciflua 'Festival' 'Moraine'	Sweetgum
Liriodendron tulipifera	Tulip Poplar
Metasequoia glyptostroboides	Dawn Redwood
Nyssa sylvatica	Black Gum
Ostrya virginiana	American Hophornbeam
Taxodium distichum	Bald Cypress
Tilia americana	American Linden

RECOMMENDED EVERGREEN TREES	
Ilex opaca	American Holly
Juniperus virginiana	Eastern Redcedar
Picea abies	Norway Spruce
Pinus strobus	White Pine
Pinus virginiana	Virginia Pine
Pseudotsuga menziesii	Douglas fir
Thuja occidentalis	American Arborvitae
RECOMMENDED ORNAMENTAL TREES	
Amelanchier arborea	Downy Serviceberry
Cercis canadensis	Eastern Redbud
Chionanthus virginicus	White Fringetree
Cornus florida 'Cherokee Chief' 'Cherokee Princess' 'Cloud 9' 'Springtime'	Flowering Dogwood
Crataegus viridis 'Winter King'	Green Hawthorn
Malus sp.	Flowering Crabapple
Magnolia virginiana	Sweetbay Magnolia
Oxydendrum arboreum	Sourwood

Site Furnishings

Site furniture enhances the aesthetics, comfort, and safety of the pedestrian environment and should be provided wherever there is pedestrian traffic. Such areas include building entrances, park areas, intersections, and areas of special interest or views. Types of site furniture include bike racks, benches, trash receptacles, newspaper racks, bollards, transit stop shelters, and site amenities like chairs, tables, planters, and display panels.



Table

Manufacturer: Landscape Forms, Inc.
Model: Parc centre
Color: Silver
Material: Cast solid flame
Size: 30" dia x 30" high
Contact information: Landscape Forms, Inc.
431 Lawndale Ave.
Kalamazoo, MI 49048
269.381.3455 fax
800.430.6209 phone

All site furniture selections should be coordinated with one another and should be compatible with the surrounding architecture and other contextual elements. For newly established areas, a consistent furniture style should be provided.

Benches are an integral part of the pedestrian experience and impact visual quality of a place. Benches should be used throughout Coldstream at building entrances, drop-off zones, congregation points, and high activity areas.



Street Bench

Manufacturer: Landscape Forms, Inc.
Model: Towne square
Color: Black
Material: Cast steel flame
Size: 27" d x 32" h x 70"
Contact information: Landscape Forms, Inc.
431 Lawndale Ave.
Kalamazoo, MI 49048
269.381.3455 fax
800.430.6209 phone

Trash receptacles should match the benches, strategically placed along major walkways, intersections of paths, and near building entrances, picnic areas, food services, and congregation points.



Trash Receptacle

Manufacturer: VICTOR STANLEY, Inc.
Model: DYS-SD-36
Color: Black powdercoat
Material: Steel flame
Size: 24-5/8" diameter x 32-1/2" high
Contact information: VICTOR STANLEY, Inc.
P.O. Drawer 330
Dunkirk MD 20754
410.257.7579 fax
301.855.8300 phone

Bicycle racks should be placed at each major building and in visible locations for safety purposes and to reduce potential for theft. Bicycle racks for Coldstream shall be stainless steel.



Bicycle Rack

Manufacturer: Creative Pipe, Inc.
Model: TB 9-F-SS
Color: Silver
Material: Cast Stainless Steel
Size: 86" wide x 36" high
Contact information: Creative Pipe, Inc.
2458 Rancho Mirage.
California, CA 92270
760.340.5883 fax
800.644.8467 phone

4.0

Stormwater Control

Stormwater Management

Coldstream Research Campus is located in Northern Fayette County, Kentucky along the lower reaches of Cane Run Creek, a significant watershed of the region. Due to karst topography in the lower reaches of Cane Run, the creek and natural ground water is a major contributor of the Royal Spring Aquifer. The Royal Spring Aquifer and Cane Run are the primary sources of water supply for Georgetown and Scott County, to the north of Coldstream Research Campus and Lexington. The Coldstream Research Campus watershed feeds directly into these municipal water sources and thus the management of stormwater discharged within Coldstream Research Campus is critical to the protection of these water supplies. Consequently, mitigation of stormwater pollution is imperative and the regulatory oversight is heightened.

These guidelines are intended to provide direction towards Best Management Practices and procedures for short and long term management of stormwater.



Existing Coldstream Park reservoir.



Existing vegetated swale.



An example of a stormwater control feature modeled upon an intermittent stream.



An example of educating the public of stormwater management tech.

Coldstream Research Campus Jurisdictions

Coldstream Research Campus is located in Lexington-Fayette Urban County, which has a merged City/County government. Jurisdiction of development lies with several entities. Stormwater management means and methods are primary considerations for approval and permitting of new development at Coldstream Research Campus. Any development at Coldstream Research Campus will require review and approvals by each of these entities

- University of Kentucky/ Coldstream Design Review Committee
- LFUCG Division of Engineering
- Commonwealth of Kentucky Division of Water

Requirements for each entity are contained in the:

- Coldstream Stormwater Master Plan
- LFUCG Stormwater Manual
- Kentucky BMP's for Controlling Erosion, Sediment and Pollutant Runoff from Construction Sites

Sustainable Stormwater Management

A sustainable approach to stormwater management involves finding ways to harvest it on site, using it for irrigation, ornamental water features, and groundwater recharge. As the value of water is recognized, the value of natural systems to store, clean and distribute available fresh water must also be recognized. Technology exists to integrate systems that mimic nature's capacity to store, filter and clean water.

Examples of Sustainable Practices at Coldstream Research Campus

Protect and restore existing hydrologic functions: Avoid development and disturbance near Cane Run Creek. Plant native or appropriate non-native vegetation, re-grade soils only where necessary, and use soft engineering techniques to preserve the functions of floodplains and riparian buffers.

Manage and clean water on-site: Design sites to capture, slow, and treat stormwater runoff by reducing impervious surfaces, harvesting rainwater, and directing remaining stormwater runoff to soil and vegetation-based water treatment methods, such as vegetated bioretention facilities, rain gardens, wetlands, green roof, and bioswales. Maintain and store vegetation to ensure water can percolate into the soil or groundwater.

Design stormwater feature to be accessible to site users: Integrate multifunctional stormwater management features into site design to improve both water quality and aesthetics. Stormwater management features can provide calming views, spaces for restoration, and even opportunities for play and interaction with water.

Design the site to minimize or eliminate use of potable water for irrigation: Use native and appropriate non-native vegetation adapted to site conditions, climate, and design intent. Group plants with similar water needs to maximize irrigation efficiency. Climate-based controllers for irrigation systems can also be used to lower water consumption. In addition, non-potable water can be collected and used for irrigation from sources such as rainwater from rooftops, gray water, air conditioners condensate or stormwater basins.

These initiatives are parallel with the site guidelines of the U.S. Green Building Council's LEED requirements. LEED requirements have become a benchmark for sustainable and energy efficient site design. The intent of these guidelines is not to mandate LEED, but to encourage the use of principals set forth as the prerequisites and conditions of LEED sustainable sites.



An example of a sustainable park, that incorporates a playing field and stormwater swales.



Green roof plantings encourage biodiversity and absorb stormwater..

Stormwater Controls

Development within the Coldstream Research Campus shall conform with the approved Stormwater Master Plan. Stormwater quantity control is not required based on the approved Stormwater Master Plan. Thus, stormwater detention to control and delay discharge is not required.

Stormwater quality controls are required for all development at Coldstream Research Campus. Stormwater quality controls are intended to remove solid particles from stormwater runoff and may consist of bioretention basins, bioswales, infiltration basins, vegetated filtration strips, riparian buffers, sand filters and/or prefabricated treatment devices. The design parameters for stormwater quality control shall comply with the LFUCG Stormwater Manual.



Existing Coldstream Park reservoir.

Architectural Guidelines

Purpose

The objective of these architectural guidelines is to ensure quality, continuity and environmental sensitivity in future development of the Coldstream Research Campus

The information contained in these guidelines is meant to be used by Coldstream Research Campus owners, tenants and personnel, public works officers, and personnel responsible for planning, design, or maintenance, as well as private firms contracted for planning, design, or renovation and maintenance of facilities. All future construction projects should be guided by these recommendations to assure that the Campus achieves its potential for development and a lively and attractive environment.

Building Types

All buildings within the Coldstream Research Campus Plan have been assigned a building type. A building type represents a recognizable urban form, such as a townhouse, a mixed-use office, or a laboratory. The building type of each building is based on the desired urban form, relationship to the street, and desired relationship of the building to the site.

Each building type in the architectural guidelines is organized into the following groups of elements.

- Building Siting
- Height and Massing
- Parking and Service
- Architectural Design
- Special Features

Building Materials

All buildings shall be composed of high quality durable materials that also contribute to the goal of sustainability. Material selection for individual buildings must consider the context and character of its neighboring buildings and remain harmonious in appearance. Preferred materials are indicated for each building type within the guidelines. Materials that are not allowed include: E.I.F.S., vinyl siding, artificial stone, low slope industrial metal roofing, prefabricated industrial metal buildings, painted metal siding as primary skin, , non-decorative CMU, decorative CMU as primary skin, and hazardous materials including, but not limited to, asbestos and lead based paint.

Sustainable Strategies

Sustainability is important at the Coldstream Research Campus and is essential to creating neighborhoods that are economical, durable, efficient, and healthy environments in which to live, work, and play. Every new building in the campus must obtain certification from the Leadership in Energy and Environmental Design (LEED) Green Building Rating System or an equivalent national standard. All office buildings and laboratories are encouraged to seek a LEED Silver or higher rating. The U.S. Green Building Council's LEED rating system is utilized because it represents the current national standard for commercial green building and uses established and innovative practices, standards, and technologies to provide common design guidelines and third-party certification to ensure sustainability goals are achieved. New buildings may achieve the goals of the LEED system by focusing on energy conservation, energy production, sustainable materials, and water efficiency. These guidelines illustrate specific strategies to achieve the goal of a sustainable development.

5.1

OFFICE BUILDING

Commercial Office

Building Siting

- Main facades of buildings shall be generally parallel to the streets or property lines.
- Building shall sit on the setback line as per Chapter 2. The buildings in the Quadrangle shall sit directly on the setback line creating a consistent building edge alignment.
- Corner lots are considered to have two front lot lines. Any lot line fronting main streets or The Quadrangle shall be considered a front lot line.
- Buildings may vary in depth up to 10 feet along their fronts to undulate the façade providing variety and interest.

Height and Massing

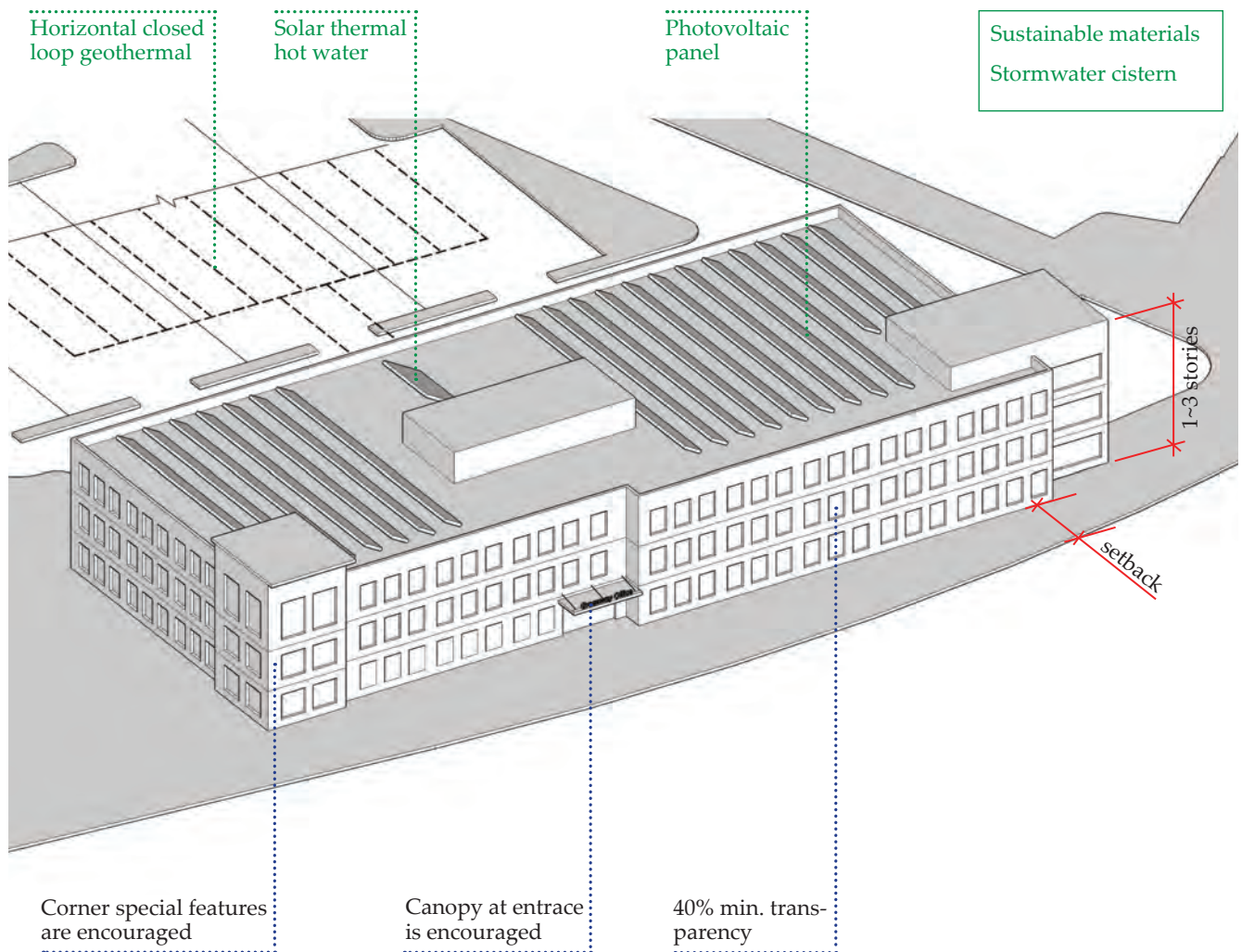
- Building heights shall be up to 3 stories.
- Building massing and height may vary to allow for variety and creation of special feature building segments.
- Predominant roof form shall be flat and parapeted. Pitched roof forms are allowed at corners and feature areas. Additional height is allowed at pitched roofs, roof equipment penthouses and special feature building segments.



Special corner treatment



Pronounced entry





Special ground and roof level features



Unique shading feature

Parking and Service

- Parking shall be located adjacent to buildings in surface lots accessed by tertiary roads. Lots adjacent to main streets should be screened with appropriate landscaping at their perimeters.
- Buildings directly fronting streets should utilize parallel parking at the streets for visitor parking with lobby access provided accordingly. Buildings fronting The Quadrangle should provide visitor parking within their main parking lots differentiated as may be required.
- All services to be located to building rears or sides and should be screened and incorporated into building design. No curb cuts are allowed on the front lot line along building frontage.
- Dumpsters should be completely enclosed and recessed into the buildings they serve or may be exterior if completely screened with durable materials matching the parent building.

Architectural Design

- All sides of buildings shall be of the same quality of materials.
- Building façade materials shall be durable and of high quality. Preferred materials include: brick, stone, high quality precast concrete, metal panels, metal and glass curtain walls, and preapproved newly developed materials as may present themselves in the future. Locally derived, sustainable and high-recycled content materials are strongly encouraged.
- Building fenestration at facades directly fronting main streets and The Quadrangle shall include a minimum of 40% openings or windows. Substantially increased openings or all-glass walls are allowed. Blank walls shall be avoided on these facades with the maximum length of any segment without fenestration limited as follows: 25 feet fronting The Quadrangle, 20 feet fronting other streets.
- Buildings may include segmented portions having little or no openings as may be required but such segments shall not appear overly monolithic and shall include special materials, design features or offsets to provide relief.
- Continuous ribbon type windows and reflective or dark tinted glass are prohibited.



Emphasized open space frontage

- Main entrances shall be at the front facades and should be articulated as significant building elements. Buildings fronting The Quadrangle may provide main entrances at other facades but should provide a secondary entrance on The Quadrangle façade having architectural significance.
- No mechanical or utility equipment shall be visible from any street or The Quadrangle.

Special Features

- At upper floor or parapet, approved corporate signage, features and specialized lighting are allowed.
- Roofs shall be considered a visible 'elevation' and shall be designed with features, materials and patterns that reflect the character of the building.



Special fenestration and shading

OFFICE BUILDING

■ Interstate Office

Building Siting

- At lots fronting the Interstate, buildings should be sited at rear of lots adjacent to Interstate. At lots not fronting the Interstate, buildings shall create corners along the main streets and shall sit back from setback line on main streets no more than 25 feet and sit back from setback line on minor streets no more than 12 feet.
- At lots not fronting the Interstate, the lot line fronting the minor streets shall be considered the front lot line and no less than 80% of the front lot width shall be covered by direct building frontage.

Height and Massing

- At lots fronting the Interstate, building heights shall be up to 8 stories but no less than 4 stories. At lots not fronting the Interstate building heights shall be up to 8 stories but no less than 2 stories.
- Building massing and height may vary to allow for variety and creation of special



Asymmetrical presentation to interstate

feature building segments. At lots fronting the Interstate, iconic forms are encouraged.

Parking and Service

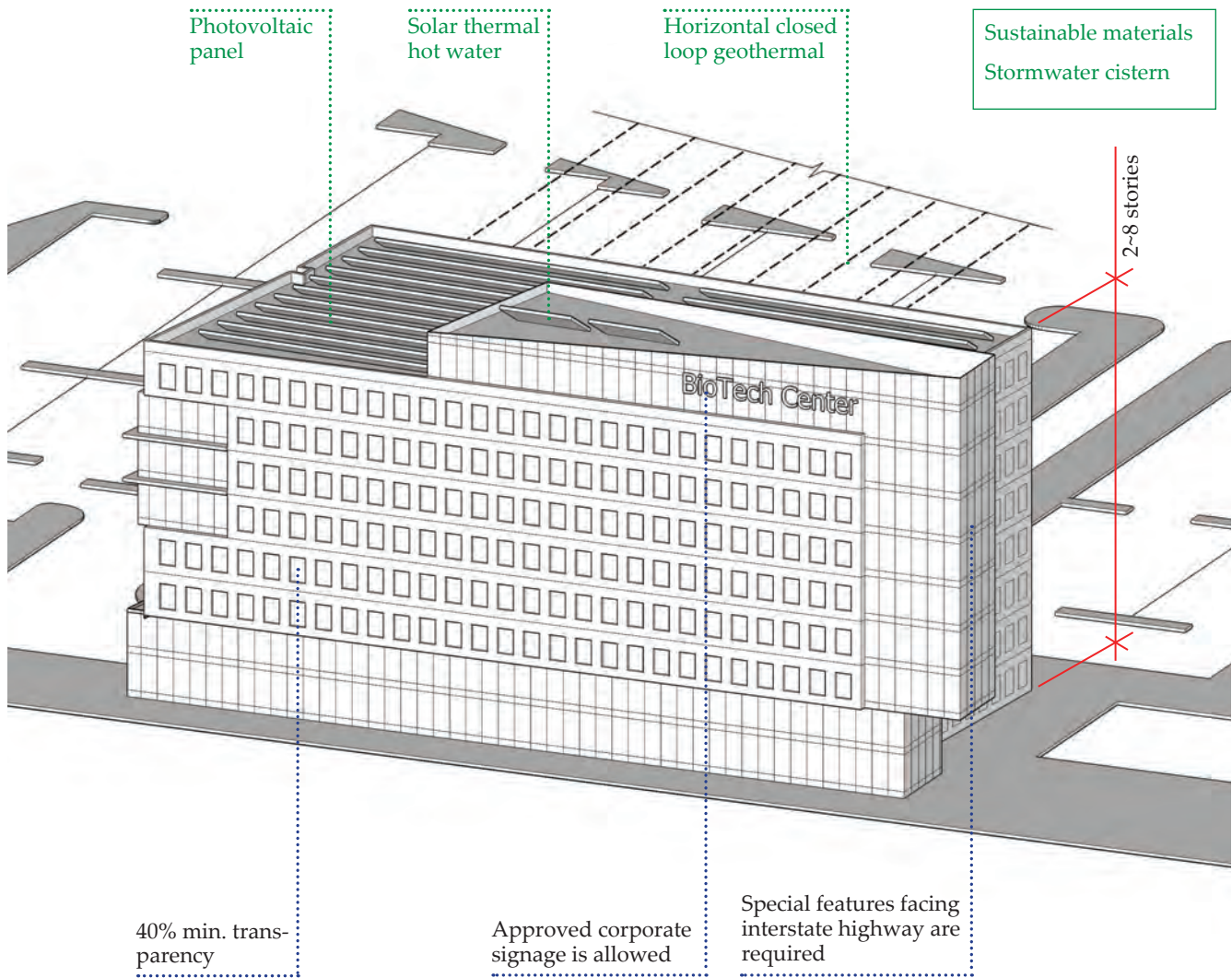
- Parking shall be located adjacent to buildings in surface lots accessed by tertiary roads. Lots adjacent to main streets should be screened with appropriate landscaping at their perimeters. Below grade and/or above grade structured parking is allowed per the Parking Garage guidelines.
- All services to be located to building rears or sides. At lots not fronting the Interstate, no curb cuts are allowed on the front lot line.
- Dumpsters must be completely enclosed and recessed into the buildings they serve.

Architectural Design

- Upper floor may utilize materials differing from other floors, change of color and additional height to provide unique expression and increased visibility from the Interstate.



Special roof level feature



- Building façade materials shall be high quality and durable. Preferred materials include: stone, high quality precast concrete, metal panels, metal and glass curtain walls, and preapproved newly developed materials as may present themselves in the future. Wood may be used as accent and trim material. Locally derived, sustainable and high-recycled content materials are strongly encouraged.
- Building fenestration at floors above ground level shall include a minimum of 40% openings or windows. Substantially increased openings or all-glass walls are allowed.
- Continuous ribbon type windows and reflective or dark tinted glass are prohibited.
- Main entrances shall be at the front facades and can be emphasized with canopies or similar features.

- At lots not fronting the Interstate, blank walls at ground level shall be avoided. The maximum length of any segment of a street-fronting ground floor façade without transparency is 20 feet.
- No mechanical or utility equipment shall be visible from any street.

Special Features

- At upper floor or parapet, approved corporate signage, features and specialized lighting are allowed.
- Roof terraces or vegetative roofs are encouraged. Roofs shall be considered a visible 'elevation' and shall be designed with features, materials and patterns that reflect the character of the building.

5.2

■ LABORATORY BUILDING

Building Siting

- Main facades of buildings shall be generally parallel to the streets or property lines or adjacent buildings.
- Building shall sit on the setback line as per Chapter 2.
- Corner lots are considered to have two front lot lines. Any lot line fronting main streets, The Quadrangle or facing Citation Boulevard shall be considered a front lot line.
- Buildings may vary in depth to undulate the façade providing variety and interest.

Height and Massing

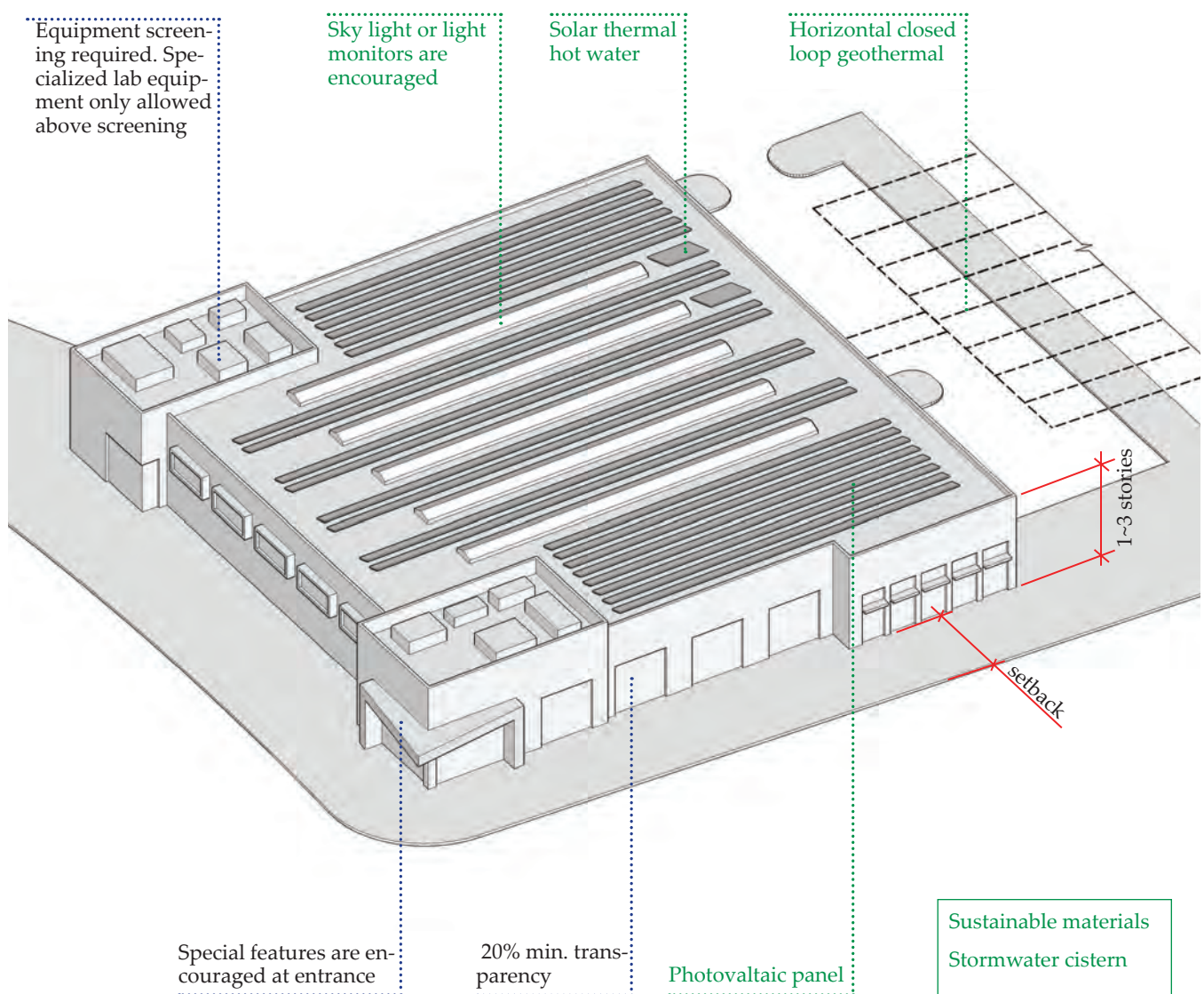
- Building heights shall be up to 3 stories.
- Building massing and height may vary to allow for variety and creation of special feature building segments.
- Predominant roof form shall be flat and parapeted. Additional height is allowed at roof equipment penthouses and special feature building segments.



Building entry feature



Special entry and street presentation





Special lighting and quality materials



Differentiated massing

Parking and Service

- Parking shall be located adjacent to buildings in surface lots accessed by tertiary roads. Lots adjacent to main streets should be screened with appropriate landscaping at their perimeters.
- Buildings directly fronting streets should utilize parallel parking at the streets for visitor parking with lobby access provided accordingly. Buildings fronting The Quadrangle and Citation Boulevard should provide visitor parking within their main parking lots differentiated as may be required.
- All services to be located to building rears or sides and should be screened and incorporated

into building design. Manufacturing and similar operations shall consolidate truck traffic and screen loading areas from view from main streets. No curb cuts are allowed on the front lot line along building frontage.

- Dumpsters should be completely enclosed and recessed into the buildings they serve or may be exterior if completely screened with durable materials matching the parent building.

Architectural Design

- All sides of buildings shall be of the same quality of materials.
- Building façade materials shall be durable and of high quality. Preferred materials include: brick, stone, high quality precast concrete, metal panels, metal and glass curtain walls, and preapproved newly developed materials as may present themselves in the future. Locally derived, sustainable and high-recycled content materials are strongly encouraged.
- Building fenestration at facades directly fronting main streets and The Quadrangle shall include a minimum of 20% openings or windows. Substantially increased openings or all-glass walls are allowed. Blank walls shall be avoided on these facades with the maximum length of any segment without fenestration limited as follows: 30 feet fronting The Quadrangle, 30 feet fronting main streets, 100 feet fronting Citation Boulevard.
- Buildings may include segmented portions having little or no openings as may be required but such segments shall not appear overly monolithic and shall include special materials, design features or offsets to provide relief.
- Continuous ribbon type windows and reflective glass are prohibited.



Street oriented adjacency

- No mechanical or utility equipment shall be visible from any street or The Quadrangle other than specialized equipment necessary for laboratory functionality. Where screening such equipment proves unreasonable, it may extend above screenwall structures and shall be carefully arranged so as to minimize visibility. Free standing ground level equipment is not allowed unless fully screened.
- Roofs and mechanical screens shall be considered a visible 'elevation' and shall be designed with features, materials and patterns that reflect the character of the building.
- Building canopies shall not be supported by adjustable turnbuckles and cable systems.

Special Features

- At upper floor or parapet, approved corporate signage, features and specialized lighting are allowed.
- Buildings in the Citation Neighborhood shall consider their facades facing Citation Boulevard as front facades and must include enhanced design treatment, features, materials and lighting to present well these largest buildings.
- Vegetated roof systems are encouraged.



Shading and open space frontage

5.3

RESIDENTIAL BUILDING

A Multi-Family

Building Siting

- Main facades of buildings shall be parallel to the streets or property line.
- Buildings shall sit on the setback line as per Chapter 2.
- Buildings may vary in depth up to 8 feet to undulate the façade providing variety and interest.
- Corner lots are considered to have two front lot lines.
- Not less than 80% of the front lot width shall be covered by direct building frontage.
- Building adjacencies shall create vistas and/or drives connecting the parking lots behind buildings in a prominent manner.
- Certain buildings in Carnahan Center shall abut parking garage structures directly serving to screen them from street view.



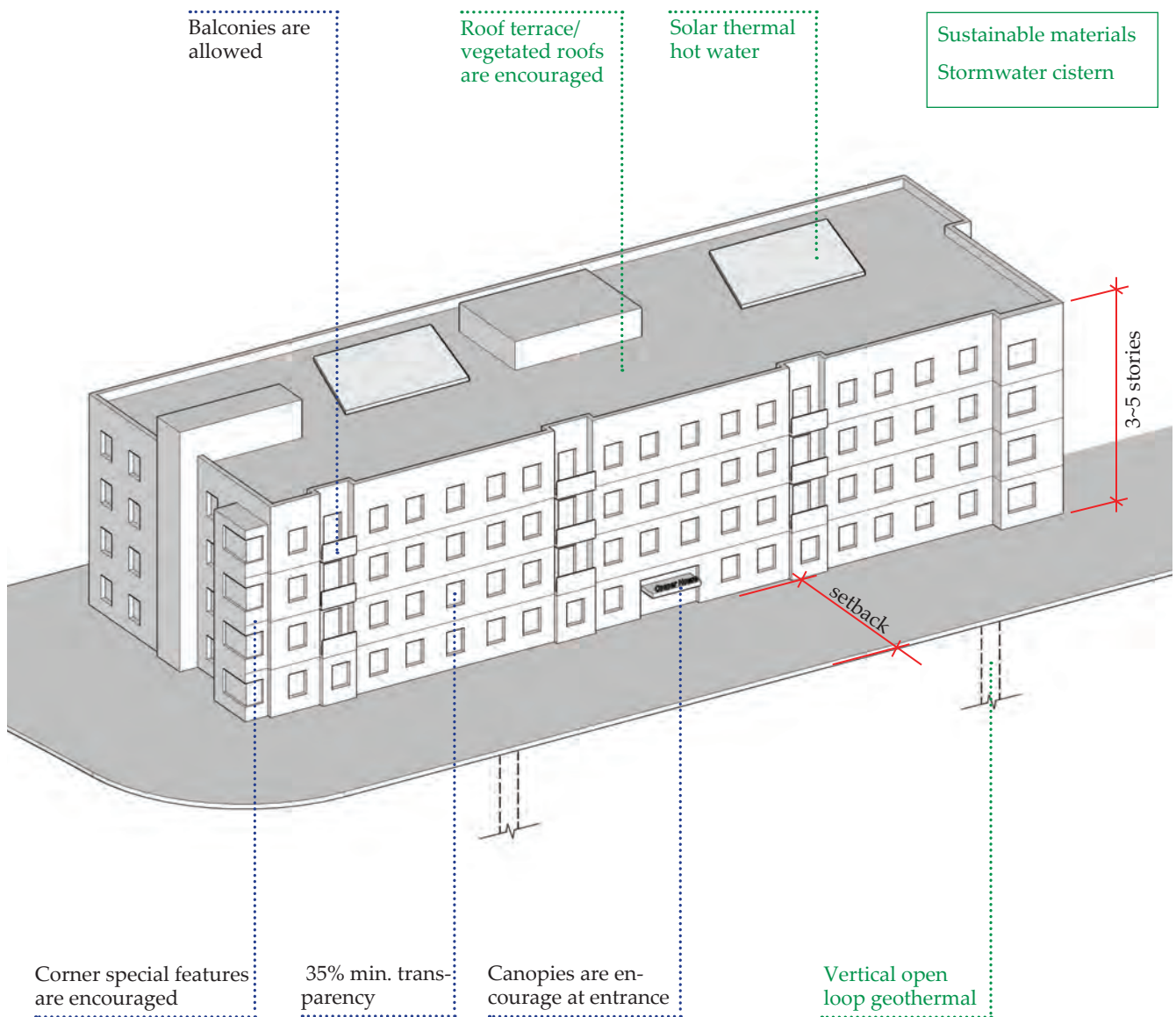
Street level access engagement

Height and Massing

- Building heights shall be up to 5 stories but no less than 3 stories.
- Building massing may step back at the corners, entrances or at feature areas.
- Predominant roof form shall be flat and parapeted. Pitched roof forms are allowed at corners and feature areas. Additional height is allowed at pitched roofs and special feature building segments. Additional roof level occupiable volumes set back a minimum of 15 feet are allowed for amenity use.
- Certain buildings in Carnahan Center that abut parking garage structures directly shall take the form of half of a similar freestanding multifamily residential building.



Garden level engagement





Parking and Service

- Parking shall be located behind buildings in surface lots accessed by tertiary roads between or beyond buildings. Lots shall be configured so as not to be visible from main streets and should be screened with appropriate landscaping at other perimeters.
- Certain buildings in Carnahan Center that abut parking garage structures directly may have individual parking spaces provided at their rear in the parking structures that they screen.
- Lighting in parking structures shall be arranged so that the source of light is screened from view at the buildings street sidewalks.
- All services to be located to building rears or sides accessed by tertiary roads between or beyond buildings. No service drive curb cuts are allowed on any of the main streets within the building street wall frontage.
- Dumpsters must be completely enclosed and recessed into the buildings they serve.

Architectural Design

- Upper floor and recessed or projected areas may utilize materials differing from other floors to provide unique expression.
- Building façade materials shall be high quality and durable. Preferred materials include: brick, stone, cast stone, cementitious panels or siding at upper levels, metal panels and glass, and preapproved newly developed materials as may present themselves in the future. Wood or other siding products may be used as special feature area surfaces and as trim materials. Locally derived, sustainable and high-recycled content materials are strongly encouraged.
- Building fenestration shall include a minimum of 35% openings, windows or balconies. While punched windows are encouraged, substantially increased openings or all-glass walls are allowed in recessed or special corner feature areas. Ribbon windows are not allowed.
- Main entrances shall be at the front facades and articulated as significant public entrances.
- First floor screening at street facades may include elevated patio features or carefully screened and landscaped buffers that engage the street and sidewalk.



Special balcony feature

- Ground level residential units may have individual entries accessing sidewalks.
- At certain buildings in Carnahan Center that abut parking garage structures directly, units may access private parking stalls directly at each level, or may be accessed by common building lobbies and single loaded corridors as necessary.
- No mechanical or utility equipment may be visible from main front or side facades. Unit exhaust and louvers are not allowed on these facades; systems shall route through roof.
- Roofs may be occupiable and embellished for amenity use. Stair and elevator access to room shall be integrated in to the core architecture.

Special Features

- Individual unit balconies are allowed at floors above grade.
- Roof terraces or vegetative roofs are encouraged.
- Façade mounted entry canopies or awnings and specially approved signage is allowed.



Special balcony and roof terrace garden

RESIDENTIAL BUILDING

E Garden Style Multi-Family

Building Siting

- Main facades of buildings along perimeter streets shall be generally parallel to the streets or property line.
- Building shall sit on the setback line as per Chapter 2.
- Buildings may vary in depth up to 8 feet to undulate the façade and create perceived breaks between buildings.
- Corner lots are considered to have two front lot lines.
- Building adjacencies shall create vistas and/or drives connecting the parking lots and green spaces behind buildings. Minimum separation between buildings shall be 30 feet.



Landscaped street facade

Height and Massing

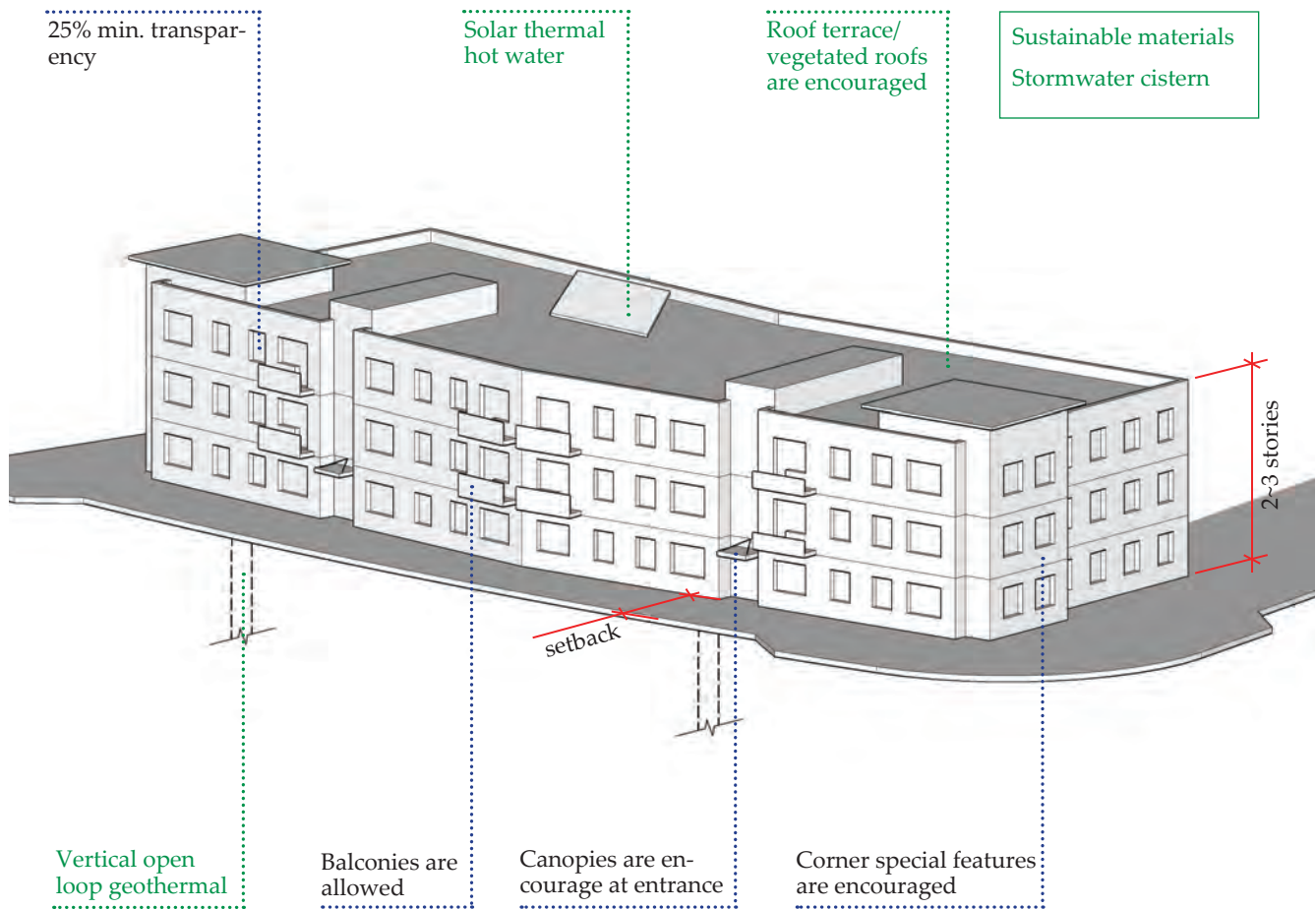
- Building heights shall be up to 3 stories but no less than 2 stories.
- Building massing may step back at the corners, entrances or at feature areas.
- Predominant roof form shall be flat to integrate with the urban character of the neighborhood. Pitched segments are acceptable for feature areas.

Parking and Service

- Parking shall be located behind buildings in surface parking aisles accessed between buildings. Lots shall be configured so as not be visible from main streets and should include appropriate landscaping at the perimeters or parking may be covered with architecturally compatible structures.
- Trash services shall be provided within the development in centralized fully screened bin enclosures carefully located about parking areas or against or between buildings.



Garden side amenity space



Architectural Design

- Building façade materials shall be high quality and durable. Preferred materials include: brick, stone, cast stone, cementitious panels or siding, metal panels and glass, and preapproved newly developed materials as may present themselves in the future. Locally derived, sustainable and high-recycled content materials are strongly encouraged.
- Building fenestration shall include a minimum of 25% openings, windows or balconies.
- Main entrances shall be at the front facades and may be open breezeways if stairs are concealed from street view.
- First floor screening at street facades may include elevated patio features or carefully screened and landscaped buffers that engage the street and sidewalk.
- Ground level residential units may have individual entries accessing sidewalks.

Special Features

- Individual unit balconies and patios are allowed.
- Exposed metal flue-type chimneys are not allowed.
- Amenity building and common amenities such as a pool and recreation are allowed when fully concealed and screened within the development.

RESIDENTIAL BUILDING

Townhouse

Building Siting

- Main facades of buildings along perimeter streets shall be generally parallel to the streets or property line.
- Buildings shall sit on the setback line as per Chapter 2.
- Buildings may vary in depth up to 4 feet to undulate the façade and create variety of style and break to unit rows.
- Corner lots are considered to have two front lot lines.
- Building adjacencies shall create vistas and/or drives connecting the parking lots and green spaces behind buildings. Minimum separation between buildings shall be 20 feet.



Gable roof townhouses

Height and Massing

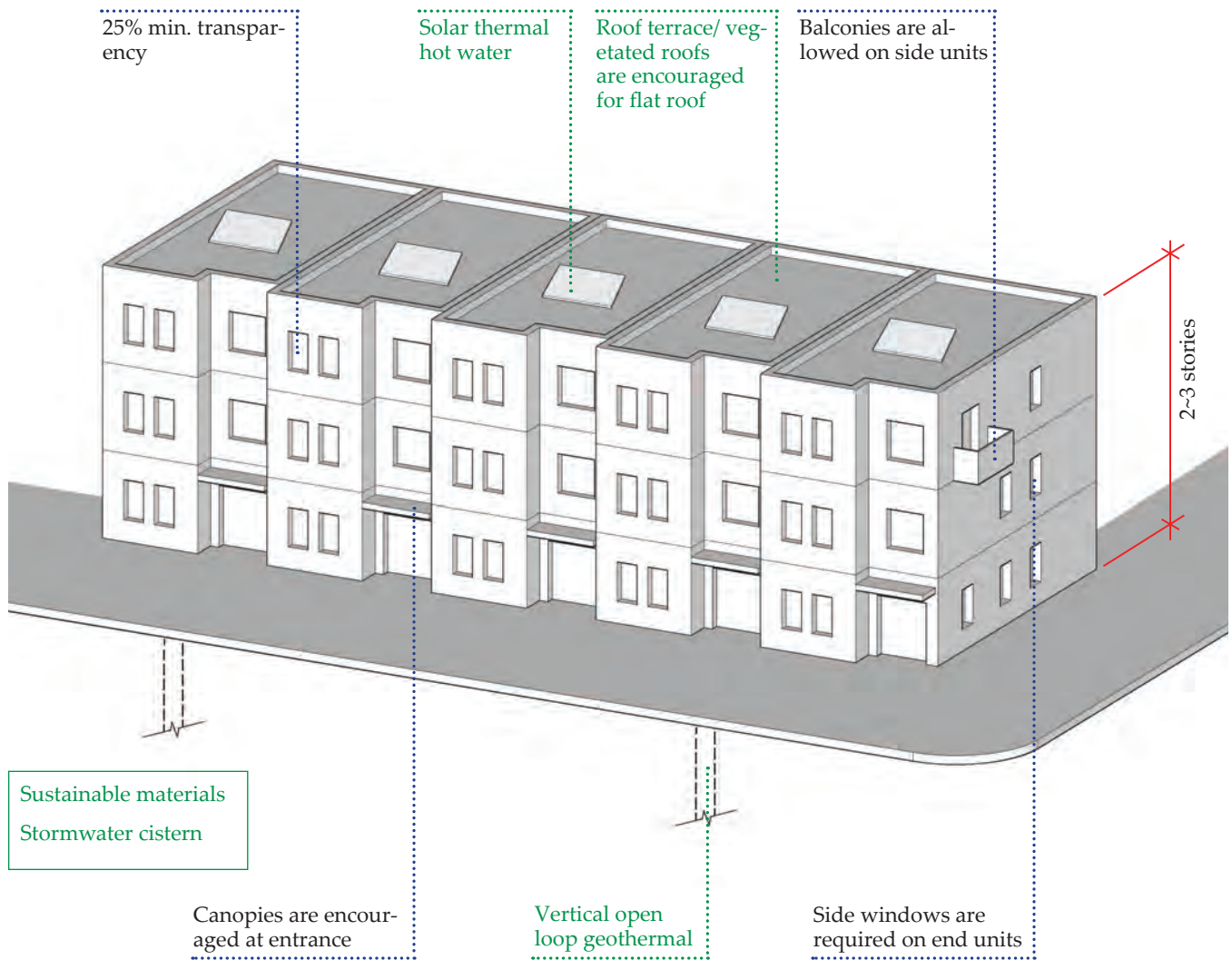
- Building heights shall be up to 3 stories but no less than 2 stories.
- Building massing may step back at the corners, entrances or at feature areas.
- Predominant roof form shall be pitched with eaves. Dormers and gable embellishment are allowed. Flat roof design with parapets is acceptable in the Carnahan Center neighborhood.

Parking and Service

- Parking for units that front streets shall be internally garaged from back of unit. Units that abut garage structures shall include parking within the abutting garage structure accessed through the back of unit.



Flat roof townhouses concealing parking garage



Architectural Design

- Building façade materials shall be high quality and durable. Preferred materials include: brick, stone, cast stone, metal or engineered wood siding, cementitious panels or siding, metal panels and glass, and preapproved newly developed materials as may present themselves in the future. Locally derived, sustainable and high-recycled content materials are strongly encouraged.
- Building fenestration shall include a minimum of 25% openings, windows or balconies.
- Main entrances shall be at the front facades at grade level.

- First floor screening at street facades may include elevated patio features or carefully screened and landscaped buffers that engage the street and sidewalk.

Special Features

- Individual unit balconies and patios are allowed.
- Exposed metal flue-type chimneys are not allowed.

5.4

RETAIL BUILDING

■ Neighborhood Retail

Building Siting

- Retail uses shall be incorporated into the volumes of the parent buildings, normally located on corners or ends of parent buildings.
- Retail portions of buildings may sit directly on setback line or may vary in depth inward up to 6 feet to undulate the façade providing variety or differentiation from parent building.

Height and Massing

- Retail portions shall occupy the first floor of parent buildings. When occupying in single story buildings the retail portion may have additional height up to one half additional story.

Parking and Service

- Parking shall be provided on adjacent streets and in the parent buildings parking scenario.
- At smaller parent buildings where retail portions extend to back of building, all

services shall be provided as part of the parent building back of house services. At larger parent buildings where direct access to back of parent building is not possible and where loading and trash service is not desirable over sidewalks to back of house, trash storage must be enclosed and recessed completely into the building via secured alley or other concealed entry.

- No service drive curb cuts are allowed on any of the main streets within the building street wall frontage.

Architectural Design

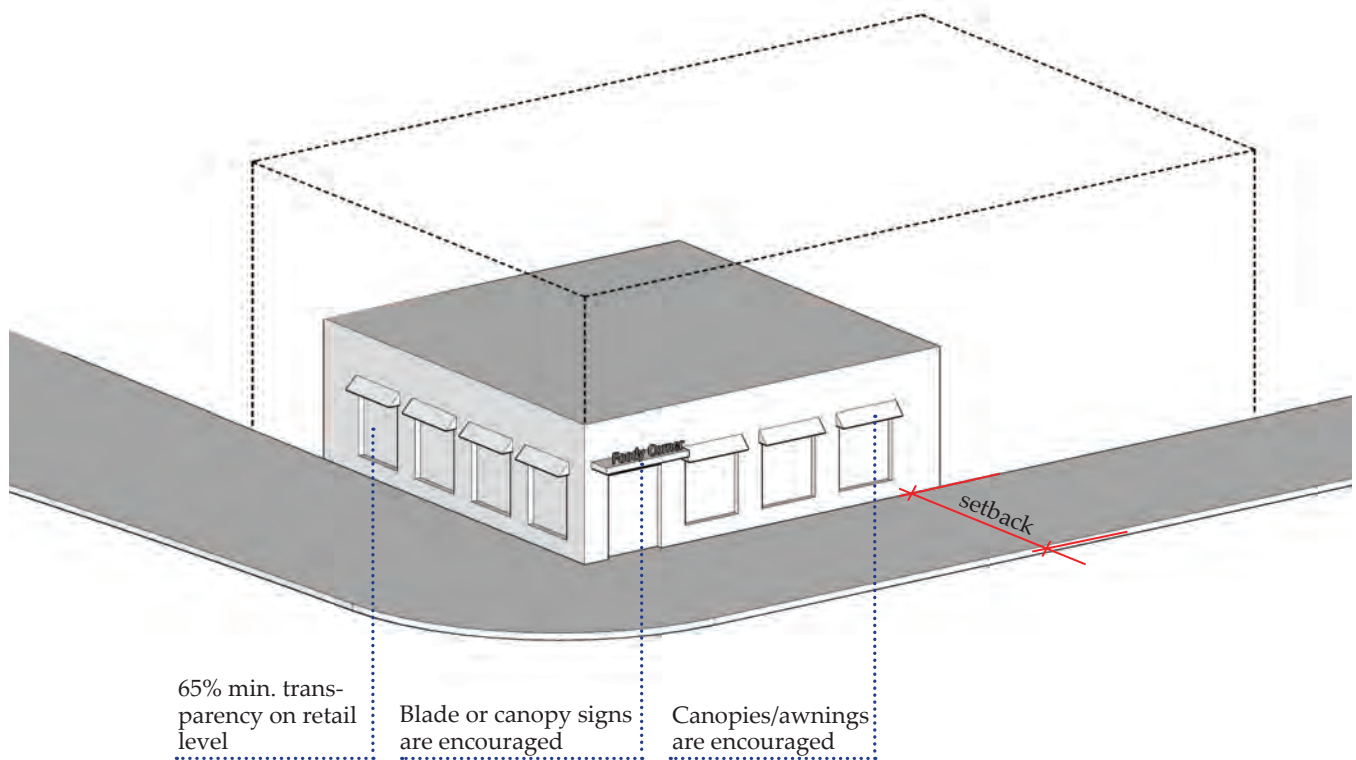
- Facades may be of different materials from the parent building.
- Building façade materials shall be high quality and durable. Preferred materials include: brick, stone, cast stone, metal and glass, and preapproved newly developed materials as may present themselves in the future. Wood and aluminum may be used as storefront and trim materials. Finished face concrete masonry may be used at ground level at back



Incorporation into parking garage



Specialized corner integration



of house areas. Locally derived, sustainable and high-recycled content materials are strongly encouraged.

- Main entrances shall be at the front facades and may be emphasized with canopies or similar features which should provide a minimum clearance of 9 feet above the sidewalk.
- Blank walls at ground level shall be avoided. The maximum length of any segment of a street-fronting ground floor façade without transparency is 15 feet.
- Storefronts shall be provided for no less than 65% of the length of street-fronting facades shall have transparent glass. Storefront sills shall be no higher than 3 feet above the adjacent sidewalk and tops of storefront openings shall be no less than 9 feet above the adjacent sidewalk.
- Storefronts shall continue at the exposed side of buildings for no less than 20 feet from the front façade.
- Awnings are allowed over storefront windows and doors. No awning may be substantially wider than the storefront it covers. Awnings should provide no less than 8 feet clearance above sidewalks. Awnings must be hung

from the building façade and may not be supported by columns on the sidewalk.

- Building lighting should be mounted at 8 feet or higher.
- No mechanical or utility equipment may be located within 20 feet of the street-fronting façade or corner.
- Flat roofs should drain to internal roof drains and/or to the rear leaving street-fronting façades free of gutters and downspouts.

Special Features

- Building arcades at ground level are strongly discouraged.
- Allowances for on-sidewalk dining areas are strongly encouraged as well as accommodation of bicycles.
- Façade mounted flags, clocks, specialty lighting, information displays and specially approved banner signage are allowed.
- All branding and main signage should be located within 9 to 18 feet above grade for multi-story buildings and at any height for single story buildings. Blade or canopy signage is encouraged.

RETAIL BUILDING

■ Large Format Retail

Building Siting

- Minimum street frontage shall be 100 feet.
- Main facades of buildings shall be parallel to the streets or property line.
- Corner lots are considered to have two front lot lines.
- Buildings shall sit directly on the setback line at front lot lines.
- Buildings may vary in depth up to 8 feet to undulate the façade providing variety and interest.

Height and Massing

- Building heights shall be up to 45 feet above grade but no less than 25 feet above grade.
- Building massing should step back at the corners, entries or other specially articulated areas and may increase height for variety in roof line and building massing.
- Predominant roof form shall be flat and parapeted. Vertically projecting elements or elevated sloped roof forms are allowed at special feature building segments.



Fenestrated corner and entry features

Parking and Service

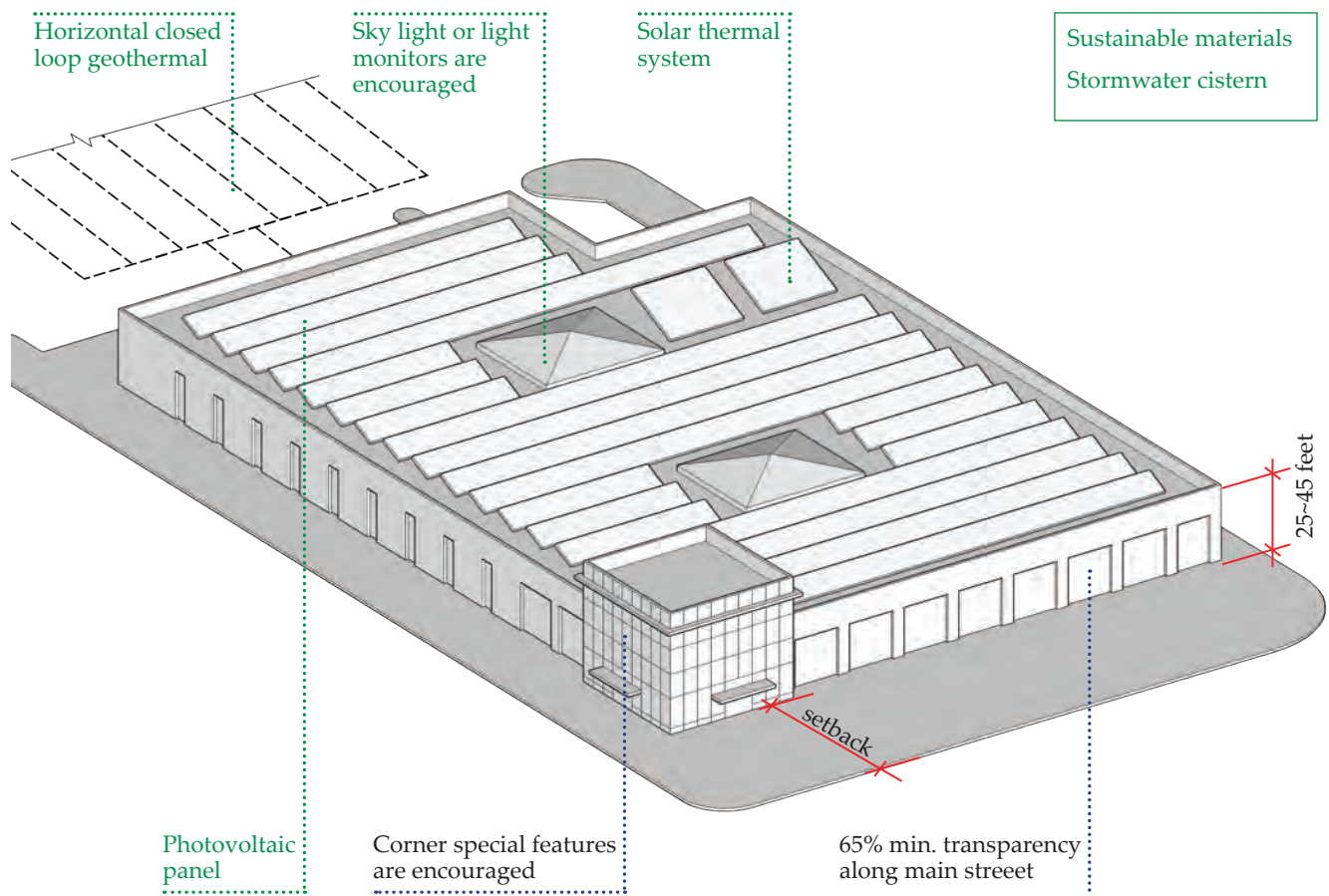
- Parking shall be located in surface lots accessed by tertiary roads between or beyond buildings. Lots should be screened with appropriate landscaping at other perimeters.
- All services to be located to building rears or sides accessed by tertiary roads between or beyond buildings separate from patron parking routes. No service drive curb cuts are allowed on any of the main streets within the building street wall frontage.
- Dumpsters should be completely enclosed and recessed into the buildings they serve or may be exterior if completely screened with durable materials matching the parent building.

Architectural Design

- Front and side facades shall be of the same or similar materials and of a similar level of detail.
- Building façade materials shall be high quality and durable. Preferred materials include: brick, stone, cast stone, metal and glass, and



Window lined prime facade



preapproved newly developed materials as may present themselves in the future. Wood and aluminum may be used as storefront and trim materials. Locally derived, sustainable and high-recycled content materials are strongly encouraged.

- Main entrances shall be at the front facades or corners and may be emphasized with substantial canopies or similar features which should provide a minimum clearance of 9 feet above the sidewalk.
- Blank walls at ground level of street fronting facades shall be minimized. The maximum length of any segment of a street-fronting ground floor façade without transparency is 20 feet.
- Storefronts shall be provided for no less than 65% of the length of street-fronting facades shall have transparent glass. Storefront sills shall be no higher than 3 feet above the adjacent sidewalk and tops of storefront openings shall be no less than 12 feet above the adjacent sidewalk.
- Awnings are allowed over storefront windows and doors. No awning may be substantially

wider than the storefront it covers. Awnings should provide no less than 8 feet clearance above sidewalks. Awnings must be hung from the building façade and may not be supported by columns on the sidewalk.

- Building lighting should be mounted at 8 feet or higher.
- No mechanical or utility equipment may be located within 20 feet of the street-fronting façade or corner.
- Flat roofs should drain to internal roof drains and/or to the rear leaving street-fronting facades free of gutters and downspouts.

Special Features

- Building arcades at ground level are allowed.
- All building mounted signage shall be higher than 9 feet above the sidewalk. Blade or canopy signage is encouraged.
- National retailers should incorporate branding colors and signage identity into a building façade that is unique to Coldstream.

RETAIL BUILDING

■ Outparcel Retail

Building Siting

- Minimum street frontage shall be 45 feet.
- Main facades of buildings shall be parallel to the streets or property line.
- Corner lots are considered to have two front lot lines.
- Drive through buildings are strongly discouraged.
- Buildings shall sit directly on the setback line at front lot lines along main corridor street. Restaurants that have building forms stepping back from the setback line shall provide permanent vertical element around dining areas such as a wall or fence with landscaping.
- Buildings may vary in depth up to 15 feet to undulate the façade providing variety and interest.

Height and Massing

- Building heights shall be up to 35 feet above grade but no less than 22 feet above grade.



Street corner engagement

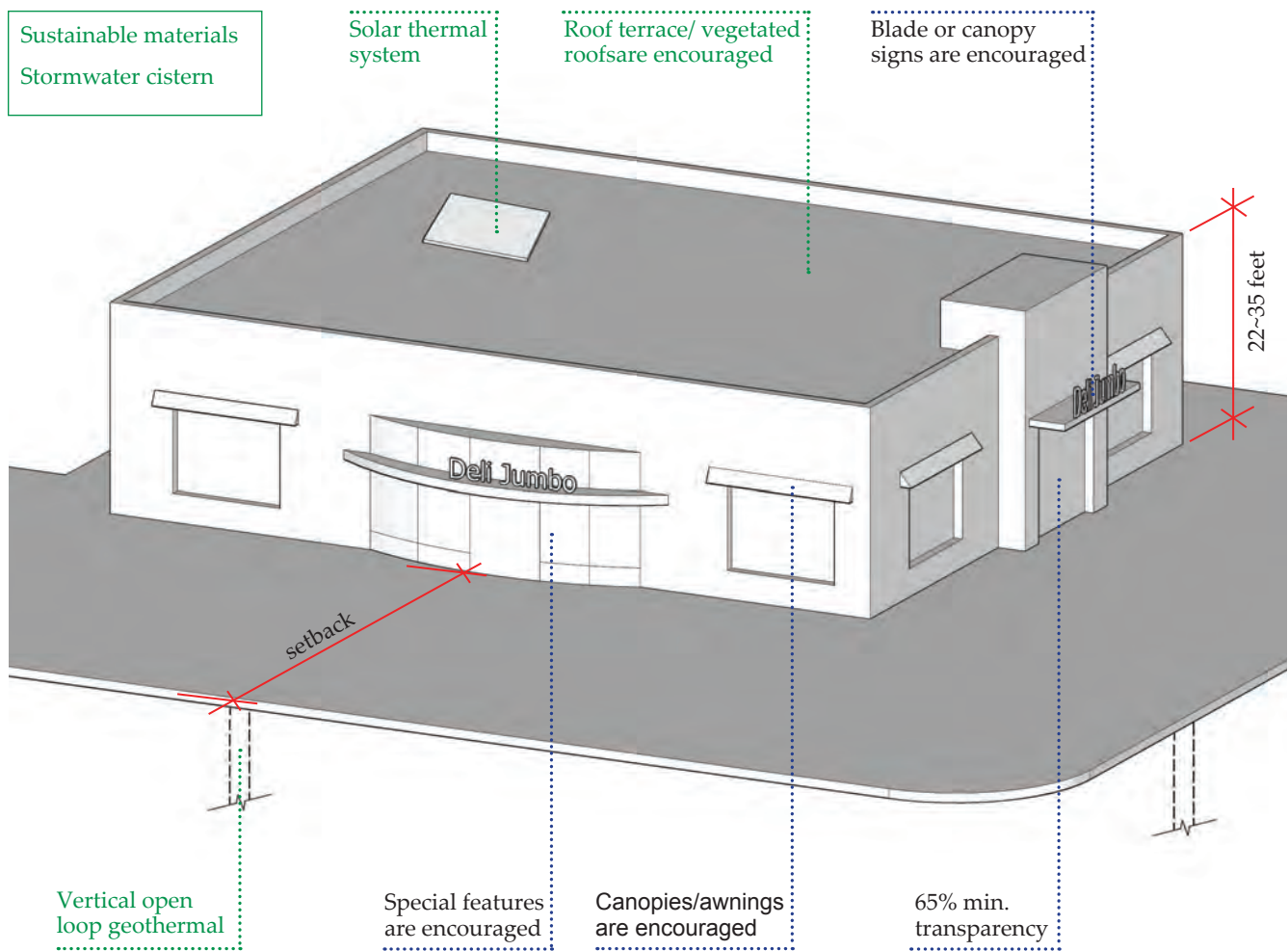
- Building massing should step back at the corners, entries or other specially articulated areas and may increase height for variety in roof line and building massing.
- Predominant roof form shall be flat and parapeted. Vertically projecting elements or elevated sloped roof forms are allowed at special feature building segments.

Parking and Service

- Parking shall be located in surface lots accessed by tertiary roads between or beyond buildings. Lots should be screened with appropriate landscaping at other perimeters.
- All services to be located to building rears or sides accessed by tertiary roads between or beyond buildings separate from patron parking routes.
- Dumpsters should be completely enclosed and completely screened with durable materials matching the parent building.



Outdoor dining environment



Architectural Design

- Front and side facades shall be of the same or similar materials and of a similar level of detail.
- Building façade materials shall be high quality and durable. Preferred materials include: brick, stone, cast stone, metal and glass, wood or engineered wood sidings, and preapproved newly developed materials as may present themselves in the future. Locally derived, sustainable and high-recycled content materials are strongly encouraged.
- Storefronts shall be provided for no less than 65% of the length of street-fronting facades shall have transparent glass. Storefront sills shall be no higher than 3 feet above the adjacent sidewalk and tops of storefront openings shall be no less than 10 feet above the adjacent sidewalk.
- Awnings are allowed over storefront windows and doors. Awnings should provide no

less than 8 feet clearance above sidewalks. Awnings must be hung from the building façade and may not be supported by columns on the sidewalk.

- Building lighting should be mounted at 8 feet or higher.
- No mechanical or utility equipment may be located within 20 feet of the street-fronting façades.

Special Features

- All building mounted signage shall be higher than 9 feet above the sidewalk. Blade or canopy signage is encouraged.
- Outdoor dining is encouraged at street fronting facades or sides.
- National retailers should incorporate branding colors and signage identity into a building façade that is unique to Coldstream.

5.5

■ PARKING GARAGE

Building Siting

- Main facades of structure shall be generally parallel to the streets or property lines or adjacent buildings.
- Corner lots are considered to have two front lot lines. Any lot line fronting main streets shall be considered a Primary façade for guideline purposes, and other facades considered a Secondary facade.
- Structure may undulate in depth to accommodate special stair or tower features or other uses such as small retail infill or residential units occurring at perimeter.

Height and Massing

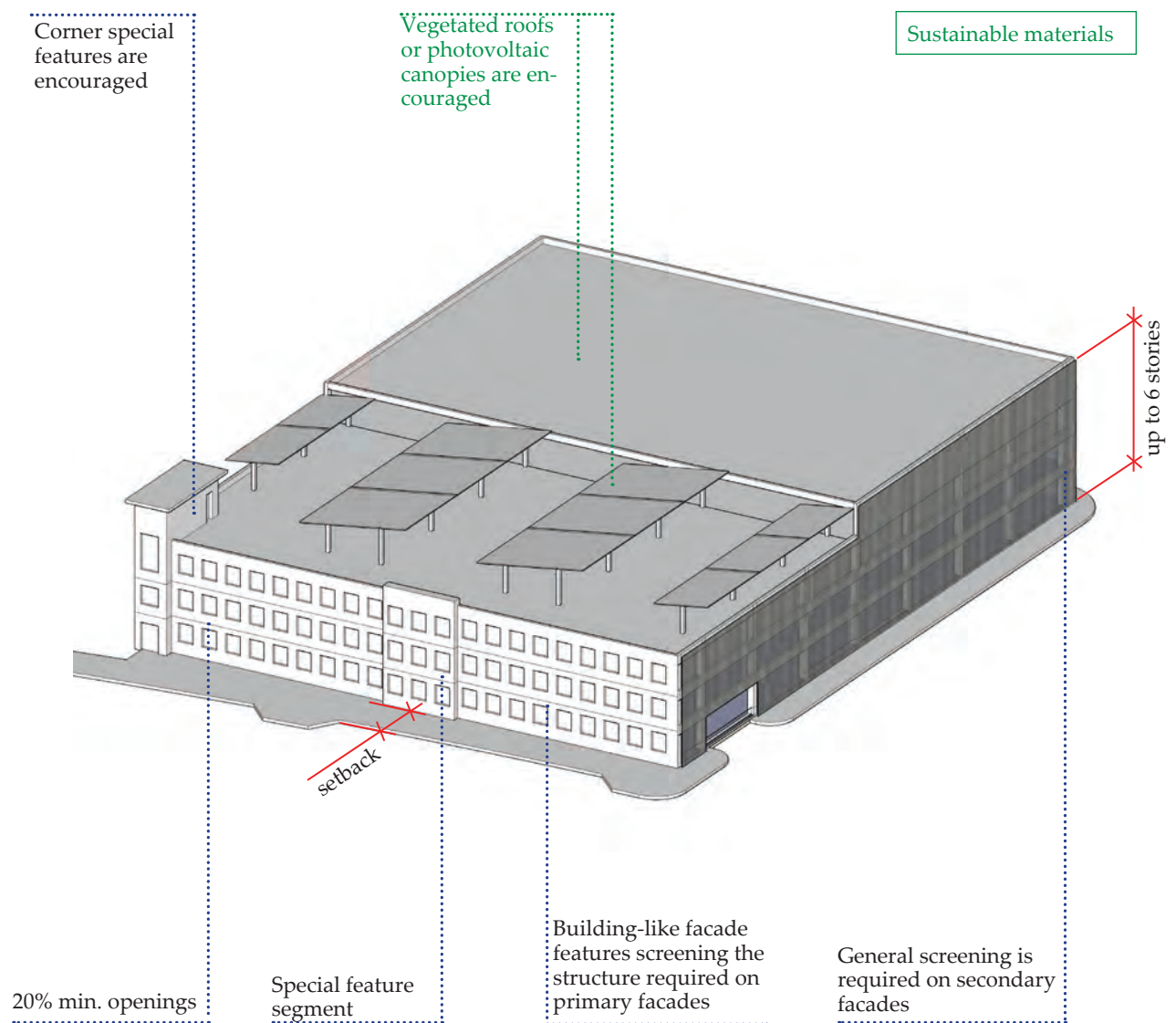
- Heights shall be up to 6 stories, but no higher than highest adjacent building or building served.
- Garage massing and height may vary to allow for variety and creation of special feature building segments. Such segments are strongly encouraged to break up long monolithic facades.
- Roof forms over top parking deck are strongly encouraged and additional height is allowed where proposed.



Primary facade architectural screening



Secondary facade screening - HAVER & BOECKER Largo Style





Primary facade architectural screening



Special stair feature with architectural precast

Architectural Design

- Primary street-fronting facades shall be designed with opaque architectural screening and building-like façade features so as to completely screen structure and partially screen vehicles, and shall be designed in context with the adjacent street-fronting buildings and buildings served.
- Secondary facades exposed to view from adjacent properties shall be designed with screening features so as to generally screen structure and vehicles. Where garage is within 30 feet and adjacent to building served and completely screened from view, such as illustrated at Carnahan Center,

façade screening is not required on facades facing building served.

- Façade materials shall be durable and of high quality. Preferred primary façade materials include: brick, stone, architectural precast concrete, metal panels and louver systems, metal and glass curtain walls. Preferred secondary façade materials include: any primary façade material, metal louver systems, perforated metal and mesh materials, vegetated trellis systems, and awning systems. Structural precast elements qualify as façade when incorporating architectural precast concrete faces with decorative patterning, coloring and textures. Preapproved newly developed materials

as may present themselves in the future are acceptable. Locally derived, sustainable and high-recycled content materials are strongly encouraged.

- Building fenestration at primary facades directly fronting streets shall include a minimum of 20% openings or windows and as required for garage ventilation. Substantially increased openings without screening is strongly discouraged. Blank walls shall be avoided on these facades with the maximum length of any segment without fenestration limited to 20 feet.
- No mechanical or utility equipment shall be visible from any street.
- Architecturally designed structured canopy systems over parking aisles at top floor are strongly encouraged. Fabric systems are not acceptable.



Secondary facade screening and stair feature



Photovoltaic panel canopies - ENVISION SOLAR

- Where garages are within 60 feet and adjacent to taller neighboring buildings, roof systems are required and vegetated roofing systems are strongly encouraged.

Special Features

- At upper floor or parapet, approved corporate signage, features and specialized lighting are allowed.
- Vegetated roof systems are encouraged.



Vegetated roofing and facade screening



Vegetated roofing and user amenity

5.6

MIXED-USE BUILDING

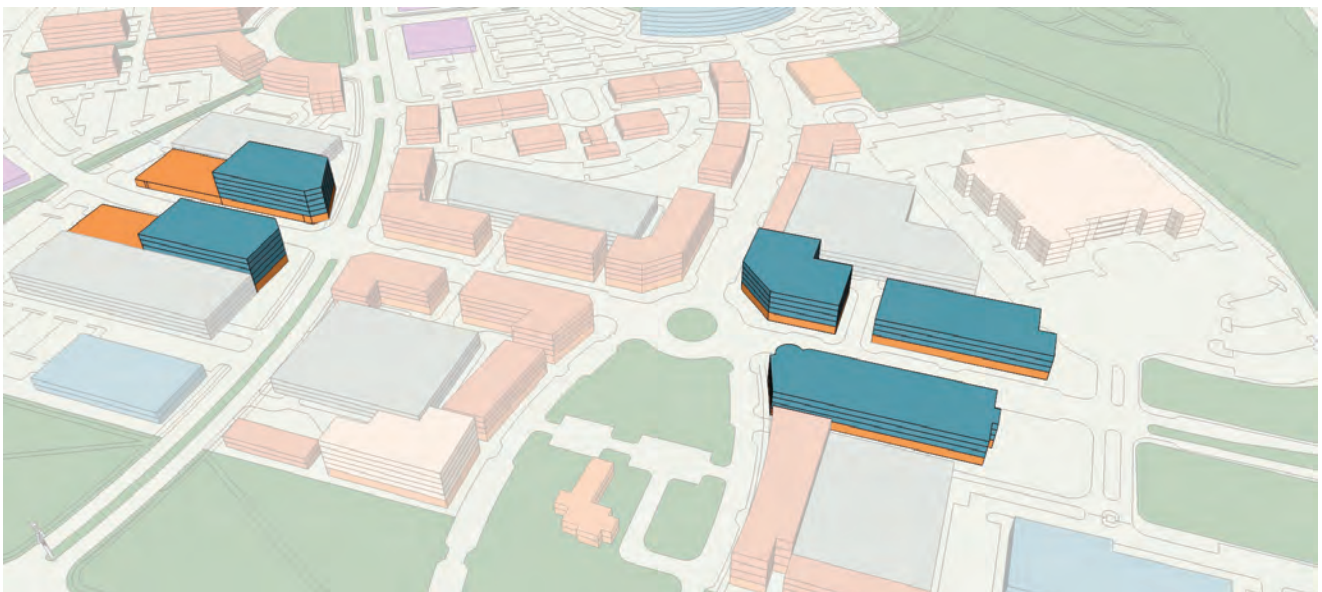
A Mixed-use Office

Building Siting

- The main facades of buildings shall be parallel to the streets or property line.
- Buildings shall sit directly on setback line (back of sidewalk).
- Buildings may vary in depth up to 5 feet to undulate the façade providing variety and interest, especially at retail.
- Corner lots are considered to have two front lot lines.
- Not less than 80% of the front lot width shall be covered by direct building frontage.
- Building adjacencies shall create vistas to connect the retail environment to garages structures in a prominent manner.

Height and Massing

- Building heights shall be up to 5 stories over retail but no less than 3 stories over retail. Retail floor-to-floor shall be 18 feet minimum, 20 feet preferred.
- Building massing should step back at the corners on Aristides Boulevard intersections and can increase height to articulate and celebrate these most urban corners.
- A strong unifying horizontal expression over the ground level retail area is encouraged.
- Building mass setbacks are allowed only on the upper floors and are encouraged.
- Predominant roof form shall be flat and parapeted. Vertically projecting elements



Mixed-use Office Buildings in Carnahan Center

or elevated sloped roof forms are allowed at special feature building segments.

- Buildings may include a single story ground level retail mass that projects substantially beyond the upper building massing. This segment of the building shall conform to the character of the parent building and shall follow the guidelines specific to retail uses.

Parking and Service

- Parking should be hidden behind buildings in structured decks. Below grade parking is allowed. If a portion of a parking structure or service area is visible from the street, it should be screened physically or with appropriate landscaping.
- Parking deck structures are limited to 3 stories to preserve the building's 2nd story views, light and egress.
- Parking structures may stand free of the buildings or connect but shall allow unencumbered service drive access at sides and rears of buildings.
- Lighting in parking structures shall be arranged so that the source of light is screened from view at the buildings street sidewalks.
- All services to be located to building rears or sides accessed by tertiary roads between or beyond buildings. No service drive curb cuts are allowed on any of the main streets within the building street wall frontage.
- Dumpsters must be completely enclosed and recessed into the buildings they serve.



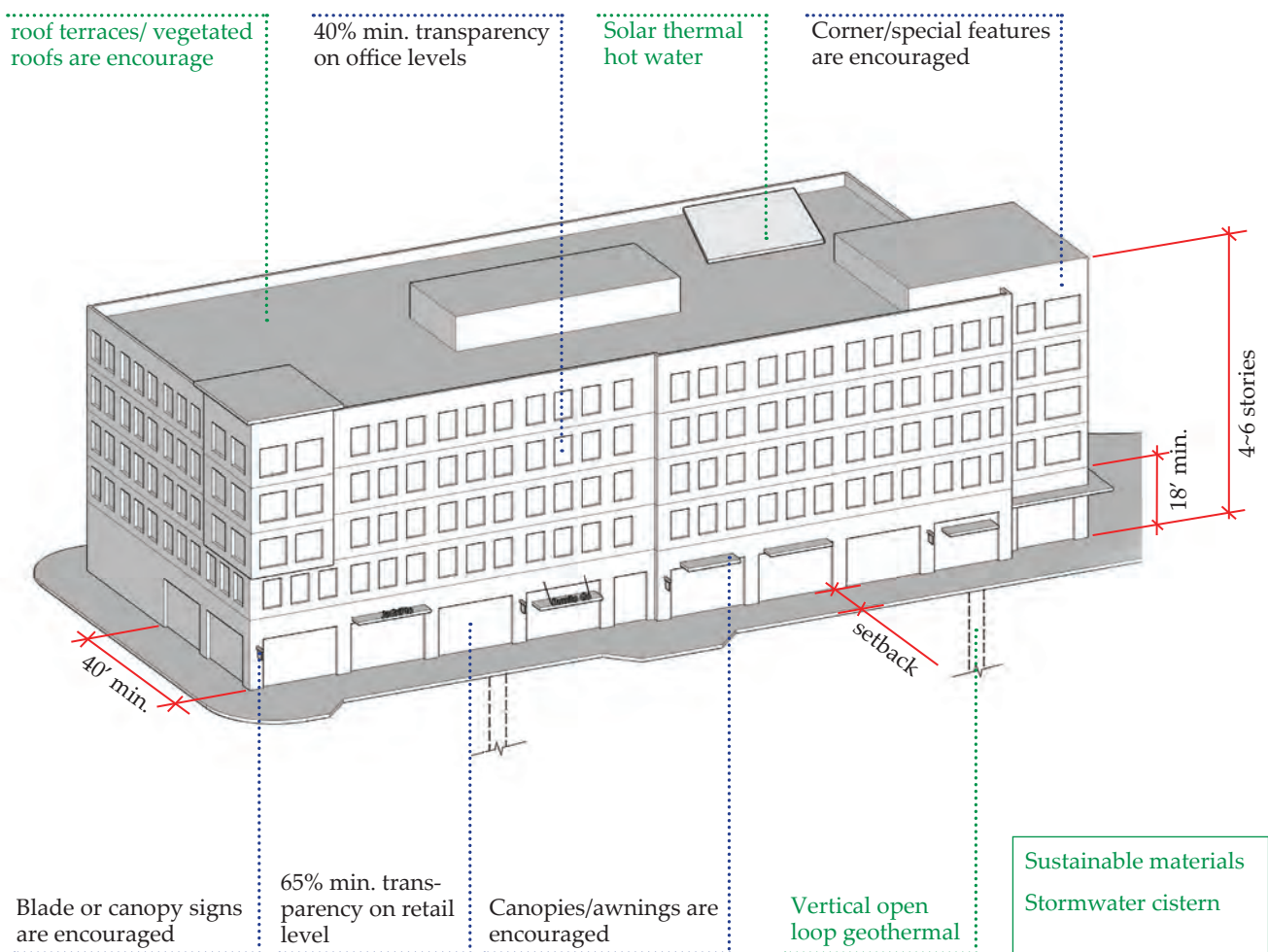
Mixed use office mainstreet

Architectural Design

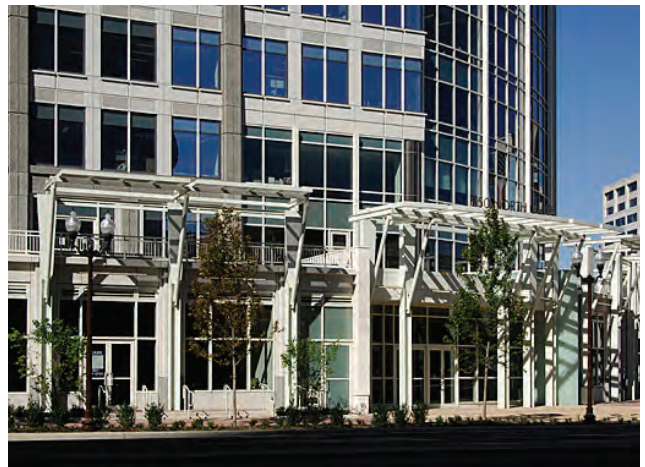
- Front and side facades shall be of the same or similar materials and similarly detailed.
- Upper floor may utilize materials differing from other floors to provide unique expression.
- Building façade materials shall be high quality and durable. Preferred materials include: brick, stone, high quality precast concrete, metal and glass, and preapproved newly developed materials as may present themselves in the future. Wood and aluminum may be used as storefront and trim materials. Finished face concrete masonry may be used at ground level at service areas. Locally derived, sustainable and high-recycled content materials are strongly encouraged.
- Buildings may express uniform usage of materials, or may differentiate major building segments toward creating a multiple-building aesthetic by using various materials per segment only when substantial physical breaks and planar offsets are incorporated at segment points to prevent a flat building appearance.
- Building fenestration at floors above ground level shall include a minimum of 40% openings or windows. While punched windows are encouraged, substantially increased openings or all-glass walls are allowed in recessed or special corner feature areas.
- Reflective or dark tinted glass is prohibited. Ground level storefronts shall have transparent glass.



Street level retail at service access corner



Sidewalk integrated building entry



Retail canopies and differentiation

- Main entrances shall be at the front facades and articulated as significant public entrances.
- Main entrances can be emphasized with canopies or similar features which should provide a minimum clearance of 9 feet above the sidewalk.
- Blank walls at ground level shall be avoided. The maximum length of any segment of a street-fronting ground floor façade without transparency is 20 feet.
- Storefronts shall be provided for no less than 65% of the length of street-fronting ground floor facades. Storefront sills shall be no higher than 3 feet above the adjacent sidewalk and tops of storefront openings shall be no less than 10 feet above the adjacent sidewalk.
- All ground level retail shall have its own entrance opening directly to a street.
- Storefronts shall continue at the exposed side of buildings for no less than 40 feet from the front façade.
- Awnings are allowed over storefront windows and doors. No awning may be substantially wider than the storefront it covers. Awnings should provide no less than 8 feet clearance above sidewalks. Awnings must be hung from the building façade and may not be supported by columns on the sidewalk.
- Building lighting should be mounted at 8 feet or higher. Lighting shall be aimed downward at the building such that no light projects above the fixture.
- No mechanical or utility equipment may be located within 40 feet of the street-fronting



Street side dining and retail variety

façade or corner, and shall not be visible from any street.

- Flat roofs should drain to internal roof drains and/or to the rear leaving street-fronting façades free of gutters and downspouts. Roofing on lower level or ground floor building segments visible directly from upper floors of buildings shall be vegetative, white, or otherwise decorative in design.

Special Features

- At building corners and spaces between buildings, change of materials, projections and delineating features and additional height are allowed.
- Building arcades at ground level are strongly discouraged except for recessed corner conditions at the Ellipse intersections.
- Balconies are allowed at top floor setbacks.
- Roof terraces or vegetative roofs are encouraged. Roofs shall be considered a visible 'elevation' and shall be designed with features, materials and patterns that reflect the character of the building.
- Façade mounted flags, clocks, specialty lighting, and specially approved banner signage are allowed.
- All signage should be located within 12 to 18 feet above grade. Blade or canopy signage is encouraged.
- Marquee signage may be attached to upper stories announcing large destination tenants or users, however careful attention shall be given to size and lighting.



Projected retail signage and canopies

MIXED-USE BUILDING

B Mixed-use Multi Family

Building Siting

- Main facades of buildings shall be parallel to the streets or property line.
- Buildings shall sit directly on setback line (back of sidewalk).
- Buildings may vary in depth up to 5 feet to undulate the façade providing variety and interest, especially at retail.
- Corner lots are considered to have two front lot lines.
- Not less than 80% of the front lot width shall be covered by direct building frontage.
- Building adjacencies shall create vistas to connect the retail environment to garages structures in a prominent manner.

Height and Massing

- Building heights shall be up to 5 stories over retail but no less than 3 stories over retail. At the Georgetown Pike Center neighborhood, buildings shall be no less than 2 stories over retail. Retail floor-to-floor shall be 18 feet minimum, 20 feet preferred.
- Building massing should step back at the corners on Aristides Boulevard intersections and can increase height to articulate and celebrate these most urban corners.
- A strong unifying horizontal expression over the ground level retail area is encouraged.
- Building mass setbacks are allowed only on the upper floors and are encouraged.
- Predominant roof form shall be flat and parapeted. Vertically projecting elements or elevated sloped roof forms are allowed at



Mixed-use Multi Family Buildings in Carnahan Center

special feature building segments. Additional roof level occupiable volumes set back a minimum of 20 feet are allowed for amenity use.

Parking and Service

- Parking should be hidden behind buildings in structured decks. Below grade parking is allowed. If a portion of a parking structure or service area is visible from the street, it should be screened physically or with appropriate landscaping.
- Parking deck structures are limited to 3 stories to preserve the building's 2nd story views, light and egress.
- Parking structures may stand free of the buildings or connect but shall allow unencumbered service drive access at sides and rears of buildings.
- Lighting in parking structures shall be arranged so that the source of light is screened from view at the buildings street sidewalks. Top level perimeter shall be solid to screen headlights into residential units.
- All services to be located to building rears or sides accessed by tertiary roads between or beyond buildings. This includes move-in events. No service drive curb cuts are allowed on any of the main streets within the building street wall frontage.
- Dumpsters must be completely enclosed and recessed into the buildings they serve. Retail waste rooms must isolate odor and unreasonable noise from residents.



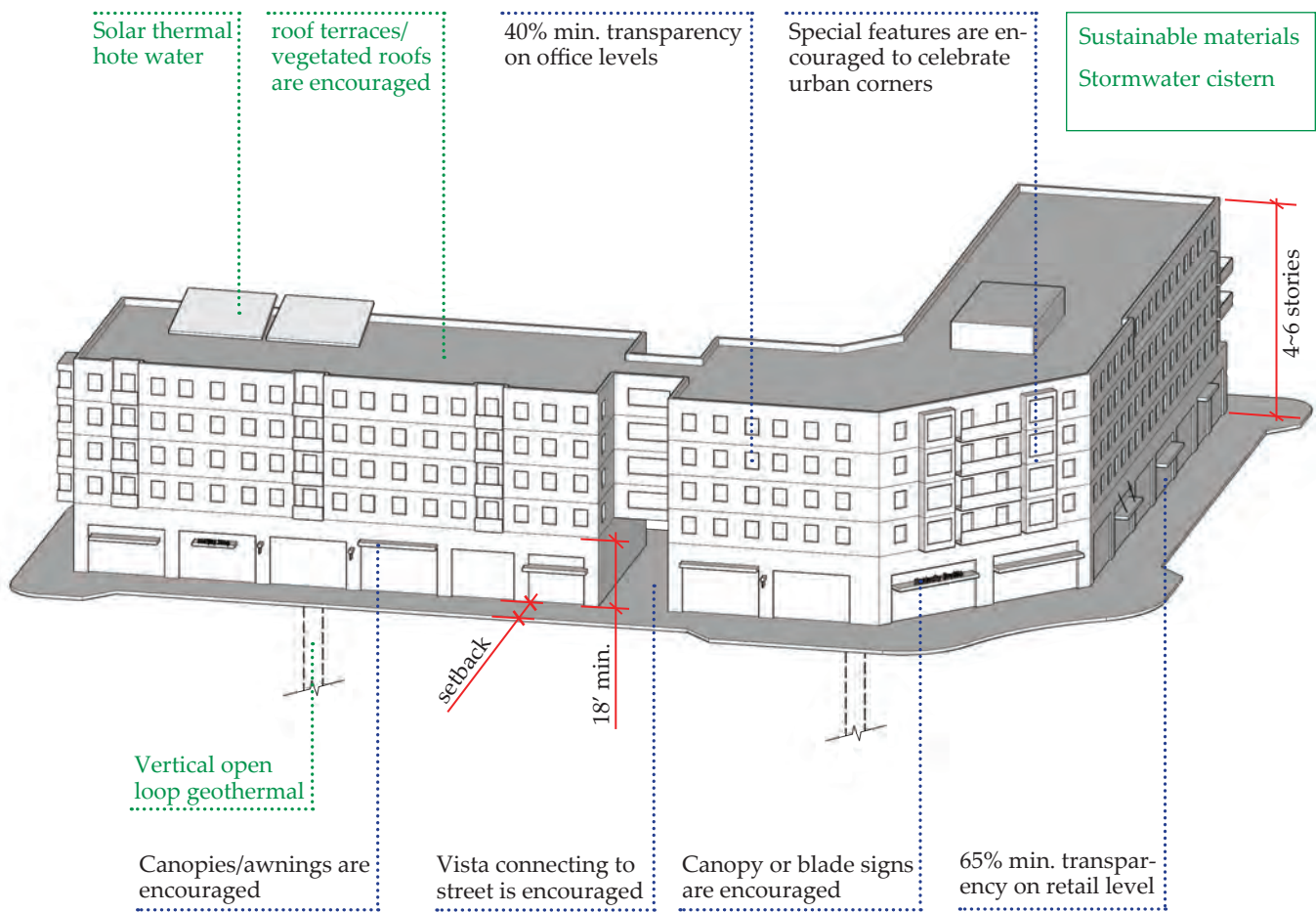
Special corner treatment

Architectural Design

- Front and side facades shall be of the same or similar materials and of a similar level of detail.
- Upper floor and recessed areas may utilize materials differing from other floors to provide unique expression.
- Building façade materials shall be high quality and durable. Preferred materials include: brick, stone, high quality precast concrete, metal and glass, and preapproved newly developed materials as may present themselves in the future. Finished face concrete masonry may be used at ground level at service areas. Wood and aluminum may be used as storefront and trim materials. Locally derived, sustainable and high-recycled content materials are strongly encouraged.
- Buildings may express uniform usage of materials, or may differentiate major building segments toward creating a multiple-building aesthetic by using various materials per segment only when substantial physical breaks and planar offsets are incorporated at segment points to prevent a flat building appearance.
- Building fenestration at floors above ground level shall include a minimum of 40% openings or windows. While punched windows are encouraged, substantially increased openings or all-glass walls are allowed in recessed or special corner feature areas.
- Reflective or dark tinted glass is prohibited. Ground level storefronts shall have transparent glass.



Special corner and balconies



Urban scale balconies and parapet design



Integrated street retail

- Main entrances shall be at the front facades and articulated as significant public entrances.
- Main entrances can be emphasized with canopies or similar features which should provide a minimum clearance of 9 feet above the sidewalk.
- Blank walls at ground level shall be avoided. The maximum length of any segment of a street-fronting ground floor façade without transparency is 20 feet.
- Storefronts shall be provided for no less than 65% of the length of street-fronting ground floor facades. Storefront sills shall be no higher than 3 feet above the adjacent sidewalk and tops of storefront openings shall be no less than 10 feet above the adjacent sidewalk.
- All ground level retail shall have its own entrance opening directly to a street.
- Storefronts shall continue at the exposed side of buildings for no less than 40 feet from the front façade.
- Awnings are allowed over storefront windows and doors. No awning may be substantially wider than the storefront it covers. Awnings should provide no less than 8 feet clearance above sidewalks. Awnings must be hung from the building façade and may not be supported by columns on the sidewalk.
- Building lighting should be mounted at 8 feet or higher. Lighting shall be aimed downward at the building such that no light projects above the fixture.
- No mechanical or utility equipment may be located within 40 feet of the street-fronting façade or corner.
- No mechanical systems shall be visible from any street. Unit exhaust and louvers are not allowed on facades; systems shall route through roof
- Flat roofs should drain to internal roof drains and/or to the rear leaving street-fronting façades free of gutters and downspouts. Roofs may be occupiable and embellished for amenity use. Stair and elevator access to roof shall be integrated in to the core architecture.

Special Features

- At building corners and façade segments at spaces between buildings, change of materials, projections and delineating features and additional height are allowed.
- Building arcades at ground level are strongly discouraged except for recessed corner conditions at the Ellipse intersections.
- Balconies are allowed at top floor setbacks. Projecting balconies are not allowed into Aristides Right-of-Way. Recessed or projecting balconies are allowed at other facades.
- Roof terraces or vegetative roofs are encouraged. Roofs shall be considered a visible 'elevation' and shall be designed with features, materials and patterns that reflect the character of the building.
- Façade mounted flags, clocks, specialty lighting, and specially approved banner signage are allowed.
- All signage should be located within 12 to 18 feet above grade. Blade or canopy signage is encouraged.



Special roof level and balcony features

MIXED-USE BUILDING

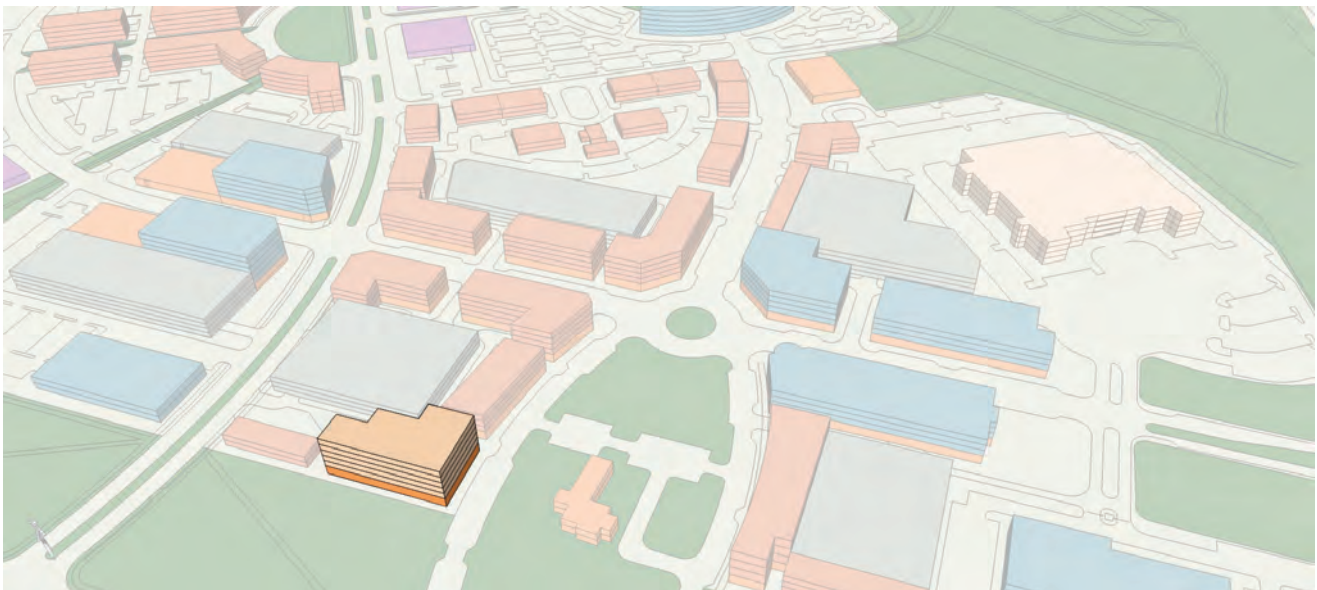
c Mixed-use Hotel

Building Siting

- Main facades of buildings shall be parallel to the streets or property line.
- Buildings shall sit directly on setback line (back of sidewalk).
- Buildings may vary in depth up to 8 feet to undulate the façade providing variety and interest, especially at retail.
- Corner lots are considered to have two front lot lines.
- Not less than 80% of the front lot width shall be covered by direct building frontage.
- Building adjacencies shall create vistas to connect the retail environment to garages structures in a prominent manner.

Height and Massing

- Building heights shall be up to 8 stories over ground floor but no less than 5 stories over ground floor. Retail floor-to-floor shall be 15 feet minimum, 18 feet preferred.
- Building massing may articulate inward or outward at the prime street façade corner and unoccupied feature elements may increase height up to an additional story.
- Predominant roof form shall be flat and parapeted. Pitched roof forms are allowed at corners and feature areas. Additional height is allowed at pitched roofs and special feature building segments.



Mixed-use Hotel Building in Carnahan Center

Parking and Service

- Parking should be hidden behind buildings in structured decks. Below grade parking is allowed. If a portion of a parking structure or service area is visible from the street, it should be screened physically or with appropriate landscaping.
- Parking deck structures are limited to 4 stories and must be designed to preserve the building's lowest guest room views, light and egress.
- Parking structures may stand free of the buildings or connect but shall allow unencumbered service drive access at sides and rears of buildings.
- Lighting in parking structures shall be arranged so that the source of light is screened from view at the buildings street sidewalks and from guest rooms beyond.
- All services to be located to building rear or sides accessed by tertiary roads between or beyond buildings. No service drive curb cuts are allowed on any of the main streets within the building street wall frontage.
- Dumpsters must be recessed into the buildings they serve. Trash room must isolate odor and unreasonable noise from residents.



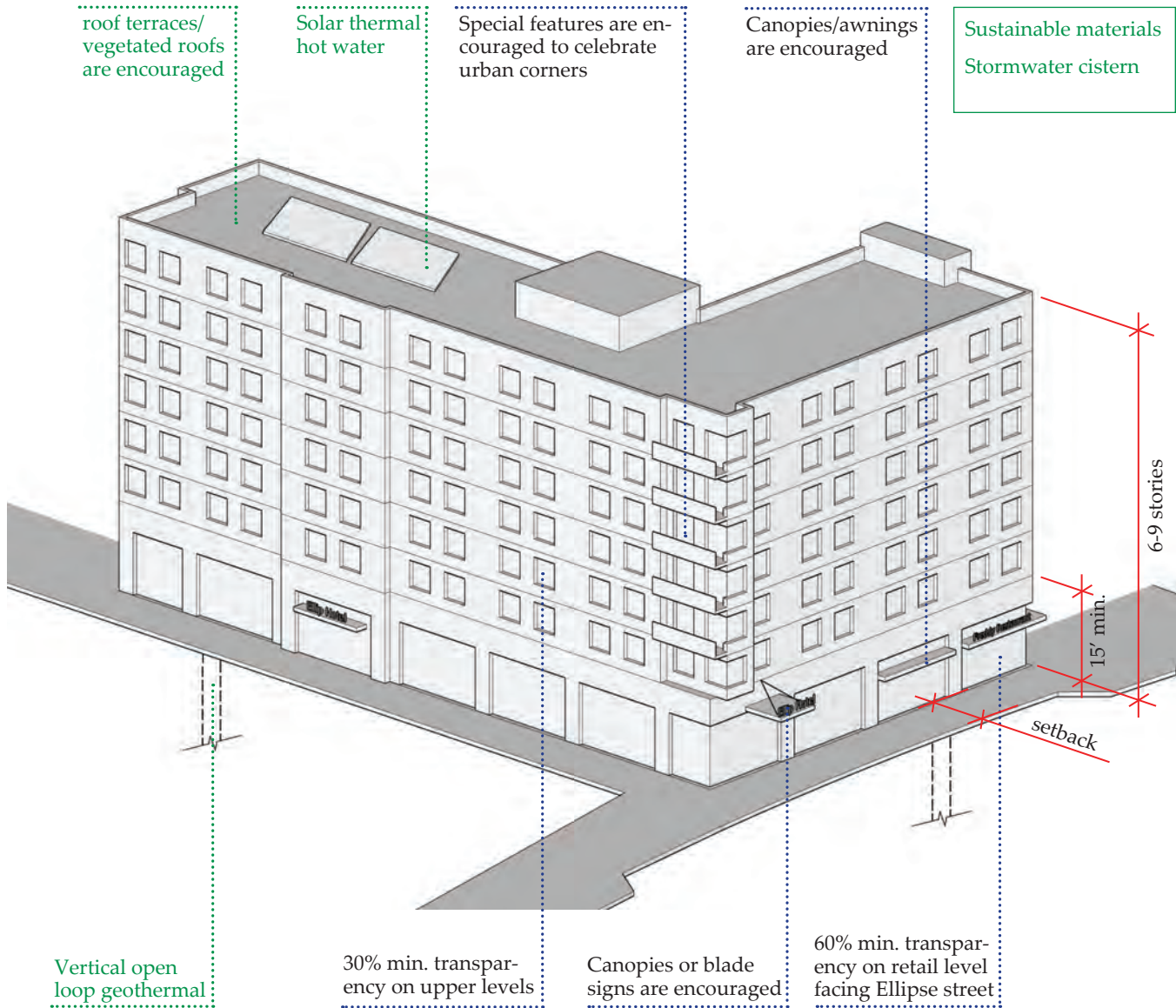
Special corner and open space engagement

Architectural Design

- Front and side facades shall be of the same or similar materials and similarly detailed.
- Upper floor and recessed or projected areas may utilize materials differing from other floors to provide unique expression.
- Building façade materials shall be high quality and durable. Preferred materials include: brick, stone, cast stone, metal panels and glass, and preapproved newly developed materials as may present themselves in the future. Finished face concrete masonry may be used at ground level at service areas. Wood and aluminum may be used as storefront and trim materials. Locally derived, sustainable and high-recycled content materials are strongly encouraged.
- Building fenestration at floors above ground level shall include a minimum of 30% openings or windows. While punched windows are encouraged, substantially increased openings or all-glass walls are allowed in recessed or special corner feature areas.
- Reflective or dark tinted glass is prohibited. Ground level storefronts shall have transparent glass.
- Main entrance shall be at The Ellipse street facade and articulated as a significant public entrance.
- Main entrance shall be emphasized with porte-cochere feature which should provide a minimum clearance of 14 feet above the sidewalk and arrival drop-off.



Integrated meeting facilities



Corner feature



Porte cochere

- Blank walls at ground level shall be avoided on street and Quadrangle green space facades. The maximum length of any segment of street-fronting ground floor façade without fenestration is 20 feet.
- Storefronts shall be provided for no less than 60% of the length of The Ellipse street-fronting ground floor facade. Storefront sills shall be no higher than 2 feet above the adjacent sidewalk and tops of storefront openings shall be no less than 9 feet above the adjacent sidewalk.
- Any ground level retail other than restaurant shall have its own entrance opening directly to a street. A restaurant may include entrances from the hotel lobby but must provide dining engaging the Quadrangle green lawn as an amenity.
- Awnings are allowed over storefront windows and doors. No awning may be substantially wider than the storefront it covers. Awnings should provide no less than 8 feet clearance above sidewalks. Awnings must be hung from the building façade and may not be supported by columns on the sidewalk.
- Building lighting should be mounted at 8 feet or higher. Lighting shall be aimed downward at the building such that no light projects above the fixture.

- No mechanical systems shall be visible from the Ellipse street or the Quadrangle green space.
- Flat roofs should drain to internal roof drains and/or to the rear leaving street-fronting façades free of gutters and downspouts.

Special Features

- At building corners and spaces between buildings, change of materials, projections and delineating features and additional height are allowed.
- All building signage should be located within 10 to 16 feet above grade with operator or marquee signage allowed at top level.
- Roofs shall be considered a visible 'elevation' and shall be designed with features, materials and patterns that reflect the character of the building.



Corner feature



Open space outdoor dining environment

5.7

SUSTAINABILITY

Energy Conservation

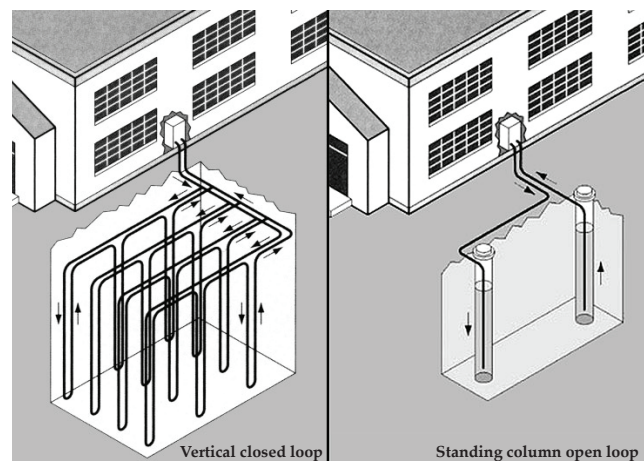
Designs for new buildings must make energy conservation a priority. According to the U.S. Department of Energy, buildings consume approximately 37% of the energy and 68% of the electricity produced in the United States annually. In addition to the pollutants released by power plants, generating electricity from fossil fuels has a multitude of harmful effects on the environment beginning with extraction, transportation, refining, and distribution.

Sustainable design confronts these problems by reducing the amount of energy required and using less harmful forms. In addition to the environmental benefits, buildings with higher energy performance will have lower operating costs. The rate of return on energy-efficiency measures will only improve as world competition for the available supply of fuel increases.

Geothermal Heating and Cooling

A geothermal heat pump moves heat from the earth into the building in the winter, and pulls the heat from the building and discharges it into the ground in the summer. It may also provide water heating to supplement or replace conventional water heaters. Geothermal heating and cooling systems are a means to reduce reliance on fossil fuels as they typically operate three times more efficiently than conventional systems. Geothermal systems are space saving, quiet and reliable operating practically maintenance free.

Buildings surrounded by open space and parking lots can take advantage of this area by installing a conventional horizontal closed loop system. Based on energy cost savings, the expected payback for this system is seven years. Buildings in the Carnahan Center should consider tapping into aquifers with a vertical open loop system. Open loop systems utilize two small wells under the building and have an expected payback of five years.



Geothermal diagrams

Daylighting

Daylighting design requires a careful balance of heat gain and loss, controlling glare and visual quality, and planning for variations in daylight availability. Major considerations during early design include building orientation, window size and spacing, glass selection, reflectance of interior finishes, and location of interior partitions. Further building design strategies to employ include shading devices, light shelves, light monitors, courtyards, atriums, and window glazing.

Daylighting will reduce the need for electric lighting in building interiors resulting in lower operating costs. Well designed daylit spaces have also been shown to increase occupant productivity and reduce absenteeism.



Multi-level daylighting

Solar Thermal Systems

Solar thermal is among the most cost-effective of all renewable energy systems. The most common solar thermal system is an indirect active water heater. These systems use pumps to circulate an antifreeze solution through heat-absorbing solar thermal collectors and into a heat-transfer unit where it warms the cool water heading into a conventional hot water tank. Solar thermal systems can be used to meet all the hot water needs of a building or supplement a conventional hot water system, eliminating or greatly reducing the need for gas or electricity to heat water.



Direct daylighting



Solar thermal system

SUSTAINABILITY

Energy Production

On-site renewable energy.

Solar Power

Photovoltaic (PV) panels are a simple, low-maintenance method for producing onsite renewable energy. Equip buildings, especially those with large flat roofs, with photovoltaic panels to produce electricity for daytime building operations. PV panels are especially effective because their peak production matches the peak demand for office buildings. Should the initial investment in photovoltaic panels seem cost prohibitive, consider leasing roof space to energy providers that can install and maintain the panels onsite.



Photovoltaic parking canopies at surface lot



Photovoltaic integrated building feature

SUSTAINABILITY

Sustainable Materials

Considering the extensive network of extraction, processing, and transportation steps required for production, the selection of building materials becomes an important aspect of sustainable design. Production of many building materials depletes both natural resources and habitats while polluting our air and water. Even after these materials have been created and shipped to the site, construction and demolition wastes continue to overload our landfills constituting nearly 40% of the total solid waste stream in the United States.

When selecting materials for new buildings it is essential to consider new and alternative sources. Substituting salvaged materials for new materials can reduce costs while adding character to

the building. Recycled-content materials can make use of waste products that might otherwise end up in landfills. Choosing local materials is especially important because it reduces transportation while supporting the local economy. Rapidly renewable materials should be considered because they minimize natural consumption and protect natural habitats. Selecting wood that has been certified by the Forest Stewardship Council will help protect natural forests and their related ecosystems.



Sustainable materials - Linoleum flooring



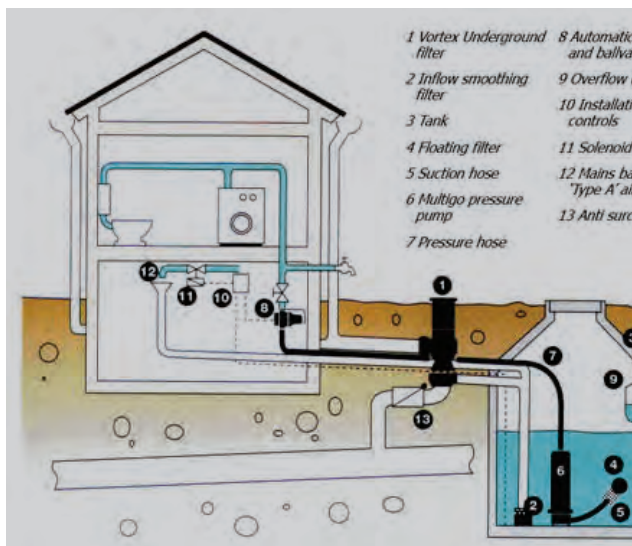
Sustainable materials - Certified wood

SUSTAINABILITY

Water Efficiency

Incorporate high efficiency fixtures, waterless urinals, and occupant sensors into the building design to reduce the potable water demand. Consider harvesting stormwater and graywater for non-potable uses such as irrigation and toilet flushing. Large cisterns are an effective and widespread method for capturing water from roof run-off. The cistern can be used to store large quantities of water to be used later for on-site irrigation or sewage conveyance.

Reducing the amount of potable water used for building functions helps protect natural water resources such as rivers, streams, and underground aquifers. This in turn reduces the chemical inputs at municipal water treatment works leading to more stable taxes and water rates. Additional benefits of potable water conservation include reduced energy use and lower building operating costs.



Water reuse system diagram

Vegetated Roof

Incorporate a vegetated roof into the design to mitigate the heat island effect, conserve energy, and manage stormwater. Urban and heavily paved areas are known to have higher air temperatures due to high concentrations of dark surfaces. Simply covering a roof with sedums and other very low maintenance plants can return air temperatures to more natural levels. Vegetated roofs can lower heating and cooling demands and conserve energy by stabilizing building temperatures. The insulating properties of the soil and plantings prevent excess heat gain from the sun on hot days, while slowing heat loss on colder days. On rainy days, a vegetated roof will help control the quantity of water dumped into storm drainage systems and the quality of water returned to the ground. The plants absorb all the water they need during storms and act as a natural filter for the water that passes through to the storm drains.



Vegetated roofing as integrated building elevation

Design Implementation

Working Procedures of the Design Review Committee

The Design Review Committee is authorized to review and act on all development proposals in accordance with the review procedures described herein, and to apply its judgment in accordance with the criteria contained in these guidelines.

Each development proposal will be reviewed by the Design Review Committee as the design for the building(s) and the site evolves, in accordance with the following schedule:

Pre-Design Conference

Before the design is initiated, the Design Review Committee will meet with the applicant, the applicant's architect, and other consultants to clarify mutual design objectives, building program.

Schematic Design Review

This will include plans, sections, elevations, and other materials sufficient to clearly indicate the placement, height, and massing of the building(s), the horizontal layout of on site access roads, parking facilities, and service areas, the location of building entries, the overall grading concept, the intended treatment and preservation of natural landscape features, and the application of new landscape elements.

At the Committee's option, a meeting will be held with the applicant, the applicant's architect, and other consultants to discuss the design at this stage.

1. Property boundaries, including relationship to adjacent lands and access roads.
2. Topography, shown by one foot contours.
3. Locations of any existing utilities or other improvements on the site.
4. Description of general site drainage characteristics.
5. Location and description of any characteristics and noteworthy natural features.
6. Description of existing vegetation on the parcel, including the location, name, size, and condition of trees and shrubs. This shall include trees of 6" caliper or larger and all groups of trees, whatever their sizes.

Preliminary Plans

The applicant will submit no less than three (3) sets of preliminary architectural and site plans, including:

1. Dimensioned building plans, sections, and elevations, with representations of exterior materials, textures, colors, fenestration, and other detailing necessary for accurately depicting the finished building and its site.
2. Outline specifications to indicate the intent for major architectural, structural, mechanical, electrical, and site elements.
3. Samples of proposed exterior materials and colors.
4. Site plan(s) showing:
 - a. A grading concept at an appropriate interval.
 - b. Layout of all roads, walks, paved areas, and other elements which constitute modification of the natural site.

- c. A planting concept, including placement and species of new plants and integration with existing planting.
 - d. A site lighting concept, with heights, spacing, and other characteristics.
5. A cross section of the site, indicating the relationship of the building and major grading to the street, adjacent properties, and tree edges. The site plan and sections will be sufficiently accurate to permit analysis of visual screening, erosion control, drainage, tree protection, and landscape architectural design.
6. Concept plans for the major entrance sign and building identification sign, if any, including dimensions, location, material, lettering, color, lighting, and elevations of the prototype for on site directional signs, showing format, typeface, and colors.
7. Proposed methods for protecting any existing trees affected by grading, paving, or other construction.
8. An estimate of the maximum number of employees for the proposed development.
9. The results of a traffic impact analysis indicating (1) the number and peak hour time of cars entering and leaving the particular installation, (2) the estimated peak hour traffic at the intersection of the parcel entrance and the collector road, and (3) the estimate of the impact of the traffic generated by this installation on Citation Boulevard and Newtown Pike.
10. The applicant shall submit written evidence in the form of a letter from the Kentucky Department for Environmental Protection that the plan for the management of toxic and hazardous waste material meets their standards.
11. A description of proposed operating characteristics in sufficient detail to permit assessment of the extent of noise, odor, glare, vibration, smoke, dust, gases, radiation, or liquid wastes that may be created and proposed mitigation of these as may be necessary. Approval, rejection, or recommendation for changes will be made by the Committee within fifteen days of receiving

the proposal. The Committee will reserve the right to request a meeting with the applicant, the applicant's architect, and other consultants to discuss the design at this stage.

Final Plan Approval

The applicant will submit working drawings and specifications for the building and the site to ensure adherence to the approved design.

Prior to any site clearing, development, or building, the final plan must be submitted to the Design Review Committee for a review of the plan's conformity to the approved design. The Committee will have fifteen days after the three sets of required plans and specifications have been submitted to review and give an opinion of the final plan. The Committee will reserve the right to request a meeting with the applicant to discuss any modifications necessary to make the design conform to the approved preliminary design.

The Design Review Committee will return to the applicant one complete set of plans and specifications marked "Approved" and signed by an authorized representative of the University of Kentucky. This set will become a part of the agreement between the applicant and the University of Kentucky.

SITE PLAN REVIEW CHECKLIST

Site

1. Coverage
 - a. Building footprint 25% maximum
2. Building setbacks
 - From Interstate 64/75: 100 feet
 - From Newtown Pike: 200 feet
 - From Citation Boulevard: 100 feet
 - From McGrathiana Parkway: 10 feet
 - From local streets: Varies; See Chapter 2

Buildings

1. Floor area ratio: 0.4 typical;
2. In the area of Carnahan Center, a floor area ratio of 1.0 is recommended. Note that this is intended to stimulate the creation of an urban town center in this location.
3. Exposed mechanical equipment on roof shall be screened from view.

Parking

1. Offices: One space per 400 square feet of floor area
2. Laboratories: One space per 500 square feet of floor area.
3. Retail: One space for each 400 square feet of floor area for the first 10,000 square feet. One space per 200 square feet for floor area above 10,000 square feet. For ground floor retail within an office or laboratory building that is locally serving and does not exceed 2,000 square feet, no off street parking is required.
4. Parking structures: Maximum of four stories above grade. In no case shall a parking structure exceed the height of the surrounding buildings it serves.

Service areas:

1. Screened from roads and exterior views.
2. Service area noises buffered.
3. Designed to mitigate impacts of any toxic or hazardous wastes.

Utilities

1. Indicate availability and underground location.

Lighting

1. Major lines and fixtures indicated.

Signage

1. Company identification sign at parcel entry.
2. Smaller identification sign at principal entrance to building.

3. Directional, traffic, and parking control signs.
4. All signs consistent with site architecture in colors, materials, and design.

Landscaping

1. Existing major trees to be preserved where possible, unless dying or badly damaged.
2. Development zones
 - a. All construction of buildings and parking areas (except access drives) shall be restricted to the development zones shown on the plan.
 - b. All landscape treatment visible from Newtown Pike to be compatible with that of the Newtown Pike scenic easement zone.
 - c. Planting near buildings to respond to architectural features and materials.
 - d. Fences to be used only for purposes of security or during building construction.
 - e. Proposed landscape plan must comply with the minimum requirements of LFUCG.

Stormwater runoff control

1. Cane Run watershed is protected against pollution from surface runoff, debris, and hazardous materials.
2. Erosion and sediment to be controlled by methods and via entities described in Chapter 4.

Hazardous materials

1. Not to be disposed of on site.
2. Plan for use and disposition submitted to Design Review Committee and Kentucky Department for Environmental Protection. Reply from state agency submitted with Final Plans for approval.