University of Colorado Boulder

February 4, 2019

Dear City Council Members,

Re: Cover Letter to Accompany Annexation Petition Written Statement for CU Boulder South

At the city's request, the University of Colorado Boulder is submitting this application for annexation of its CU Boulder South property in order to facilitate the city's need to expeditiously develop and implement a flood mitigation project on CU Boulder's property. This is well ahead of the schedule under which the university would have otherwise submitted this application, as we have no near-term development plans. We will begin our campus master planning process by the end of 2019 with the plan expected to be complete by the end of 2021. The university is committed to partnering with the city in this effort to achieve the timely construction of the city's flood mitigation project. As a member of the Boulder community, the university joins city council in its ardent interest in advancing the life safety of our south Boulder neighbors. We moved quickly to bring forward this application in order to remove any uncertainty around availability of land for the flood mitigation project and to maximize the opportunity for city council to take swift action to implement the project.

We acknowledge that this is different from the city's typical annexation process and want to ensure that all members of city council and the relevant boards have a clear understanding of the extensive list of development limitations the university has agreed to and the significant benefits we are bringing to the table. The university and the city regularly collaborate on a multitude of projects. In this case, which is clearly unique, the university has gone well above and beyond its normal practices by agreeing to an extraordinary level of limitations on development of university property and providing a future opportunity for the city to review and submit input to the concept design for CU Boulder South.

The University of Colorado Boulder's master planning process is a multiyear process due to the complexity of the university and future planning for the many related departments, colleges, institutes and operational units. During that process we will engage the city and community for input. Once complete at the end of 2021, the Campus Master Plan will require the approval of the Board of Regents and the Colorado Commission on Higher Education. Under our typical process, only then would planning specific to the CU Boulder South site be able to begin.

CU Boulder is committed to the community and its success in the long term. While we are not able to provide a site plan as we enter into the annexation process, we have made every effort in our petition to provide as much clarity around how we will limit construction on the site through the BVCP Guiding Principles and adding further clarification through our letter to Council on October 1, 2018 and this application. We have also offered the opportunity for the city to provide input on the future concept design for CU Boulder South in addition to significant other benefits as listed below.

The university has listened to the community and city council requests and input along the way in these discussions over the past several years. Over time, we have modified and added to the benefits that we will provide to the city, including a few more reflected herein.

Community Benefits - Offered by CU Boulder to the City of Boulder Through Annexation:

CU Boulder has committed the following to the city in recognition of its partnership with the community and of the criticality of the flood mitigation project through the 2015 Boulder Valley Comprehensive Plan (BVCP) and Guiding Principles (BVCP GP) therein as enumerated below. Together with the city, county and community we worked hard to develop the Guiding Principles. We remain committed to the spirit of those principles and are pleased to collaborate in their further refinement. This list reflects CU Boulder's commitments under those guidelines.

	CU Commitment to the Community	**Value/Benefit to City and Community**
1.	The university commits to convey to the city, in fee simple, up to 80 acres of CU Boulder's property for construction of the flood mitigation project (rather than the prior commitment to provide access/use of up to 80 acres with conveyance limited to the land under the dam facilities).	$18,000,000 - As measured by the City's recent purchase of the Hogan Pancost property, at a price of $250,000 per acre, which CU discounted by 10% to reflect the size adjustment between the two properties The university's conveyance of the land to the city will enable the protection of up to 1900 dwelling units, 730 structures and 4100 people under a 500-year flood event, in the only area that allows for this project. (city staff presentation to council in

		June, 2018)
2.	The university has agreed to: (A) allow the city to remove the berm/levee per our letter of July 19, 2018 to city council, and (B) offered to consider selling the dirt to the city at an agreed-to price.	Potential avoidance of trucking costs by the city and neighborhood disruption and road impacts.
3.	The university has agreed to "maintain general consistency with the city's height limits" (BVCP GP) which the university clarified further in its October 1, 2018 letter to mean that CU will abide by a height limit of 55 feet for the construction of buildings on CU Boulder South.	The university is not subject to the city height limits on university property and would typically build to six floors rather than four. We have foregone this value in order to provide value to the community. Value to the community is: ● Smaller buildings ● Less traffic impact ● Viewshed protection
4.	The university commits that buildings on the site will be designed and sited to protect and complement the views of the mountain backdrop, particularly the viewsheds from the US 36 bike path, the South Boulder Creek Trail, U.S. 36 and SH 93. (BVCP GP)	Maintains aesthetic values of the community
5.	The university commits that development on the site will be compact and clustered in a village style. (BVCP GP)	The village(s) will be of high quality, human-scaled and contextually appropriate to neighboring properties.
6.	The university commits that no habitable structures or academic buildings will be built on the site within the FEMA 500-year flood plain.	The university has foregone development in this area and would typically build in a 500-year flood plain. The value to the community is: ● Fewer buildings ● Limits impervious cover ● Less traffic ● Large open areas on the site

		● Potential habitat restoration ● Retains areas for passive recreation, including trails and links to the South Boulder Creek Trail
9.	The university commits to prioritize building housing for faculty, staff, graduate students and non-first year students on the site to facilitate our common goal of providing more housing on university property.	An additional estimated 1100 dwelling units will be constructed on the site, resulting in (approximately) a 2.4% increase in the city's housing stock. Value to the community: ● Increased housing stock in the city ● Reduced pressure on existing housing stock ● Mitigates rental rate increases in the area ● Creates incentive for landlords to improve housing stock
10.	The university commits to provide quality construction that is contextually appropriate to the neighboring properties.	CU is recognized for and committed to providing quality architecture and adhering to strict CU construction standards.
11.	The university commits to development that will model future resiliency and sustainability in the design, construction and maintenance strategies of the property.	Design, construction, and maintenance will be a model of innovation and will support the city's Climate Commitment adopted December 2016. The city and the university are currently partnering on sustainability projects and this project will provide further opportunity to develop that partnership.

12.	The university commits to not build large-scale sports venues (such as a football stadium), high-rise buildings or large research complexes (such as those on its east campus).	Eliminates the possibility of large scale adverse transportation and aesthetic impacts to the adjacent neighborhoods.
13.	The university commits to create connections to open space trails and provide continued free use by the community of new and improved walking trails.	CU contributes to the city's multi-modal trail network, fosters the opportunity for alternative transportation, and ensures continuing public enjoyment of the site.
14.	The university commits that recreational fields it builds on the site will be available to the community for use.	There will be more recreational fields available in the community.
15.	The university commits to partner with the city to do additional transportation analysis to further develop performance-based standards. (BVCP GP)	Commitment to our continued collaborative partnership with the city. Value to the community: ● Limits traffic impacts ● Minimize duplication of services
16.	The university commits to work with the city to include innovative and long-range transportation technologies including electric vehicle, autonomous vehicles, etc., as well as possible joint options with city-funded transit. (BVCP GP)	Commitment to our continued collaborative partnership with the city. Value to the community: ● Expanded transportation opportunities for the community ● Testing of new technologies ● Leveraged funding opportunities
17.	The university commits to implement a multimodal hub for transportation.	Reduces potential additional demands on existing transit systems and potential new transit options for all community members.

18.	The university commits to not implement a “bypass” roadway between SH 93 and US 36.	Value to the community: ● Fosters neighborhood community feel ● Helps maintain existing traffic patterns ● Reduces potential impacts to both Table Mesa Drive and SH 93
19.	As a state entity, the university is not subject to the city’s development review process. At the city’s request, in an expanded benefit, the university commits to provide the city an opportunity to review plans at the initial CU Boulder South concept design with 60 days to provide input (rather than the prior commitment of 45 days as provided for in the Hotel Conference Center MOU).	Provides the city an unprecedented and unique role in influencing the CU Boulder South development at an earlier design phase.
20.	The university commits to not build first-year student housing nor will fraternities or sororities be located here.	The university houses first-year students on other university properties. By creating housing for faculty, staff and graduate students CU Boulder will increase the local housing stock by over 2.4%, reducing pressure on that stock as well as reducing commuter traffic on key arteries.

CU Boulder Requirements for the Annexation from City of Boulder

We realize that for the city to move forward efficaciously and expeditiously, CU Boulder needs to provide as much specificity in its requirements as possible in order to complete an annexation agreement and remove uncertainty for both entities in what is a significant and impactful decision. In the spirit of cooperation, and with an acknowledgement that time is of the essence with respect to flood mitigation development, we are providing the information city council needs to move forward prudently with the final selection of a flood mitigation project design.

- In consideration for the benefits provided by the University to the City under this annexation agreement, the City agrees to extend all City services; power, water, stormwater, and wastewater.
- At the time of annexation and the final construction and completion of the flood mitigation project, the University must retain in perpetuity its development rights to a minimum of 129 acres. The University's 129 acres of developable area of the Property is currently land use designated as “Public” under the BVCP (the "CU Development Tract").
- Any diminishment of the area of the CU Development Tract shall (a) be subject to University's written approval and, at University's option, the diminished area shall be proportionally replaced with land currently designated OS-O under the BVCP (such replacement land shall be subject to University's approval, shall be contiguous with and become a part of the remaining CU Development Tract area, and shall be zoned Public (PUB) by the City). Alternatively, at University's option and approval, City shall compensate University in cash for the fair market value of the applicable area or with land agreeable to the University in another location.
- Upon completion of the construction of the flood mitigation dam and related retention areas, CU Boulder must have no less than 30 appropriately graded acres available for construction of recreational/athletics fields (the "Rec Fields") in the area of the Property designated as PK-UO under the BVCP. The Rec Fields must be situated on the Property in a manner that provides reasonable ingress and egress (including ADA accessibility) for site visitors, teams, service vehicles, as well as proximate space for related facilities such as concessions, restrooms, and storage. If the Rec Fields cannot be located in the flood detention area, the University may construct the Rec Fields on OS-O-designated land, contiguous to the CU Development Tract.
- The City will include CU Boulder in the landscape and aesthetic planning of the Project. The Project design team shall collaborate with the University with respect to Recreational Field placement as well as the potential placement of bleachers on the slopes of the retention structure walls. University shall bear the sole cost and expense of design, development and construction of the Recreational Fields and related structures, as applicable.
- The city will ensure that the flood detention area used for recreational/athletics field development will be engineered to sufficiently drain within a reasonable period of time to ensure that the fields can remain functional after a flood.

- The city will ensure that recreational/athletics fields do not have ongoing water ponding issues not related to a flood event
- As stated, CU Boulder remains open to removal of the CU Boulder berm/levee. If removed, the following requirements must be met:
    - The city will ensure, at its sole expense, that construction and/or operation of the flood mitigation dam and related structures and removal of the berm/levee shall not increase the FEMA 100-year or 500-year floodplain on any of the CU Boulder South property, now or in the future.
    - CU Boulder will be provided the first option to use or sell the berm/levee material if the berm/levee is removed
    - The City will be responsible for securing all federal, state, and other governmental approvals to remove the berm/levee.
- All direct, indirect, and consequential costs of developing and constructing flood mitigation on CU Boulder South (exclusive of the value of the land conveyed to the city) shall be borne by the city, including, but not limited to:
    - Modification, realignment and/or reconstruction of existing access road(s) on the property, if CU Boulder determines that the design of the city's flood mitigation project necessitates such changes.
    - Any claims or damages resulting from the failure of the performance and safety of the dam and related structures in the future.
    - Any claims or damages resulting from the removal of the CU Boulder berm/levee in the future.
    - If successful design and development of the Project (a) requires relocation of CU Boulder's tennis facility, (b) materially and adversely affects CU Boulder's use and enjoyment of the tennis courts, or (c) impairs CU Boulder's ability to maintain the courts to NCAA Division I standards, then CU Boulder will have the option to reconstruct the tennis facility on land currently designated OS-O and contiguous to the remaining CU Development Tract area in a location determined by CU Boulder at its sole discretion. Such replacement land shall be subject to University's approval, shall be contiguous with and become a part of the remaining CU Development Tract area, and shall be zoned Public (PUB) by the City. City shall bear all actual costs of CU Boulder's design, development and construction of a comparable replacement tennis facility.
    - The City may demolish, at its sole cost and expense, the building currently located in the area of the Property designated as PK-UO under the BVCP. The City agrees to pay CU Boulder the replacement value of the building.
    - Any work required to ensure a high level of aesthetic value as agreed to by both the city and CU Boulder for large structures resulting from the flood mitigation project. For instance, an aesthetically pleasing finish on a large flood containment wall facing the area to be developed into housing.

    - If any jurisdictional wetlands are damaged or displaced as a result of the flood mitigation needs of the city, it is the responsibility of the city to secure any applicable wetland permits and mitigate the loss of the wetlands
- Any additional land requested by the city or city-related entity for open space or other uses will be purchased by the city only with the university's agreement at a market value cost as determined by third-party appraisal, mediated as needed.
- Restoration of any Open Space-Other land as designated under the BVCP owned by CU Boulder for ecological benefits desired by the city or related entity will be done in partnership with the university with costs borne by the city or related entity.
- If the university agrees, the city may, at its sole cost, realign Dry Creek Ditch #2.
- If the university agrees, the city may acquire or lease the university's water rights in Dry Creek Ditch #2.
- The city will not require site plan submission for annexation.
- CU Boulder South shall be deemed to be part of the Main Campus of the university and be subject to the Water and Wastewater Service Agreement of January 1997 between the parties.

University of Colorado Boulder Tentative Planning Process:

1. Fall-winter 2019 - Strategic Facilities Visioning initiative wraps up
2. Late 2019 - Campus Master Planning advertised
3. Late 2021 - Campus Master Plan completes and send for approvals
4. 2022 - Pending approvals from Board of Regents and CCHE
5. 2022 - 2023 CU South Master Plan*
6. 2024 - Potential building specific planning commences

* City will be engaged for comment at the appropriate time during this step.

We appreciate the opportunity to work with the city throughout this complex annexation process in a collaborative and transparent manner in an effort to provide extensive community benefit for all.

Kind Regards,

Frances Draper
Vice Chancellor for Strategic Relations and Communications
University of Colorado Boulder

Written Statement
CU Boulder South Annexation
Term Sheet for Annexation Agreement
February 4, 2019

SELECT DEFINITIONS:

"***Application***" shall mean the Land Use Review Application with Annexation / Initial Zoning Attachment submitted by CU Boulder on behalf of the Regents of the University of Colorado to annex the Property.
"***BVCP***" shall mean the Boulder Valley Comprehensive Plan 2015 Major Update Adopted 2017.
"***City***" shall mean the city of Boulder, a Colorado home rule city.
"***City Council***" shall mean the city council of the city of Boulder.
"***CU Boulder***" shall mean the University of Colorado Boulder.
"***Flood Mitigation Project***" or "Project" shall mean the City's South Boulder Creek Flood Mitigation Project.
"***Guiding Principles***" shall mean the CU South Guiding Principles set forth in the Boulder Valley Comprehensive Plan 2015 Major Update Adopted 2017. The Guiding Principles are attached hereto as Exhibit C.
"***Property***" shall mean the University's real property consisting of approximately 308 acres, commonly known as CU Boulder South, located at the intersection of Table Mesa Drive and South Loop Drive.
"***University***" shall mean The Regents of the University of Colorado, a body corporate.
"***Written Statement***" shall mean this document, which shall be attached to and submitted with the Application.

Other defined terms are identified throughout the remainder of the document.

A. APPLICATION DETAIL

1. Level of Detail Needed For Submittal (i.e. Site Plan)

   City Objective
   No direct guidance in BVCP.

   CU Boulder Response
   The Application includes all items specified as being required therein. Submission of a site plan is not a requirement for annexation and CU Boulder will not submit a site plan with the Application; however, CU Boulder participated in the development of the Guiding Principles, which set forth detailed agreements with respect to future development on the Property. The University is providing additional detail in this Written Statement.

2. Submittal and Other Administrative Notes

City Objective
N/A

CU Boulder Response
N/A

3. Initial Zoning

City Objective
Pursuant to B.R.C. §9-2-18 Zoning of Annexed Land, zoning of annexed land or land in the process of annexation shall be considered an initial zoning and shall be consistent with the goals and land use designations of the Boulder Valley Comprehensive Plan.

CU Boulder Response
The University recognizes that the City will be making future decisions regarding the specific boundaries of the City's Flood Mitigation Project. The City's decisions may require the reduction of the University-required minimum 129 acres designated under the BVCP Land Use Designation as Public/Semi-Public for future CU Boulder development on the Property. In addition, CU Boulder recognizes that the existing tennis courts may be adversely impacted by the final Project plan and the anticipated site of recreational fields in the area designated under the BVCP as "PK-UO" may need to be relocated. The City is in the planning phase of the Project and has therefore yet to determine the land area necessary for the Project.

Given the future decisions to be made, the University requests the City initially zone the entire property "Public" under the City's Land Use Code in order to provide the flexibility to accommodate changes to the land use boundaries (as established in the BVCP) that may be necessary as a result of changes to the Project plans. Upon finalization of the Project boundaries, the City may, at its discretion, rezone any area used outside of the aggregate 129 acres designated for University development and the 30 acres to be used for recreational fields (unless such fields can be reasonably accommodated within the Project area).

B. REVIEW PROCESS

1. Establish a review process for the City to review and comment on future development plans.

City Objective
No direct guidance in BVCP.

CU Response
CU Boulder will offer the City and the community the opportunity to provide input to the Campus Master Plan (as defined below).

In addition, in response to the feedback received from City Council and City staff, during the Conceptual Design phase (as defined below) prior to CU Boulder's submission of CU Boulder's conceptual design documents for development of the Property ("***Concept Design***") to the DRB (as defined below) for review and approval, CU Boulder will deliver the Concept Design to the City. The City will will have a period of 60 days following its receipt of the Concept Design to review and deliver comments to CU Boulder. Exhibit A (attached hereto) sets forth in greater detail the City's review process and conforms substantially to the Memorandum of Understanding agreement dated October 11, 2016 between the City and CU Boulder regarding CU Boulder's hotel and conference center. "***Conceptual Design***" shall mean a phase of design document development during which the DRB will evaluate the overall development of the Property. The Conceptual Design phase will focus on improvement and site development planning, architectural character, and relationships to surrounding buildings/spaces. For more information on what will be included in the Concept Design provided to the City, please see Exhibit A.

Background

- CU Boulder currently has no development plans for the Property
- CU Boulder creates an updated Campus Master Plan every 10 years
- In mid 2020, CU Boulder will begin the development of its next Campus Master Plan with anticipated completion in December 2021
- All development on CU Boulder's campuses, as well as each Campus Master Plan (as defined below), must be approved by the University of Colorado Design Review Board

Design Review Board

The University of Colorado Design Review Board (the "***DRB***") is comprised of uniquely experienced professional architects, landscape architects, and directly related design professionals, appointed by the President of the University. Its mission is to provide review and advice to parties charged with the design and development of proposed capital planning and development projects at all campus properties under the control of the University.

The DRB is the second-oldest established academic and higher education review board in the United States. The DRB guides the planning and design of all four campuses according to their respective master plans, planning and design guidelines, and the specific development program. All members of the DRB are appointed by the President of the University and are composed of uniquely experienced professional architects, landscape architects and planners. The DRB is charged with helping each campus maintain a commitment to design excellence.

The DRB examines all site development and exterior architectural components for projects on the University's campuses. The DRB is actively involved from the initial stages of pre-design through design development. This process includes review at the four phases of design: Pre-design, Conceptual Design, Schematic Design, and Design Development.

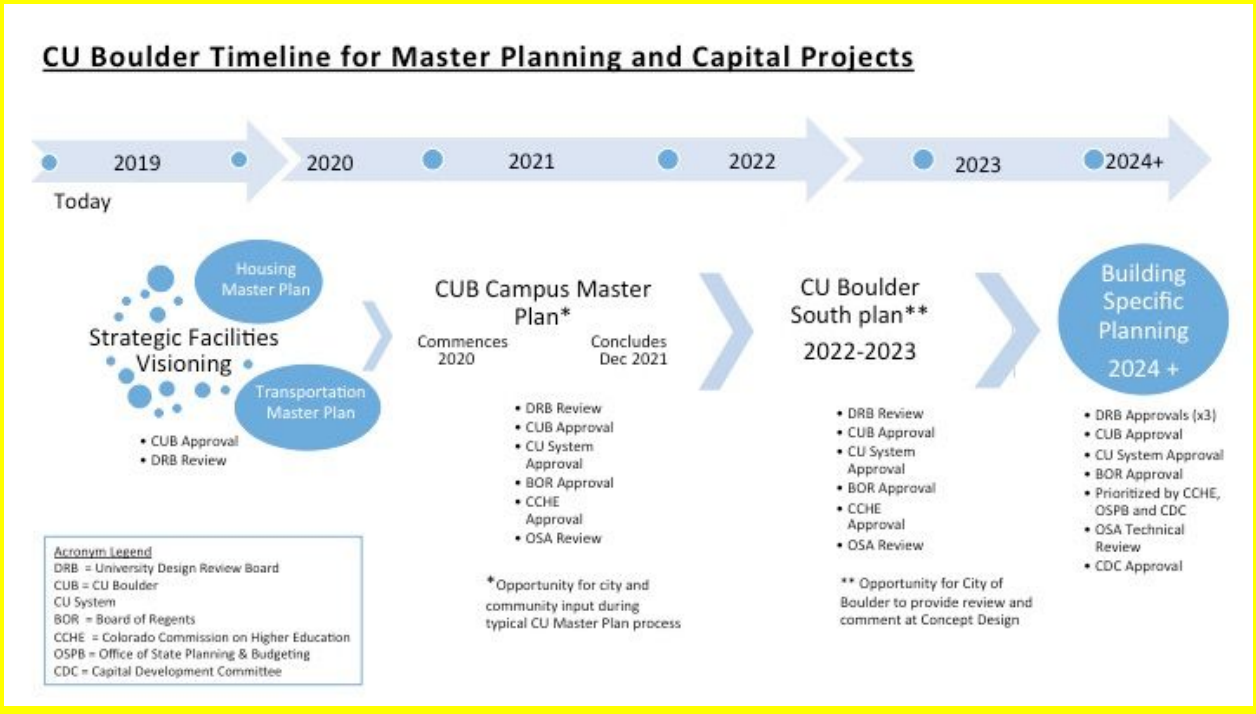
Campus Master Plan

The University has an established master planning process for all campuses. CU Boulder creates a campus master plan every 10 years. The Campus Master Plan sets forth the guiding principles by which facilities will be developed in support of the vision and mission established by these strategic objectives. The plan takes into account a number of changes impacting the campus, many of which are due to: the changes in the population of the state of Colorado; an expanding research endeavor; changing learning and information methods; increasing expectations of students, their parents, and the community at large; the globalization of industry and education; environmental awareness of the fragileness of our planet; and the financial realities of state funding for higher education.

The Campus Master Plan builds on the long tradition of master planning that occurs about once a decade. Each plan sets forth a vision of the future of the campus 20, 30, or even 50 years in the future and identifies actionable steps toward implementing that vision over the 10-year planning period. This plan follows that tradition, building upon the work of planners and visionaries from past plans, and sets new directions that will advance the institution toward the midpoint of the century. The next Campus Master Plan is anticipated to be complete by the end of 2021

CU Boulder South Planning

After completion of the Campus Master Plan, and prior to any development on the Property, CU Boulder will engage in a planning process for the CU Boulder South campus, as described above and below, and in the attached Exhibit A.



C. FLOOD MITIGATION

1. Implement the South Boulder Creek Phase I Flood Mitigation Study subject to final design

City Objective

The Guiding Principles state that the site will provide adequate areas for construction, maintenance and operation of City flood control dams, appurtenances and associated flood storage, including freeboard to reduce flood risks.

CU Boulder Response

Subject to Regent approval, and in consideration of City's annexation of CU Boulder South, the University will convey fee simple title in up to 80 acres of the Property (the "*Flood Property*") to the City by special warranty deed (the "*Deed*"). The City agrees to use the land conveyed by the University only for development, construction, operation, maintenance, and redevelopment of the Project; this use limitation shall be memorialized in a restrictive covenant in the Deed that will grant the University a reversionary right to the fee simple title in the Flood Property in the event an uncured breach of such restrictive covenant persists for a period of 365 days following University's delivery to City of written notice of breach. If the recreational fields are not able to be accommodated within the flood mitigation project footprint, the University will retain the right to an easement to allow sufficient access and use of recreational fields in an area that is mutually agreed upon.

If successful design and development of the Project requires the use of land in excess of 80 acres, then subject to University's reasonable approval and agreement, City may purchase additional land contiguous to the Flood Property at fair market value as determined by a third-party appraisal. This area shall be subject to the same reversionary right detailed in the preceding paragraph.

If City or a City-related entity wishes to acquire additional portions (for example in OS-O area) of the Property for open space or other uses, then subject to University's approval (determined in its sole discretion) and agreement, City may purchase such land at fair market value as determined by a third-party appraisal.

Any conveyance of University-owned land contemplated herein shall be subject to, and limited by, approval by its Board of Regents.

2. Obtain necessary easements.

City Objective
The Guiding Principles state that specific real property ownership, easements, and/or agreements will be established during annexation for the area necessary for floodwater improvements and other uses (plus or minus some land area).

CU Boulder Response
The University will provide the necessary rights for the City to achieve its Flood Mitigation Project upon finalization of the Flood Mitigation Project. Real property ownership is addressed above.

3. Avoid excavation within the OS-O area, maintain PUB acreage, and avoid impacts to existing tennis courts.

City Objective
On September 20, 2018, Council indicated a preference to avoid the area of proposed excavation shown on OS-O in Variant 1, 500-year, Option A.

CU Boulder Response
The University must retain in perpetuity its development rights to a minimum of 129 acres. The current land use designation of the University's 129 acres of developable area of the Property is “Public” under the BVCP (the "CU Development Tract").

Any diminishment of the area of the CU Development Tract shall (a) be subject to University's written approval and, at University's option, the diminished area shall be proportionally replaced with land currently designated OS-O under the BVCP (such replacement land shall be subject to University's approval, shall be contiguous with and become a part of the remaining CU Development Tract area, and shall be zoned Public (PUB) by the City). Alternatively, at University's option and approval, City shall

compensate University in cash for the fair market value of the applicable area or with land agreeable to the University in another location.

If successful design and development of the Project (a) requires relocation of CU Boulder's tennis facility, (b) materially and adversely affects CU Boulder's use and enjoyment of the tennis courts, or (c) impairs CU Boulder's ability to maintain the courts to NCAA Division I standards, then CU Boulder will have the option to reconstruct the tennis facility on land currently designated OS-O and contiguous to the remaining CU Development Tract area in a location determined by CU Boulder at its sole discretion. Such replacement land shall be subject to University's approval, shall be contiguous with and become a part of the remaining CU Development Tract area, and shall be zoned Public (PUB) by the City. City shall bear all actual costs of CU Boulder's design, development and construction of a comparable replacement tennis facility.

The City may demolish, at its sole cost and expense, the building currently located in the area of the Property designated as PK-UO under the BVCP. The City agrees to pay CU Boulder the replacement value of the building.

4. Groundwater monitoring

City Objective
Prior to a final agreement related to the flood mitigation land area, the City will conduct a groundwater assessment which verifies the feasibility and provides the basis for design and construction of implementing measures to convey groundwater through the dam in a manner that substantially replicates existing flow patterns.

CU Boulder Response
Agreed.

5. Aesthetic design of flood mitigation infrastructure

City Objective
The project team includes a landscape architecture firm that will help coordinate project landscaping and aesthetics that will be vetted with CU Boulder and made available to the public, boards and council.

CU Boulder Response
The City will include CU Boulder in the landscape and aesthetic planning of the Project. The Project design team shall collaborate with the University with respect to Recreational Field placement as well as the potential placement of bleachers on the slopes of the retention structure walls. University shall bear the sole cost and expense of design, development and construction of the Recreational Fields and the bleachers, as applicable.

6. Determine suitable recreational uses for the area within the flood mitigation detention area.

City Objective
Explore opportunities for passive and active recreation activities, or other uses compatible with the floodwater mitigation system and where possible, conserve and/or restore areas within the flood mitigation facilities with high ecological value and mitigate impacts.

CU Boulder Response
Upon completion of the construction of the flood mitigation dam and related retention areas, CU Boulder must have no less than 30 appropriately graded acres available for construction of recreational/athletics fields (the "***Rec Fields***") in the area of the Property designated as PK-UO under the BVCP. The Rec Fields must be situated on the Property in a manner that provides reasonable ingress and egress (including ADA accessibility) for site visitors, teams, service vehicles, as well as proximate space for related facilities such as concessions, restrooms, and storage. If the Rec Fields cannot be located in the flood detention area, the University may construct the Rec Fields on 30 appropriately graded acres within the OS-O-designated land, contiguous to the CU Development Tract.

7. Flood detention drainage design for recreational fields

CIty Objective
The City will ensure that the detention area will be designed to ensure the detention area is drained during the as State water rights drain time requirements. The system will also be designed to drain following a storm event without causing negative downstream floodplain impacts.

CU Boulder Response
The City will ensure drainage of the detention area is designed appropriately and will conduct routine maintenance and inspections (at the City's expense) to ensure no improper or excess flow discharge occurs during flooding events.

The City will ensure that the flood detention area used for recreational/athletics field development will be engineered to sufficiently drain within a reasonable period of time to ensure that the Rec Fields can remain functional after a flood. The City will ensure that Rec Fields do not have ongoing water ponding issues not related to a flood event.

8. Site Access (S. Loop Rd, Tantra)

City Objective
As part of standard practice, the City mitigates for any damage or modifications to existing structures, including access roads, that results from a flood mitigation project.

CU Boulder Response

The City will bear any and all costs of modification, realignment and/or reconstruction of existing access roads on the Property, if CU Boulder determines in its reasonable discretion that the design of the Project necessitates such changes.

The City shall also be responsible for any repair costs related to damages attributable to flood mitigation causes or caused by the City to any future CU Boulder road or improvements.

9. Future claims and damages

City Objective
As part of standard practices, and as required by the State Engineer's Office, the City takes responsibility for the performance and safety of its dams and flood mitigation structures.

CU Boulder Response
The City will bear the costs and responsibilities of any claims or damages resulting from the failure of the design, construction, performance and/or safety of the Project and related structures and appurtenances. City shall be responsible for its negligent acts and omissions.

10. Wetland and habitat mitigation for project direct impacts

City Objective
The project team will secure all necessary environmental permits and mitigate for the project's direct environmental impacts. At the concept design stage, the project team had anticipated restoring habitat on OS-O to fulfill any wetland and habitat mitigation requirements. The Guiding Principles state that in the area protected by the existing CU Boulder levee, floodplain functions, including wetlands and flood mitigation, may be restored as part of compensatory mitigation for impacts elsewhere on Property.

CU Boulder Response
If any jurisdictional wetlands are damaged or displaced as a result of the flood mitigation needs of the City, it is the responsibility of the City to secure any applicable wetland permits and mitigate the loss of the wetlands through Section 404 of the Clean Water Act.

D. LEVEE REMOVAL

1. Remove the existing levee system.

City Objective
Remove the existing levee system and restore underlying land to improve riparian connectivity between CU Boulder South OS-O area and South Boulder Creek. The existing CU Boulder levee does not affect the overall hydrology for the flood mitigation project

but armoring of specific land areas inside of the existing CU Boulder levee may be required to avoid scour and erosion during a storm event.

CU Boulder Response
CU Boulder remains open to the removal of the berm/levee by the City per our letter of October 1, 2018 to City Council.

If the levee is removed, the following are required: 1) the City will ensure, at its sole cost and expense, that construction and/or operation of the Project and related structures and appurtenances and/or removal of the berm/levee shall not increase the FEMA 100-year or 500-year floodplain, as may be established from time to time, and will not extend or increase any wetland area on any of the Property, now or in the future; 2) CU Boulder will be provided the first option to use or sell the berm/levee material if the berm/levee is removed; and 3) the City will be responsible for securing all federal, state, and other governmental approvals to remove the berm/levee.

2. Determine use of levee fill material

City Objective
Early project cost estimates assumed use of levee fill removal for the project.

CU Boulder Response
If the levee/berm is removed, CU Boulder, as the owner of the fill, retains the right to the material, and will either use or sell the material.

3. Determine responsible party for securing approvals.

City Objective
The City will be responsible for all federal, state and other governmental approvals for the flood mitigation project.

CU Boulder Response
The City will be responsible for securing all federal, state, and other governmental approvals to remove the berm/levee. The City is also responsible for all associated costs and fees.

4. Impacts to floodplain on CU Boulder South

City Objective
The flood mitigation project will detain water on CU Boulder South, which will affect the floodplain in the area of detention and also following removal of the existing CU Boulder levee (in PK-U/O and OS-O land use areas). The detention area will be defined with a flood mitigation easement with CU Boulder. The 100-year and 500-year floodplain would not increase in the PUB land use area.

CU Boulder Boulder Response
The University intends to convey the area used for flood mitigation purposes to the City. The City must ensure, at its sole expense, that construction and/or operation of the flood mitigation dam and related structures and removal of the berm/levee shall not increase the FEMA 100-year or 500-year floodplain areas on any of the Property, now or in the future.

5. Future claims or damages

City Objective
As part of standard practices, and as required by the State Engineer's Office, the City takes responsibility for the performance and safety of its construction projects

CU Boulder Boulder Response
The City will bear the costs and responsibilities of any claims or damages resulting from the failure of the design, construction, performance and/or safety of the Project and related structures and appurtenances. City shall be responsible for their negligent acts and omissions.

E. OPEN SPACE

1. Open Space Conveyance Area east and outside of the existing levee

City Objective
On Sept. 20 Council stated a preference for implementing the July 11 OSBT Recommendation: Convey 44 acres east and south of the existing CU Boulder levee to OSMP, with subsequent management and any restoration to be funded by OSMP.

CU Boulder Response
If City or a City-related entity wishes to acquire additional portions (for example in OS-O area) of the Property for open space or other uses, then subject to University's approval (determined in its sole discretion) and agreement, City may purchase such land at fair market value as determined by a third-party appraisal. Any conveyance of University-owned land contemplated herein shall be subject to approval by The Regents of the University of Colorado.

2. Open Space Conveyance Area protected by Levee, within OS-O area

City Objective
On Sept. 20 Council stated a preference for implementing the July 11 OSBT Recommendation: Convey 40 acres west and north of the existing CU Boulder levee to OSMP and restore approximately 17.4 acres as part of the flood mitigation project. Support through annexation conveyance and/or permanent protection of the remaining OS-O area inside the levee (appx. 35 acres) for long-term protection and possible

restoration.

CU Boulder Response
If City or a City-related entity wishes to acquire additional portions (for example in OS-O area) of the Property for open space or other uses, then subject to University's approval (determined in its sole discretion) and agreement, City may purchase such land at fair market value as determined by a third-party appraisal. Any conveyance of University-owned land contemplated herein shall be subject to approval by The Regents of the University of Colorado.

3. Restoration and other uses/activities allowed in OS-O

City Objective
Guiding Principles state that the City will…collaborate with CU Boulder to protect and improve the delivery of open space, restore high ecological value areas and/or provide areas for recreation in lower ecological value areas. The City and CU Boulder will work together to achieve greater open space acreage as part of either larger City open space conservation areas or limited-structural build, such as community gardens, recreation, solar gardens, etc.

However, OSBT recommended that all of OS-O be conveyed to OSMP or permanently protected as Open Space, which would not allow for community gardens, recreational ball fields, solar gardens, etc.

CU Boulder Response
CU Boulder remains committed to the BVCP Guiding Principles, as stated. The City and CU Boulder will work together to achieve greater open space acreage as part of either larger City open space conservation areas or limited-structural builds, such as community gardens, recreation, solar gardens, etc.

Restoration of any portion of the Property designated OS-O under the BVCP for ecological benefits desired by the City or related entity will be done in partnership with CU Boulder with costs borne by the City or related entity. If City or a City-related entity wishes to acquire additional portions (for example in OS-O area) of the Property for open space or other uses, then subject to University's approval (determined in its sole discretion) and agreement, City may purchase such land at fair market value as determined by a third-party appraisal. Any conveyance of University-owned land contemplated herein shall be subject to approval by The Board of Regents of the University of Colorado.

4. Realign Dry Creek Ditch #2 and Secure Water Rights

City Objective
On Sept. 20 Council stated a preference for implementing the July 11 OSBT Recommendation: Realign ditch to west of open space conveyance and restoration area,

to extent practical and acceptable to the ditch board and CU Boulder and acquire sufficient water rights to support City's restoration goals.

CU Boulder Response
Any realignment of Dry Creek Ditch No. 2 is to be designed in a manner that does not increase the existing 100-year or 500-year floodplain, as may be determined from time to time, and will not increase the presence of wetlands on the CU Boulder Development Tract. CU Boulder will be fairly compensated by the City for any land area that ceases to be developable due to building setbacks from the Dry Creek Ditch No. 2.

If the University agrees, the City may, at its sole cost, realign Dry Creek Ditch No. 2.

If the University agrees, the City may acquire or lease the University's water rights in Dry Creek Ditch No. 2.

F. TRANSPORTATION IMPACTS

1. Performance-based transportation

City Objective
Guiding Principles state that the transportation needs generated by future development at the site will not unduly impact the transportation networks that serve the property. Impacts to local and regional networks will be mitigated through implementation of performance-based standards. The City and CU Boulder will complete additional planning and transportation analysis to further develop performance-based standards, including but not limited to maximum amount of parking, trip budgets, transit use, pedestrian and trail connections and access to transit passes. Planning considerations will be addressed collaboratively by the City and CU Boulder and will include innovative and long-range technologies, including electric vehicles, autonomous vehicles, etc. as well as possible joint options with City-funded transit.

CU Boulder Response
CU Boulder remains committed to the Guiding Principles and will work with the City to identify a performance-based transportation plan at the time that a Concept Design is presented to the City by CU Boulder.

2. Multi-modal hub

City Objective
Guiding Principles state that implement a multimodal mobility hub and transit connections between the CU Boulder South property and other Boulder campus locations to manage employee and resident access and mobility.

CU Boulder Response

As agreed to in the Guiding Principles, CU Boulder will create a multi-modal hub for transportation when a requisite number of employees and residents are occupying and accessing the Property at a level that justifies the creation of such multi-modal hub.

On other areas of the Boulder campus, CU Boulder typically includes Vehicular Area Guidelines in the Design Guidelines. Examples of these include:

- Enhance existing streets throughout for safer multi-modal movement and improved appearance utilizing surfacing, lighting, signage, bicycle parking, and site accessories.
- Recognize that campus policy is to give pedestrians and bicycles priority over service and private vehicles in multi-modal areas.
- Provide facilities and amenities to encourage alternative means of travel to and from campus, such as information kiosks, bus shelters, maps, and visitor directions.

3. Connected multi-modal system

City Objective

Guiding Principles state that incorporate connected and safe pedestrian, bike and transit systems through CU Boulder South integrated into the broader City and regional bicycle and pedestrian network, including safe street crossings, trailhead(s), soft surface recreation trails and a trail link(s) to the South Boulder Creek Trail in coordination with OSMP. When creating and maintaining recreational opportunities, such as trail connections through the property, do so with consideration for likely and potential impacts to adjacent open space, and for mitigation of those impacts, as appropriate.

CU Boulder Response

On other areas of the Boulder campus, CU Boulder typically includes Vehicular Area Guidelines in the Design Guidelines. Examples of these include:

- Place generously-sized bicycle parking areas along multimodal streets and near campus activity centers and student residence halls and courts.
- Orient bus shelters to allow sufficient views of arriving buses and to provide shelter from prevailing winter winds and snow. Include seating, trash receptacles, bus schedules, and brightly lit interiors. Use vandal-resistant materials including break-resistant glazing and coated black steel structures and roofs.
- Establish drop-off zones near major activity centers for convenient use. Provide seating for waiting, attractive landscaping, emergency telephones, and adequate lighting.
- Provide landscaping in and around parking lots to soften hardscape appearances from streets, break up extended rows of cars, and provide shade.
- Ensure adequate lighting for safe use and clear pathways from parking lots to adjacent building entrances. Design sufficient setbacks between parking lots and streets, which could include raised landscaping, berms, and/or walls to block views into the lot.

- Include loading and service vehicle parking spaces adjacent to major buildings. Screen or buffer views to service areas where possible with a combination of screen walls, opaque enclosures, gates, and landscaping. Limit service parking to designated spaces only.
- Provide raised curbs selectively along campus walkways to discourage all modes of transportation from crossing or parking on lawns or adjacent landscaping.

4. Protect neighborhoods from Transportation Impacts

City Objective
Guiding Principles state that the street design will minimize impacts into nearby residential neighborhoods, such as Tantra Park, Basemar, Martin Acres and High View.

CU Boulder Response
As agreed to in the Guiding Principles, CU Boulder will minimize impacts into nearby residential neighborhoods. CU Boulder shall be given access to City streets and roadways at such points as are reasonably necessary to develop the Property and consistent with applicable provisions of the state highway access code and City's site access standards. The City will be given the opportunity to provide input during the Concept Design for CU Boulder South.

5. No Bypass

City Objective
Guiding Principles state that discourage any outside traffic from cutting through the property to avoid impacts to the Table Mesa Drive/Broadway connection.

CU Boulder Response
CU Boulder has committed to not creating a "bypass" roadway between SH 93 and US 36. CU Boulder will evaluate options for managing and restricting future traffic through traffic calming, speed reduction, and other design measures to ensure that a bypass roadway is not created between SH 93 and US 36.

G. BUILDING MASS, HEIGHT, AND VIEWS

1. Viewsheds

City Objective
Guiding Principles state that:
- *Buildings will be designed and sited in a manner to protect views and contribute positively to the character of the City's "gateway".*
- *Building location, massing and height will protect and complement views of the mountain backdrop, particularly the viewsheds from the US Highway 36 bike path, the South Boulder Creek Trail, US Highway 36 and State Highway 93.*

CU Boulder Response
CU Boulder has high standards for future development across all of its campus, and shares the same values as the City regarding gateway character and preservation of the mountain backdrop. CU Boulder agrees, and notes that CU Boulder's PK-U/O and OS-O designated land is located closest to the US 36, the primary access point to the City. These areas will act as the "gateway" to the City by contributing towards the City of Boulder's BVCP Community Identity and Land Use Pattern Policy 2.05 Design of Community Edges and Entryways.

Preliminary viewshed analysis of the mountain backdrop demonstrate that buildings up to 110' will not impede views of the mountain backdrop, and we are restricting buildings to 55' through the Guiding Principles.

On other areas of the Boulder campus, CU Boulder includes Landscaping Guidelines that address the relationship between the campus and the natural foothills landscape, campus land contours, drainage, and plantings in relation to buildings.

- Identify and preserve view corridors, especially to the mountain backdrop.
- The 2007 Design Guidelines include Community Interface Guidelines, which address campus corners, edges, entrances, and connections between other CU Boulder campuses and the City.
- Create large-scale landscape designs at campus corners including mass plantings and clear durable functional identification signage. Consult the campus signage standards for all signage designs.
- Provide campus edge landscaping, signage, site accessories, and material selections to create a break between adjacent uses while maintaining a sense of continuity, softening views of perimeter parking lots, and improving safety for all modes of movement along the campus interconnections with the community.
- Enhance transitions to and from the campus through appropriate lighting levels, simple and functional signage, appropriately scaled plant material, and elimination of clutter.
- Link CU Boulder properties through functional circulation systems, similar landscaping and accessories, and directional signage.

2. <u>Building Height</u>

City Objective
Guiding Principles state that building heights will maintain general consistency with the City's height limits, with buildings varying in height and visual interest. Building heights will transition gently from the open space and to neighborhoods to the west.

CU Boulder Response
CU Boulder has agreed to "maintain general consistency with the City's height limits" which means that CU Boulder will abide by a height limit of 55 feet for the construction of buildings on CU Boulder South, with building height being measured as the vertical

distance from the average of the finished ground level to the average height of a finished roof.

Natural grades and contours of the Property will allow for gentle transitions from open space and to neighborhoods to the west.

3. Wetlands

City Objective
Guiding Principles state that wetlands will be maintained, preserved, protected, restored and enhanced in a manner consistent with the City's Land Use Code.

CU Boulder Response
Agreed

4. Steep Slopes

City Objective
Guiding Principles state that development on slopes at or exceeding 15 percent will be minimized in a manner consistent with the City's Land Use Code.

CU Boulder Response
Agreed

H. SITE DESIGN & QUALITY

1. Clustered, Village Design

City Objective
Guiding Principles state that:
- *Residential development will be of high quality and contextually appropriate to neighboring properties*
- *Development on the site will be compact and clustered in a village style. Any non-residential buildings will be human scaled.*

CU Boulder Response
Agreed

2. Structures within the 500-year floodplain

City Objective
Guiding Principles state that all enclosed academic structures, offices, or residential uses will be constructed outside of the FEMA 500-year floodplain.

CU Boulder Response

As agreed to in the Guiding Principles, no habitable structures or academic buildings will be built on the Property within the FEMA 500-year floodplain.

Notwithstanding the foregoing, If additional land is required for the flood mitigation project outside of the PK-UO designated portion of the Property or if the City Council selects a flood mitigation project that would change the boundaries of the 500-year flood plain, or if the City proposes any other boundary changes, and University agrees to such adjustment, the City shall change the BVCP to allow development in the 500-year flood plain.

3. Building Standards

City Objective
Guiding Principles state that it will model future resilience and sustainability for design, construction, and maintenance strategies. Development will meet the equivalent of the U.S. Green Building Council's Gold or Platinum LEED standards or other applicable sustainability standards for residential development.

CU Boulder Response
CU Boulder's development will model future resiliency and sustainability for design, construction and maintenance strategies. CU Boulder is required by the state to build to USGBC LEED Gold or equivalent.

4. Public access to Property

City Objective
Guiding Principles state that access will continue to be allowed on the site consistent with public access provided on other CU Boulder campuses.

CU Boulder Response
Agreed.

I. LAND USE MIX

The campus master planning process is a multi-year process due to the complexity of the campus and future planning for the many related departments, colleges, institutes and operational units. The residential to non-residential relationship, as well as specific non-residential and academic facility uses, will be determined by CU Boulder in later planning efforts. Land use mix will comply with the Guiding Principles.

1. Prohibited Uses

City Objective
Guiding Principles state that the site will not include large-scale sports venues (i.e., football stadium), high rise buildings (maintaining substantial consistency with the City's

height limits), large research complexes (such as those on East Campus), any roadway bypass between Highway 93 and Highway 36, or first-year student housing.

CU Boulder Response
Agreed

2. Housing the Predominant Use

City Objective
Guiding Principles state that housing will be the predominant use of the site for areas not used for flood mitigation (i.e., with a target of 1,100 residential units and the final number guided by transportation performance and other site constraints), although the site may include a mix of residential and non-residential and facilities. The site will emphasize housing units over non-residential space (jobs) to help balance jobs and housing in the community.

CU Boulder Response
CU Boulder will prioritize building housing for faculty, staff, graduate students and non-first year students on the Property to facilitate the goal shared by CU Boulder and the City to provide more housing on University property. CU Boulder is committed to not building first year student housing on the Property and no fraternities or sororities will be located on this Property. CU Boulder cannot commit to a specific development plan at this time as no development plans currently exist.

3. Housing for University needs

City Objective
Guiding Principles state that housing on the site will meet the needs of University faculty, staff and non-freshmen students in order to address the fact that Boulder housing is currently unaffordable to faculty, staff and students. Providing workforce and non-freshmen housing will contribute positively to the community's housing affordability goals and aid the University in its recruitment and retention. Housing should be mutually beneficial to the community and University and integrated with needs of the community rather than built as isolated enclaves.

CU Boulder Response
Agreed. If CU Boulder builds the anticipated 1,100 units on the Property, this would increase the City's total housing stock by over 2.4%, providing housing for CU Boulder staff, faculty and students, thereby relieving pressures on existing local housing stock and transportation arteries into the City.

4. Non-residential Uses

City Objective
Guiding Principles state that:

- *The overall non-residential space footprint will be minimized and support and benefit the convenience of the residents, employees and visitors to residential and recreational uses of the property.*
- *The exact amount, types and location of residential and non-residential space will be refined to minimize impacts as a long-term master plan is developed and as transportation analysis is conducted.*
- *Academic facilities will include space for research and/or education pertaining to natural environment, such as ecological restoration, floodplains and related topics.*

CU Boulder Response
Agreed

5. Phasing of Non-residential Development

City Objective
Guiding Principles state that except for recreation facilities, development will be phased such that non-residential space will be phased after a significant amount of housing is built. Later phases will be dependent on demonstrating that initial phases achieve objectives of mitigating [transportation] impacts.

CU Boulder Response
Agreed

J. PUBLIC SAFETY/ EMERGENCY CONNECTIVITY

1. Emergency Connectivity

City Objective
Guiding Principles state that limited ingress and egress via local connections may be provided for emergency, life safety situations. Develop an Emergency Service and Evacuation Plan to address emergencies and use of emergency access and connections.

CU Boulder Response
CU will provide limited ingress and egress connections for specific individuals/organizations/providers/units who are certified to provide services in emergency and life safety situations. Planning of these connections and identification of relevant parties will be determined later during property planning efforts.

The City can anticipate emergency connectivity to be similar to those of other CU Boulder properties within the city limits.

K. Land Use designation Changes

1. Land use change process

City Objective
Guiding Principles state that the Land Use Map may be amended to enable the City and CU Boulder to implement a shared vision for the site. The standard process detailed in the BVCP will guide any future land use designation changes.

CU Boulder Response
Agreed, consistent with CU Boulder Response under *Flood Mitigation: Section 3(C*).

L. Urban Services & Utilities

CU Boulder General Response
In consideration for the benefits provided by the University to the City under this annexation agreement, the City agrees to extend all City services; power, water, and wastewater.

1. Water and Wastewater Service Agreement

City Objective
Guiding Principles state that future agreements between the City and University will be contingent on the ability of the City to provide adequate urban facilities and services and the University's contribution to cover the cost of the necessary services and utilities on site and to address off-site impacts to systems.

CU Boulder Response
Consistent with CU Boulder's Main Campus, CU Boulder South shall be subject to the Water and Wastewater Service Agreement of January 1997 between the parties.

2. Stormwater requirements

City Objective
Guiding Principles state that stormwater impacts of new development will be mitigated based on established criteria for minor and major storm events and applicable stormwater quality requirements. Preservation or restoration of existing undeveloped areas will be considered to attenuate peak runoff from the site and to mitigate stormwater quality impacts.

CU Boulder Response
CU Boulder will adhere to State stormwater regulations/requirements.

List of Attachments:

1. Exhibit A - Annexation, Certain Provisions Related to Future Construction
2. Exhibit B - BVCP Policy Analysis of CU Boulder South Annexation
3. Exhibit C - BVCP Guiding Principles
4. Attachment: University of Colorado at Boulder Main Campus Design Guidelines

5. Attachment: University of Colorado at Boulder Research Park Design Guidelines
6. Attachment: University of Colorado Design Review Board Processes and Procedures, August 5, 2015

Exhibit A

Annexation

Certain Provisions Related to Future Construction.

Section I: Concept Design Review:

(A) CU Boulder South planning: Input and Comment. CU Boulder will provide the City with the opportunity to review and provide comments related to concept design for CU Boulder South.

(B) Submittal of Concept Design. At the end of the Conceptual Design phase of development of plans for the Property, and prior to the DRB review of the CU Boulder South Master Plan, the University will submit to the City's Planning Director the Concept Design. The intent of the Concept Design phase is to apply the goals, objectives, priorities and observations of the project site characteristics and the program summary for the Project. Submittal requirements for conceptual building and site development review include:

1. A Brief narrative statement of the project's intent, anticipated schedule, and general programmatic requirements, including the projected number of students, faculty, staff and visitors.
2. A "Micro-Master Plan" (MMP) and/or urban design study of the project in the context of the existing campus. The MMP shall include:
    a. A general plan of the existing and a plan of the existing site and context showing topographical data, roads, easements and significant features, including existing trees three (3) inches in caliper and larger.
    b. A site analysis diagram, including critical environmental influences, surrounding conditions, and known plans, including the extent of all principle open spaces that are part of the site context and future building sites identified in the campus master plan.
    c. A conceptual description of energy and sustainable design goals including:
        i. LEED certification & certification level;
        ii. Btu/ft2 goal based on available benchmarks for similar projects, campus utility data or campus desired energy cost (Cost of ownership);
        iii. Water conservation target with consideration for indoor and outdoor water consumption;
        iv. Environmental impacts/considerations and how they are managed by the project
        v. Building orientation analysis.
        vi. Conceptual planning studies and preliminary site MMP development (at a scale not smaller than 1" = 50') indicating:
        vii. Access (student, staff, service,other)

1. Truck loading and service vehicle;
2. Emergency vehicle and fire department as applicable;

viii. Adjacent buildings, and potential future building pods;
ix. Building location and critical dimensions (including setbacks) and potential expansion zones or build-out phasing scenarios;
x. Drives, parking locations and pedestrian and bike circulation;
xi. Building ground floor plan showing approximate finished floor elevations;
xii. Site topography;
xiii. Amount and location of employee and visitor parking;
xiv. Massing model, including the site context and topography. A digital three- dimensional architectural model (*SketchUp* or similar format) may be acceptable as determined by the campus liaison and DRB;
xv. General building and site materials being considered indicating general architectural character;
xvi. Principle site section(s) showing existing developed condition if applicable; and
xvii. Landscape concept with existing significant vegetation and site features.

(C) City Comments. Any City comments shall be provided through the City Planning Director to the Boulder Campus Architect or designee. As long as the comments of the City are provided within 60 days of delivery of a Concept Design document to the City Planning Director, the University shall take the City's recommendations into consideration before submitting to the DRB for approval.

(D) Public Information and Comment. The City will facilitate a process to share information about the project with City Council, Planning Board and the public, and collect review comments to share with the University in a manner and schedule consistent with the other provisions of this annexation agreement. The University will consider the input in its refinement of building and site plans but is not required to abide by or formally respond to input received.

Section II: Development and Construction:

(A) Compliance with State Codes. All development of improvements on CU Boulder South, whether by the University or non-university developers, shall comply with the building codes and/or regulations, or comparable codes and/or regulations, as then adopted by the State of Colorado and revised periodically.

(B) Compliance with Other Laws of the City. This Exhibit contains all of the obligations of the University and of all non-university developers in connection with University development on CU Boulder South. Except as expressly otherwise set forth in this Exhibit, the City's ordinances, codes, or regulations applicable to the development of land, or the construction, ownership, or management of improvements thereon, whether by the University or by a non-university developer, shall not apply to development on CU Boulder South, as consistent with other campus development on University lands. However, all water, sewer and stormwater utility facilities to be dedicated to the City shall be built to comply with the City's design and construction standards.

(C) City Permits, Fees and Taxes for On-site Improvements. The City agrees that neither the University nor non-university developers of the CU Boulder South property shall be required to obtain City building permits, or any other City permits, prior to commencement of construction, or during construction, or at the completion thereof, for all on-site improvements. Except as expressly set forth in sections 1(d), 1(e) and 2(b) below, neither a non-university developer nor the University shall be obligated to pay the City, and the City agrees not to charge a non-university developer or the University, any application fees, review fees, building permit fees, or other fees or charges for related to development and construction on CU Boulder South, including payments in lieu of providing affordable housing units, in lieu of payments or dedications for open space or park land, the capital facility impact fee, transportation, or housing excise taxes or similar charges. The University is exempt from the City's sales and use taxes. If a party other than the University constructs a building or buildings within the site, amounts which are equivalent to the City's applicable sales and use taxes, as set forth in the City's municipal code, shall be payable by that party.

(D) Permits, Fees and Taxes for Off-site Improvements. Except as hereinafter specified, the University or its designated non-university developer agrees to pay all applicable utility fees including, without limitation, plant investment fees for water, sewer and storm utilities, to the City as a condition of connections to the City's utility lines. For purposes of applicable utility fees, CU Boulder South shall be deemed to be part of the Main Campus of the University. Any existing and applicable agreements, understandings, or letters that extend credits to the University for water and sewer services to the main campus shall be honored with respect to corresponding charges at CU Boulder South. All non-university developers constructing buildings within the Project under a ground lease or through some other form of property conveyance with the University shall pay all such fees to the City directly. Work in the public right of way is separately permitted by the City and is not governed by this Exhibit; but

the City shall use normal and customary standards it applies to other parties in granting or denying such permits. Except as otherwise provided herein, the CU Boulder South project shall comply with all of the provisions of the City's water, sewer and stormwater plans, regulations and ordinances.

(E) Off-site Water, Sewer, and Stormwater Facilities. The City and the University will cooperate in considering CU Boulder South to be an extension of the Main Campus for purposes of extending the University's private utilities. The City shall assist and cooperate with the University in planning and conducting technical feasibility of any water, sewer, and stormwater utility facilities required for future University development on the site. All off-site facilities relating directly to CU Boulder South shall be evaluated and reviewed as a cooperative effort between the University and the City. Costs associated with utility upsizing, necessary off-site infrastructure, or other investment required to serve University's development will be undertaken in a manner consistent with existing City practices for similar development projects.

(F) Inspections of Construction. All inspections of construction on CU Boulder South shall be conducted by a qualified inspector (who may be a University employee) authorized by the University to conduct such inspections. The University, at its discretion, may request inspections by the City. The City may charge for its services providing such inspections. Inspections for off-site improvements will be undertaken in a manner consistent with existing City practices.

(G) "As Built" Plans. Upon completion of any improvements on CU Boulder South, the University agrees to furnish to the City "as built" plans. The University also agrees to furnish the City the specifications for all buildings and parking facilities constructed on the site.

Section 3: Points of Access and Utility Services.

(A) Access to Public Streets. The University shall be given access to City streets and roadways at such points as are reasonably necessary to develop CU Boulder South and consistent with applicable provisions of the state highway access code and the City's site access standards.

(B) Utility Services. Upon request by the University and payment of all customary City fees and charges therefore, the City agrees to furnish to the CU Boulder South property water, sanitary sewer, storm water and such other utility services as the City now or hereafter

customarily provides within City limits on the same or similar terms and conditions; provided, however, the University shall not be required to convey to the City any water and/or ditch rights associated with the Property or pay any fees for the purchase of raw water from any other source as a condition to obtaining water services from the City.

Exhibit B

BVCP Policy Analysis of CU Boulder South Annexation

Chapter 3 of the Boulder Valley Comp Plan 1.16 Annexation Policies

Policy A: Annexation will be required before adequate facilities and services are furnished.

Response: Acknowledged. Adequate facilities and services are not being requested prior to annexation.

Policy B: The city will actively pursue annexation of county enclaves, Area II properties along the western boundary, and other fully developed Area II properties. County enclave means an unincorporated area of land entirely contained within the outer boundary of the city. Terms of annexation will be based on the amount of development potential as described in (c), (d), and (e) of this policy. Applications made to the county for development of enclaves and Area II lands in lieu of annexation shall be referred to the city for review and comment. The county shall attach great weight to the city's response and may require that the landowner conform to one or more of the city's development standards so that any future annexation into the city will be consistent and compatible with the city's requirements.

Response: The entire area to be annexed is designated Area II, is below the Blue Line and is located along the meets the boundary contiguity criteria required for annexation.

Policy C: Annexation of existing substantially developed areas will be offered in a manner and on terms and conditions which respect existing lifestyles and densities, and the city will expect these areas to be brought to city standards only where necessary to protect the health and safety of the residents of the subject area or of the city. The city, in developing annexation plans of reasonable cost, may phase new facilities and services. The County, which now has jurisdiction over these areas, shall be a supportive partner with the city in annexation efforts to the extent the county supports the terms and conditions being proposed.

Response: The area is currently not developed. The existing facilities within the entire area include twelve tennis courts and a one storage wearhouse. Minimal existing infrastructure exists other than a few community trails, a levee, and fire access dirt roads.

Policy D: In order to reduce the negative impacts of new development in the Boulder Valley, the city shall annex Area II land with significant development or redevelopment potential

only on a very limited basis. Such annexations will be supported only if the annexation provides a special opportunity or benefit to the city.

For annexation considerations, emphasis shall be given to the benefits achieved from the creation of permanently affordable housing. Provision of the following may also be considered a special opportunity or benefit: receiving sites for transferable development rights (TDRs), reduction of future employment projections, land and/or facilities for public purposes over and above that required by the city's land use regulations, environmental preservation, or other amenities determined by the city to be a special opportunity or benefit. Parcels that are proposed for annexation that are already developed and which are seeking no greater density or building size would not be required to assume and provide that same level of community benefit as vacant parcels unless and until such time as an application for greater development were submitted.

Response: The 308 acres seeking annexation presents significant and special community benefit to the city, specifically in the form of land on which the City can construct its South Boulder Creek Flood Mitigation Project, which provides a significant health, safety and welfare benefit to the city and residents of Boulder. Approximately 80 acres of the university's land will be conveyed to the city for its flood prevention/mitigation measures.

Policy E: Annexation of substantially developed properties that allows for some additional residential units or commercial square footage will be required to demonstrate community benefit commensurate with their impacts. Further, annexations that resolve an issue of public health without creating additional development impacts should be encouraged.

Response: The property is not developed at this time; however, the annexation does provide the city the opportunity to resolve significant public health and safety concerns of thousands of city residents.

Policy F: There will be no annexation of areas outside the boundaries of the Boulder Valley Planning Area, with the possible exception of annexation of acquired open space.

Response: The area is located within the Boulder Valley Planning Area.

Policy G: Area II is anticipated to become part of the city within the planning period. Area III is not anticipated to become part of the city within the planning period. However, publicly owned property located in Area III and intended to remain in Area III may be annexed to the city if the property requires less than a full range of urban services or requires inclusion under city jurisdiction for health, welfare and safety reasons.

Response: The area is located within Area II.

Policy H: The Gunbarrel-Heatherwood subcommunity, which is unique because of its size, developed at an urban density with city water and sewer service. The commercial and industrial portion of Gunbarrel-Heatherwood is annexed to the city, while much of the residential development is still unincorporated. The Gunbarrel-Heatherwood Subcommunity is also unique because of the shared jurisdiction for planning and service provision among the county, the city, the Gunbarrel General Improvement District and other special districts. Those areas annexed to the city are provided with city services, although deficiencies exist in developed park facilities and services. In the unincorporated area, a variety of arrangements for service provision exist. Some services, such as road maintenance, flood control, and law enforcement, are primarily provided by the county. Area residents now tax themselves through the Gunbarrel General Improvement District to pay for open space acquisitions and possible park and major roadway improvements. Fire protection is provided to the unincorporated area by Boulder Rural Fire District. Although interest in voluntary annexation has been limited, the city and county continue to support the eventual annexation of Gunbarrel-Heatherwood. If resident interest in annexation does occur in the future, the city and county will negotiate new terms of annexation with the residents.

Response: The area is not located within the Gunbarrel-Heatherwood subcommunity area.

Exhibit C

BVCP Guiding Principles

Boulder Valley Comprehensive Plan (BVCP)
University of Colorado Boulder, South Campus - Guiding Principles
Approved by the City of Boulder and Boulder County as of July 2017

The guiding principles are intended to guide an intergovernmental agreement or multiple agreements between the City of Boulder and University of Colorado that will specify future uses, services, utilities, and planning of the University of Colorado (CU) Boulder South Campus ("CU South") property.

Introduction

CU South is a 308-acre property located in south Boulder at the city's south entry of US 36. Its eastern and southern boundaries adjoin city owned Open Space including the floodplain and riparian habitat of South Boulder Creek; its western boundaries adjoin City of Boulder residential subdivisions. The CU South property provides physical and visual linkages between the city residential neighborhoods and park lands and acquired Open Space helping to define the city's urban edge.

General Principles

1. **Flood mitigation.** Protecting City of Boulder and Boulder County residents from future flooding events is a primary driver.
2. **Collaboration.** Further collaboration and joint planning between the city, CU, county and the community will continue to be emphasized.
3. **Public Participation.** The city will work with CU to include the community and public effectively throughout the planning, annexation and development process.
4. **Access.** Access will continue to be allowed on the site consistent with public access provided on other CU campuses.
5. **Agreement topics.** These guiding principles will guide next steps toward an annexation agreement between the city and university and (over the longer term) a master plan for CU South. The topics addressed (i.e., transportation, city utilities, infrastructure planning, site development standards, massing and total amount of development, and protection of open space values, floodplain, wetland and other environmental topics) should lead to more specific standards and metrics and identifies community benefits as part of annexation agreements.

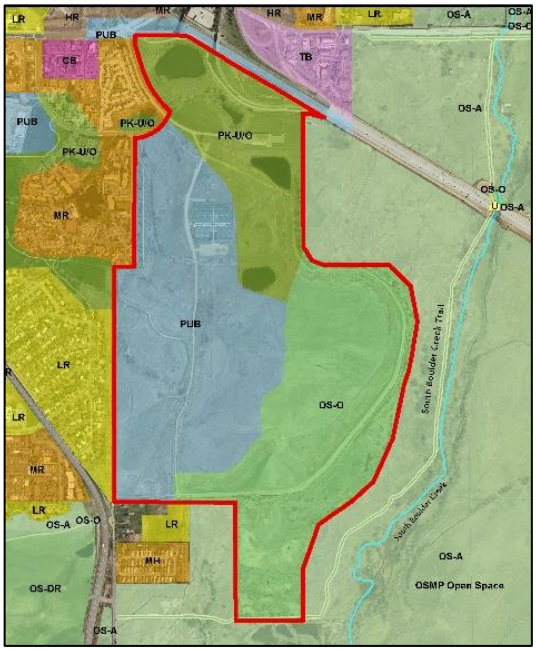


Figure 1: Existing Land use designations

6. **Other options.** These principles are not intended to prevent the city and CU from exploring other options or geographic areas for CU to achieve its housing, program, and facility goals in lieu of locating them at the CU South property.
7. **Land Use Designation Changes.** The Land use designation map may be amended to enable the city and CU to implement a shared vision for the site. The standard process detailed in the BVCP

will guide any future land use designation changes.

8. **Annexation Timing.** Preliminary engineering design and studies pertaining to flood mitigation, the CU levee, and habitat and wildlife will be completed expeditiously and will be used to inform the annexation agreement.

Principles for the Area designated as Open Space-Other (OS-O)

(See Figure 1: OS-O Designation.)

Area within 100-year Floodplain

(See Figure 2: 100-year Floodplain)

1. **Protect Open Space.** Minimize disturbance to protect this area given its potential for high open space value and presence of sensitive species. Maintain and create recreation opportunities that do not significantly conflict with ecological values. Trail connections to open space trails would follow a typical city public process. Where appropriate, support open space-related educational and research opportunities. Specific real property ownership, easements, and/or agreements will be established during annexation.
2. **Resource restoration**. Seek opportunities for ecological restoration and improvement. Not all of the site is currently high value for wetland function and floodplain connection due to past land uses, but could be enhanced to benefit the site itself as well as adjacent city natural areas. The city seeks to partner with CU to incorporate open space values and restoration values.
3. **South Boulder Creek**. Protect and when possible restore wildlife habitat, grasslands, wetlands and streams to improve the delivery of open space values except for park and recreational facilities designed to be located within the floodplain.

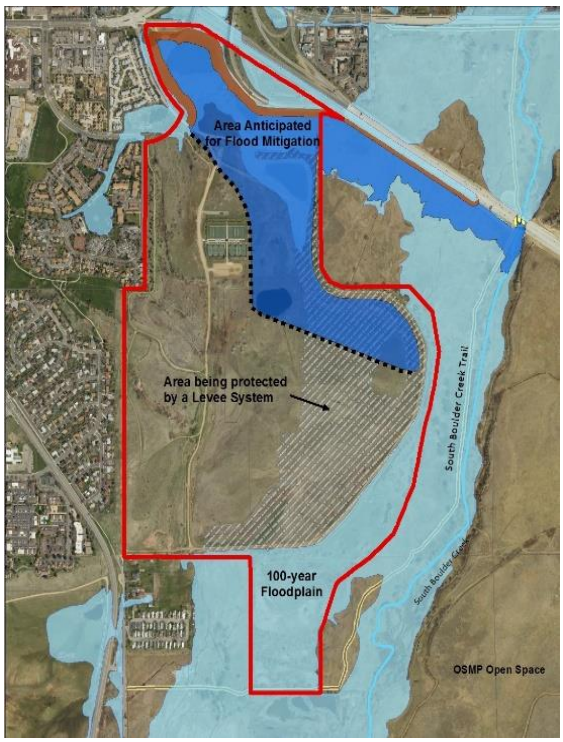


Figure 2: Conceptual Flood Mapping

4. **Collaborate with city and county on open space.** The city and county will partner with CU to incorporate open space values, maximize conservation, education and recreational opportunities and leverage city and county resources.

Area Protected by Levee System/Area of Greater Open Space and Ecological Value

(See Figure 2: Area Being Protected by a Levee System)

1. **Compensatory mitigation:** Floodplain functions, including wetlands and flood mitigation, may be restored as part of compensatory mitigation for impacts elsewhere on site.
2. **Open space, restoration and recreation:** In this area, the city will conduct further analysis of the impacts of removing the levee on flood mitigation design, evaluate potential ecological values and recreation opportunities and seek to collaborate with CU to protect and improve the

delivery of open space, restore high ecological value areas and/or provide areas for recreation in lower ecological value areas. The city and CU will work together to achieve greater open space acreage as part of either larger city open space conservation areas or limited-structural build, such as community gardens, recreation, solar gardens, etc.

3. **Levee system**. The city will seek to work with CU to evaluate removal of the levee, including potential improved delivery of open space values, ecological restoration or enhancement benefits. CU will remain responsible for maintaining certification of the existing flood control levee on the site through the Federal Emergency Management Agency (FEMA), including but not limited to any operation, maintenance or replacement.
4. **No enclosed academic space, offices, or residential structures in the Area Protected by Levee or FEMA 500-year floodplain**. Such buildings would be constructed outside of this area. See Site Design principles below.

Principles for the Area Designated as Public (PUB) or Park, Urban and Other (PK-U/O)

Flood Mitigation Area

(See Figure 1: Public Designation, and Figure 2: Flood Mitigation)

1. **Analyze, design, and implement Flood Mitigation Phase 1**. Protect life and property by coordinating with the University of Colorado to implement the South Boulder Creek Flood Mitigation Study subject to final design (Phase 1). Consider mitigating flood risk to the highest standard practicable while balancing associated environmental, social and financial impacts.
    a. As part of the flood mitigation design process, the city will evaluate the flood storage and attenuation (water retention with slow release) value of the site, with and without the levee in place. The study will look at both flash flood and long-duration storm events.
    b. Specific real property ownership, easements, and/or agreements will be established during annexation for the area necessary for floodwater improvements and other uses (plus or minus some land area). Prior to a final agreement related to the flood mitigation land area, the city will conduct a groundwater assessment which verifies the feasibility and provides the basis for design and construction of implementing measures to convey groundwater through the dam in a manner that substantially replicates existing flow patterns.
    c. The site will provide adequate areas for construction, maintenance, and operation of city flood control dams, appurtenances, and associated flood storage including freeboard to reduce flood risks.
    d. Explore opportunities for passive and active recreation activities, or other uses compatible with the floodwater mitigation system and where possible, conserve and/or restore areas within the flood mitigation facilities with high ecological value and mitigate impacts.
    e. The city recognizes that storm events larger than a 100-year event can occur and may be more probable in the future due to the impacts of a changing climate. In designing the South Boulder Creek Phase 1 flood mitigation facility, the city's goal is to mitigate to at least a 100-year flood, and the city will consider larger events, including the 500-year flood as adopted by FEMA and a probable maximum flood as determined by the State Engineer. The mitigation facility will be designed to accommodate larger events per the requirements of the State Engineer.

f. Property interests for flood control purposes are anticipated to be provided to the city as part of the annexation agreement.

Land Use Mix

1. **Housing for university needs.** Housing on the site will meet the needs of university faculty, staff and non-freshmen students in order to address the fact that Boulder housing is currently unaffordable to faculty, staff and students. Providing workforce and non-freshmen housing will contribute positively to the community's housing affordability goals and aid the university in its recruitment and retention. Housing should be mutually beneficial to the community and university and integrated with needs of the community rather than built as isolated enclaves.
2. **Residential units and non-residential space**.
    a. Housing will be the predominant use of the site for areas not used for flood mitigation (i.e., with a target of 1,100 residential units and the final number guided by transportation performance and other site constraints), although the site may include a mix of residential and non-residential and facilities. The site will emphasize housing units over nonresidential space (jobs) to help balance jobs and housing in the community.
    b. Except for recreation facilities, development will be phased such that non-residential space will be phased after a significant amount of housing is built. Later phases will be dependent on demonstrating that initial phases achieve objectives of mitigating impacts.
    c. The overall non-residential space footprint will be minimized and support and benefit the convenience of the residents, employees, and visitors to residential and recreational uses of the property.
    d. The exact amount, types and location of residential and non-residential space will be refined to minimize impacts as a long-term master plan is developed and as transportation analysis is conducted.
    e. Academic facilities will include space for research and/or education pertaining to natural environment such as ecological restoration, floodplains, and related topics.

    Use restrictions. The site will not include large-scale sport venues (i.e., football stadium), high rise buildings (maintaining substantial consistency with the city's height limits), large research complexes such as those on east campus, roadway bypass between Highway 93 and Highway 36, or first year student housing.

Site Design

1. **Model of quality and innovation.**
    a. The site will be a model for innovation and high quality, energy efficient buildings, and site design that minimizes environmental impacts. Innovation will span a range of areas (e.g., how food and waste processes are addressed, outdoor lighting, sustainable materials, stormwater, etc.).
    b. It will model future resilience and sustainability for design, construction, and maintenance strategies. Development will meet the equivalent of the U.S. Green Building Council's Gold or Platinum LEED standards or other applicable sustainability standards for residential development.
2. **Clustered, village design.**

a. Residential development will be of high quality and contextually appropriate to neighboring properties.
b. Development will be compact, clustered in a village style. Any non-residential buildings will be human scaled.

3. **Environmental standards.**
   a. Usable open space that meets the active and passive recreational needs of the residents, employees, and visitors will be maintained within developed areas.
   b. Wetlands will be maintained, preserved, protected, restored, and enhanced in a manner consistent with the city's Land Use Code.
   c. Development on slopes at or exceeding 15 percent will be minimized in a manner consistent with the city's Land Use Code.
   d. All enclosed academic structures, offices, or residential uses will be constructed outside of the FEMA 500-year floodplain.
   e. Stormwater impacts of new development will be mitigated based on established criteria for minor and major storm events and applicable stormwater quality requirements. Preservation or restoration of existing undeveloped areas will be considered to attenuate peak runoff from the site and to mitigate stormwater quality impacts.

4. **Building mass, height and views.**
   a. Buildings will be designed and sited in a manner to protect views and contribute positively to the character of the city's "gateway". Building heights will maintain general consistency with the city's height limits with buildings varying in height and visual interest. Building heights will transition gently from the open space and to neighborhoods to the west.
   b. Building location, massing and height will protect and complement views of the mountain backdrop, particularly the viewsheds from the US 36 bike path, the South Boulder Creek Trail, US 36 and SH 93.

Urban Services and Utilities

1. **Urban Services.** Future agreements between the city and university will be contingent on the ability of the city to provide Adequate Urban Facilities and Services and university's contribution to cover the cost of the necessary services and utilities on site and to address off site impacts to systems.

Transportation

1. **Performance based transportation to avoid impacts.** The transportation needs generated by future development at the site will not unduly impact the transportation networks that serve the property. Impacts to local and regional networks will be mitigated through implementation of performance based standards. The city and CU will complete additional planning and transportation analysis to further develop performance based standards including but not limited to maximum amount of parking, trip budgets, transit use, pedestrian and trail connections, and access to transit passes. Planning considerations will be addressed collaboratively by the city and CU and will include innovative and long-range technologies, including electric vehicles, autonomous vehicles, etc., as well as possible joint options with City-funded transit.

2. **Multi-Modal hub and connections.** Implement a multi-modal mobility hub and transit connections between the CU South Boulder property and other Boulder campus locations to manage employee and resident access and mobility.
3. **Connected multimodal systems.** Incorporate connected and safe pedestrian, bike and transit systems through CU South integrated into the broader city and regional bicycle and pedestrian network, including safe street crossings, trailhead(s), soft surface recreation trails, and a trail link(s) to the South Boulder Creek Trail in coordination with OSMP. When creating and maintaining recreational opportunities such as trail connections through the property, do so with consideration for likely and potential impacts to adjacent open space, and for mitigation of those impacts, as appropriate.
4. **Protect Neighborhoods from Transportation Impacts.** The street design will minimize impacts into nearby residential neighborhoods, such as Tantra Park, Basemar, Martin Acres and High View.
5. **No bypass.** Discourage any outside traffic from cutting through the property to avoid impacts to the Table Mesa Drive/Broadway connection.
6. **Emergency connectivity.** Limited ingress and egress via local connections may be provided for emergency, life safety situations. Develop an Emergency Service and Evacuation Plan to address emergencies and use of emergency access and connections.

Update to Policy 1.05, as Recommended by Planning Board on May 25, 2017 and Approved by City County on July 11, 2017

(see blue text added.)

With three campus locations in Boulder and serving over 30,000 students, the university is integrated into the city's fabric and benefits the community socially, economically and culturally. The city will aim to coordinate with the university and engage with the community to exchange information and plan for future uses and activities on the Main campus, East Campus, CU South, and Williams Village area, especially where changes may affect surrounding areas or have regional implications. The city will address regional implications by seeking input, advice or partnerships from other governmental entities including RTD, CDOT and Boulder County. The city aims to work with CU cooperatively to address critical needs of flood safety, student and workforce housing, and transportation and other infrastructure. Intergovernmental agreements between the agencies can provide clarity about roles and responsibilities on such issues of mutual concern building on collaborative planning process and guiding principles. In its negotiations of an annexation agreement for CU South, the city will use the guiding principles as shown in Ch V. Subcommunity and Area Planning, CU South Boulder Campus.

Update to Chapter IV, Land Use Map Descriptions (PK-U/O), as Approved by City Council on July 11, 2017

(see blue text added.)

Park, Urban and Other (PK-U/O)

Characteristics and Uses: PK-U/O includes public lands used for a variety of active and passive recreational purposes or flood control purposes. Urban parks provided by the city include pocket parks, neighborhood parks, community parks and city parks as defined in the *Parks and Recreation Master Plan*. The specific characteristics of each park depend on the type of park, size, topography and neighborhood preferences.

CU-Boulder Main Campus

Design Guidelines

University of Colorado at Boulder
Office of the Campus Architect

Prepared by
William R. Deno, FAIA Emeritus
under the direction of
Steven C. Thweatt,
Campus Architect




"Nowhere is it more essential
to have the physical plant
beautiful and well-knit together.
Nowhere should it be more feasible
to enlist the careful thought
of well-trained minds
to weigh and to reconcile
all component parts."

— Charles Z. Klauder, 1929

"The strength of the (Klauder's Tuscan Vernacular) design has provided a dominant direction for the campus to the present day. Visiting the campus, one is struck with the consistency of vision. Even buildings of the 1960s and 1970s 'brutalist' style seem, here, to be tamed into submission to the whole."

— Frances Halsband,
"Charles Klauder's Brilliant Invisible Hand,"
The Chronicle of Higher Education,
May 26, 2005.

April, 2007

Design: Elizabeth C. Johnston, Lizzardbrand Inc.
Photography: CU-Boulder Office of Photography and Office of the Campus Architect
Editing and proofreading: Marc T. Killinger

Contents

Introduction

Eaton Humanities building, a 1999 addition to the campus Vernacular design palette, illustrates the commitment by the campus to the Tuscan Vernacular style while adapting to today's programmatic requirements.

Unlike most other higher education campuses around the nation, the architectural building style at the University of Colorado at Boulder has remained relatively constant since its origination in 1921 at the hand of Charles Z. Klauder. Even through the post WWII growth period and the1960s and 1970s, the basic "Tuscan Vernacular" style has prevailed.

Further, all capital improvement projects have received intensive oversight by campus architects, and since 1964, a committed external design review board reporting directly to the President of the University. Because of this close collaboration of professionals and the inevitable scrutiny accompanying this established development process, *prescriptive* detailed standards for the design of buildings and grounds have not traditionally been utilized. However, the following *descriptive* general guidelines are suggested as valuable checkpoints along the way toward maintaining the excellent quality of the CU-Boulder built environment.

An early sketch for a proposed unbuilt women's residence hall complex indicates the stylistic intent of architect Klauder.

The grand east elevation of the signature Norlin Library and its monumental bay window is inside the building today within the reading room of a 1980s addition.

Site and Landscape Character

Campus outdoor spaces play a major role in helping to define institutional image and the unique campus character, and to support campus activities. Quality outdoor area design has profound implications, not only for the campus' visual appearance but also for how the university and the surrounding community relate. The outdoor designs generate how social interactions originate, how people move about campus, how inviting and safe it feels, and how the campus landscape environment contributes to the inspirational aspect of the student and faculty's campus experience. Numerous studies have confirmed that a well-designed and maintained campus can result in increased numbers of student applicants, higher retention rates, and ultimately, greater alumni donations.

The intent of the following general guidelines is to support and guide decision making for project planning and design consultation, to ensure that any design is part of a consistent whole, and to allow maintenance and construction staff to coordinate incremental campus improvements. Emphasis must be toward sustainable, totally integrated, and holistic facilities projects. When applicable, planning for phased development of any specific site and building should occur.

A campus character often described as romantic is based on uniform architecture and building materials in a verdant landscape against an impressive mountain backdrop.

The goal is to integrate the architecture, the mountain backdrop, and the high plains landscape as one.

Guidelines

Community Interface Guidelines

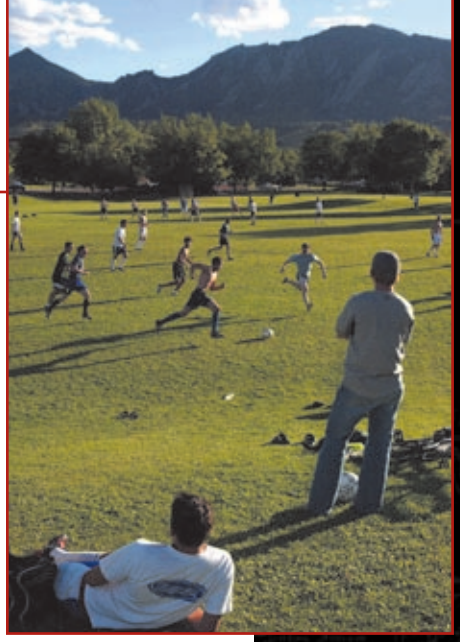
Community interface address campus corners, edges, entrances, and connections between other Boulder campuses and the city of Boulder.

- Create large-scale landscape designs at campus corners including mass plantings and clear durable functional identification signage. Consult the campus signage standards for all signage designs.
- Provide campus edge landscaping, signage, site accessories, and material selections to create a break between adjacent uses while maintaining a sense of continuity, softening views of perimeter parking lots, and improving safety for all modes of movement along the campus interconnections with the community.
- Enhance transitions to and from the campus through appropriate lighting levels, simple and functional signage, appropriately scaled plant material, and elimination of clutter.
- Link CU-Boulder properties through functional circulation systems, similar landscaping and accessories, and directional signage.

The campus corner at Broadway and University is a mix of plantings, signage, and pathways, which interface with the city of Boulder.

A busy joint-use pedestrian and bicycle path borders a variety of methods to soften internal views of the campus.

A corner wall and landscaping provide a picturesque beckoning entrance to the University of Colorado Research Park. As with all satellite locations, the main campus materials palette is used to obtain a "family" recognition.

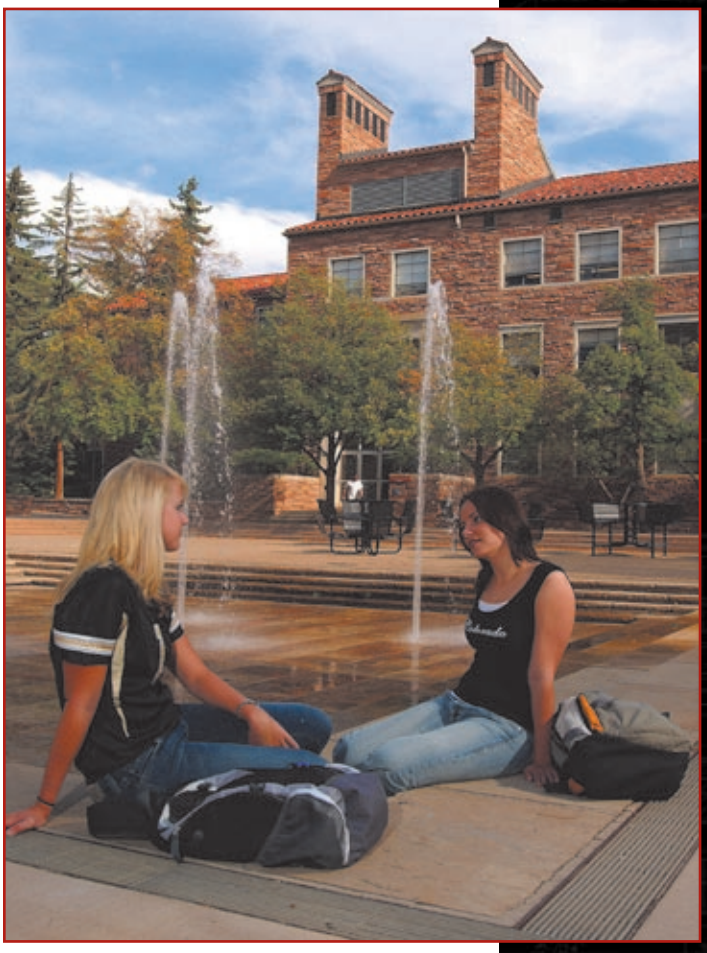


Open fields of lawn invite both casual sunning and more active recreational sports.

Social Spaces Guidelines

Social spaces guidelines attempt to define how outdoor spaces are used, how often they are used, and how people transition between buildings and outdoor spaces.

- Recognize outdoor area uses by differing activity levels such as: major walks, tranquil areas for reflection and quiet activities, places to sit in both active and passive spaces, and solar orientation.
- Develop outdoor rooms (courts, cloisters, plazas, malls, etc.) to reflect use requirements for seating, solar warmth, wind protection, focal points such as fountains or sculpture, and unique character by site accessories or naming.
- Frame and screen outdoor rooms from adjacent distractions through arcades, colonnades, gateways, planting walls or appropriate screen fences.
- Create and retain large open flat lawns for a diversity of recreational and social uses. Provide shaded edges for outdoor studying or viewing activities.
- Use forecourts of buildings to accommodate both passive and active use related to the building. Include site walls to change elevation, reduce the scale of buildings, define specific outdoor areas, and provide seating.
- Designate outdoor café, meeting, and market venues near highest population densities with adequate seating, lighting, power source, and shade structures for vendors and customers.



One of the most popular outdoor spaces for students is the courtyard outside their building, the University Memorial Center. A fountain, plus casual and formal seating is the place to be seen.

Two teak benches and a sandstone table overlooking Varsity Lake commemorate a deceased economics professor, Reuben Zubrow. His family's gift is a favorite spot to relax and study.

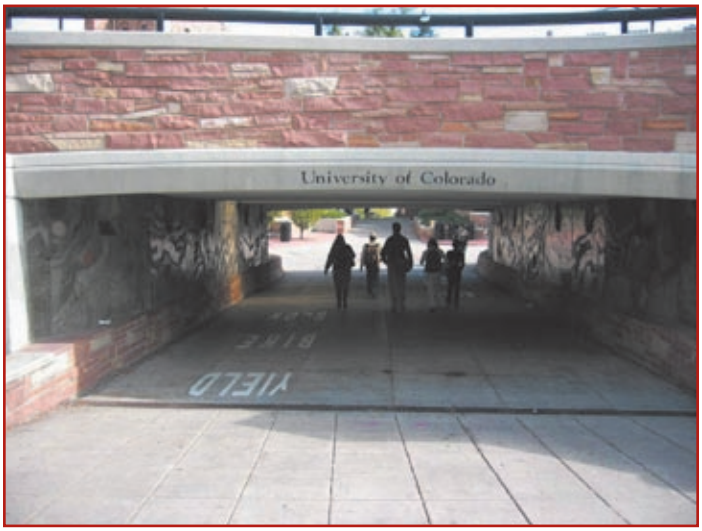
A paved path across Norlin Quadrangle accommodates students coming to and from the 1999 Eaton Humanities building.

A welcome alternative to muddy paths across green lawns is a narrow masonry surface to accommodate desired shortcuts to class.

Pedestrian Area Guidelines

Pedestrian areas address the pedestrian experience: what they see, feel, hear, and smell — such things as walkways, nodes, views, and vistas, weather exposure or protection, resting areas, and safe movement.

- Maintain walkway widths appropriate for the anticipated volume of pedestrian traffic, but no less than seven feet for efficient snow removal. Consider other uses, such as wheelchairs, bicycles, and service vehicles. Provide generous corner radii or small plazas (nodes) where walkways intersect.



An extra-wide skylit underpass beneath Broadway links the Boulder campus with "the Hill" business district. Its walls have an integral colorful concrete mural that remains graffiti-free.

- Avoid colored concrete walkways and flagstone — except as narrow shortcut paths which have no snow removal or accessibility for wheelchairs.
- Create stopping places along walkways to observe and appreciate views, landscape, or activities along the way, incorporating seating where possible. Provide pull-off bays on joint use walks for service vehicles where needed.
- Landscape to protect walkways from strong winds and inclement weather. Orient building and other facility entrance points in consideration of rain, snow, ice, wind, sun, and shade. Strategically place all-weather shelters along pedestrian paths, major bus stops, and at pay-parking stations.
- Provide consistent directional signage at campus entrances, parking garages, major buildings, key intersections, and nodes using campus standard signage details. Include maps, event locations, disabled routing, and bicycle routes.
- Provide grade-separated crossings at major streets whenever possible. Incorporate designs with oversize widths, full access to all users, public art, and a sky-lighted interior.

Several "you are here" informational maps are placed at locations near campus entries where newcomers can get directions and other useful information.

For many years a shared pedestrian and bicycle path along Broadway has provided comfortable travel lanes for each.

Vehicular Areas Guidelines

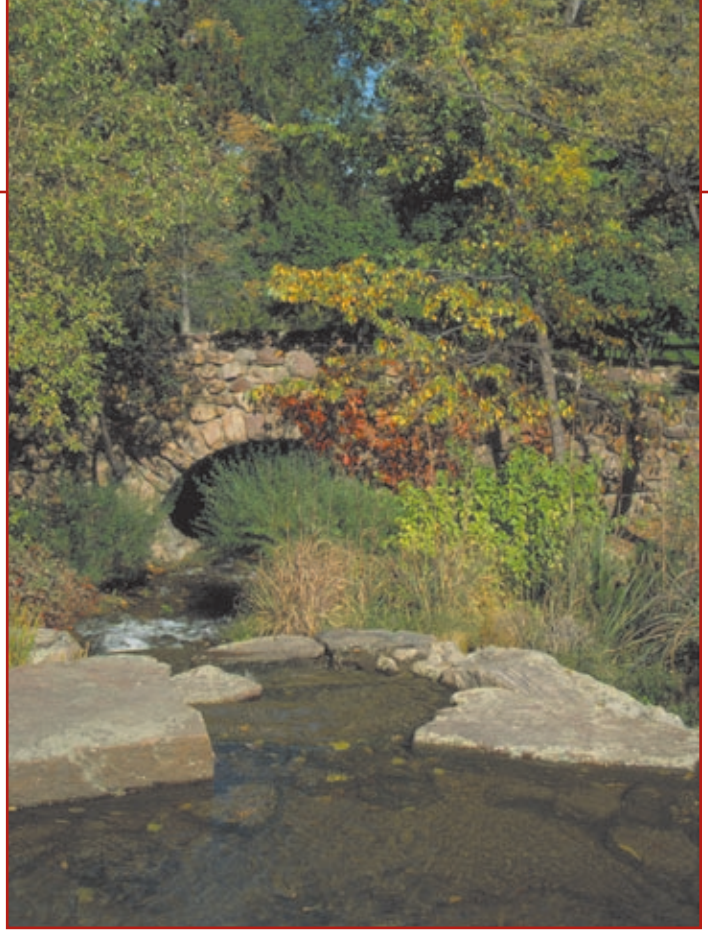
VEHICULAR AREAS address roadways and parking for cars, emergency vehicles, service vehicles, bicycles, and mass transit.

- Enhance existing streets throughout campus for safer multi-modal movement and improved appearance utilizing surfacing, lighting, signage, bicycle parking, and site accessories.
- Recognize that campus policy is to give pedestrians and bicycles priority over service and private vehicles in multi-modal areas.
- Provide facilities and amenities to encourage alternative means of travel to and from campus, such as information kiosks, bus shelters, maps, and visitor directions.
- Place generously-sized bicycle parking areas along multi-modal streets and near campus activity centers and student residence halls and courts.
- Orient bus shelters to allow sufficient views of arriving buses and to provide shelter from prevailing winter winds and snow. Include seating, trash receptacles, bus schedules, and brightly lit interiors. Use vandal resistant materials including break-resistant glazing and coated black steel structure and roof.
- Establish drop-off zones near major activity centers for convenient use. Provide seating for waiting, attractive landscaping, emergency telephones, and adequate lighting.
- Provide landscaping in and around parking lots to soften hardscape appearances from streets, break up extended rows of cars, and provide shade. Ensure adequate lighting for safe use and clear pathways from parking lots to adjacent building entrances. Design sufficient setbacks between parking lots and streets, which could include raised landscaping, berms, and/or walls to block views into the lot.
- Include loading and service vehicle parking spaces adjacent to major buildings. Screen or buffer views to service areas where possible with a combination of screen walls, opaque enclosures, gates, and landscaping. Limit service parking to designated spaces only.
- Provide raised curbs selectively along campus walkways to discourage all modes of transportation from crossing or parking on lawns or adjacent landscaping.

The major bus shelter on Colorado Avenue stands ready for people and their shuttle buses to arrive. All the amenities including shelter, seating, visibility, bus schedules, and other information are provided.

Upon entering the campus a variety of service vehicles, pedestrians, and bicycles are provided with curbed clearly marked travel paths. Off path service parking is also provided where practical.

Mass planting of colorful annual plants and more lasting perennials are earmarked for areas where many people can enjoy the displays.



University owned water shares feed campus pond and rock falls replete with natural plantings. Before today's state-of-the-art underground irrigation systems this water was used for flood irrigation of lawns through a system of concrete-lined ditches.

The recirculating water fountain at Sewall Residence Hall, above, dates from a design by Charles Z. Klauder in 1934 fronting a south courtyard rose garden with other limestone carvings. At right, three successive holding ponds clean water runoff from the research park before entering Boulder Creek. Natural plantings throughout the area attract wildlife and pleasurable viewing from pathways.

Landscaping Elements Guidelines

LANDSCAPING addresses the relationship between the campus and the natural foothills landscape, campus land contours, drainage, and plantings in relation to buildings. In 1918-19, when Charles Z. Klauder created the university building style based on the buildings and landscape he saw in rural Tuscany, he included the same vertical conifers as those growing in the Boulder foothills. Today, evergreen trees, high plains grasses, and other plants of the transitional ecosystems are still a desirable counterpoint to the Tuscan Vernacular architecture.

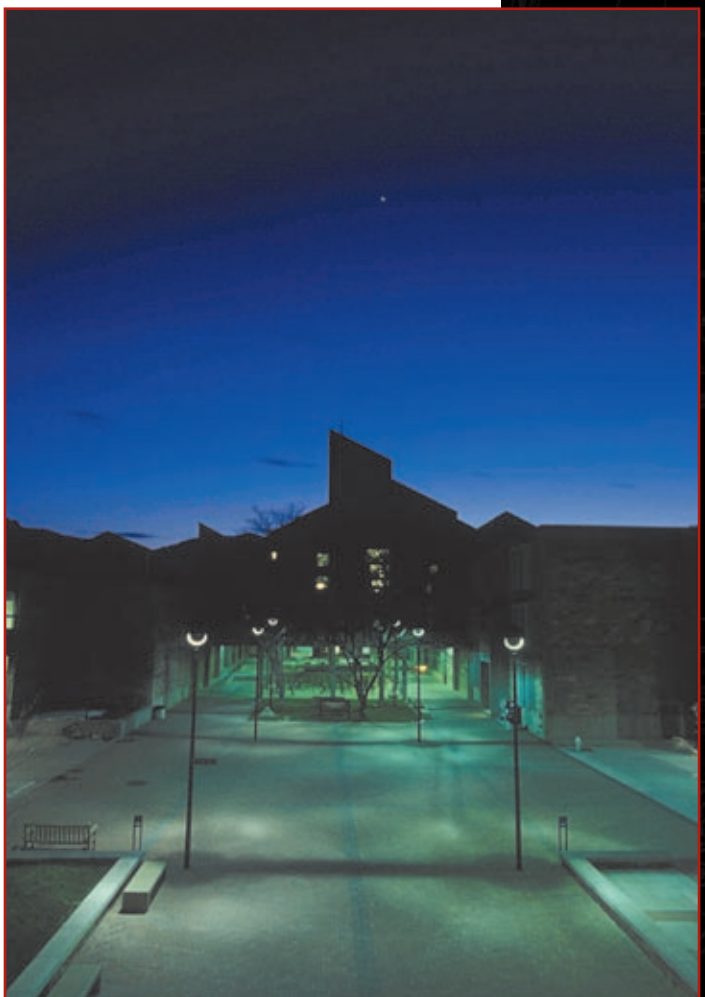
- Use native landscape materials to the greatest extent feasible, including drought-tolerant plantings where appropriate, and the preservation of flora and fauna habitats.
- Avoid unsustainable slopes, minimize retaining walls, and utilize gradual sloping earthen berms only when necessary.
- Take advantage of existing campus irrigations systems and accompanying raw water consumption standards. Utilize the best water quality principles throughout.
- Slope sites to drain away from buildings, sidewalks, and plazas. Use landscaping to effectively control soil erosion. Design to control water runoff and storm drainage through retention/detention methods.
- Enliven campus spaces with public art, including sculpture, plazas, specialty gardens, and where environmentally feasible, water features.
- Identify and preserve beautiful and interesting view corridors of all kinds, especially to the mountain backdrop.

An engraved stone marks the site of the Shakespeare Garden, a place for plants related to the Bard's plays near the adjacent outdoor theatre.

- Plant flower beds together in quantity at points of campus entry and places of greatest people density. Use more drought-resistant plantings, naturally grouped, in areas where close inspection is not likely. Place plant materials in massed groupings without using several competing species.
- Arrange trees and other plantings to enhance building architecture and details, especially entrances, which should be fully revealed. Limit small scale plantings, such as flower beds, to principal building entrances.
- Label or otherwise identify trees, shrubs, flowers, and other planted material as a means to educate and gain appreciation for the campus landscape.
- Provide campus standardized site furniture, convenient trash and recycling containers, and other site accessories in pedestrian-friendly locations. Provide places for casual seating and benches with backs for longer term use.
- Use campus standardized lighting fixtures for pedestrian areas and for streets and parking lots. Ensure that lighting levels meet Campus Lighting Master Plan guidelines for campus walkways and building entrances.
- Provide special lighting for building fronts, walls, trees, public art, and special landscaped areas to create emphasis on focal points of interest of the night-time campus.
- Provide uniform regulatory, identification, directional, and informational signing according to existing campus standards.

A shuttle bus stop on Regent Drive features a campus standard bench, trash and recycling containers, signage, lighting, and appropriate plantings.

Herbst Plaza, the principal east courtyard serving the Drescher Undergraduate Engineering building (ITTL), the Discovery Learning Center, and the main Engineering Center complex, is a welcome entrance both day and night.



The entrance to the Imig Music building features public art paving and sculpture, sandstone seating walls, and a flower planter.

A fun event promotes and educates the campus community on the advantages of recycling, energy conservation, and other worthy environmental practices.

Sustainable Community

CU-BOULDER continues its long-standing commitment to the principles that establish a *sustainable community* — which can be defined as a place of interconnectivity of all things where attention is paid to how physical development can be sustained over time. It involves how building development occurs, land is used, transportation is managed, natural resources are respected, conservation technologies are practiced, and social and economical issues are prioritized. These design guidelines support the achievement of fiscally sound and environmentally responsible development and the wise stewardship of all campus resources.

- Support the ability to achieve the equivalent of a United States Green Building Council *Leadership in Energy and Environmental Design (LEED)* certification status for new construction maximizing practical points of the five LEED categories.
- Monitor and document the equivalent LEED rating for major renovations, and existing building upgrades, as well as operations and maintenance, wherever possible.
- Consider inherent opportunities and constraints of the development site and space and orientation within existing campus built environments. Include special emphasis on unique Colorado geographical and environmental sensitivities.
- Address alternative transportation opportunities for new physical development to encourage walking, bicycling, and transit use. Provide supportive information signage, maps, kiosks, and shelters.
- Design facilities and building systems to save non-renewable resources through the use of substitutes, recycling, and better recovery and reuse.
- Include consideration for maintainability over time through potential benefits from building life cycle cost analyses, alternative performance systems, and other strategies at time of design and construction.
- Promote ongoing energy conservation practices, water conservation, and waste reduction.

Because of limited development sites, building expansions use air space over walkways and utilize below grade floors such as the Cooperative Institute for Research and Environmental Sciences (CIRES) building addition to the Ekeley Sciences Complex.

The Leadership in Energy and Environmental Design (LEED) logo designates a silver award for the renovation of the University Memorial Center (UMC), a gold award for the Alliance for Technology, Learning and Society (ATLAS) building, and a gold award for the Wolf Law building.

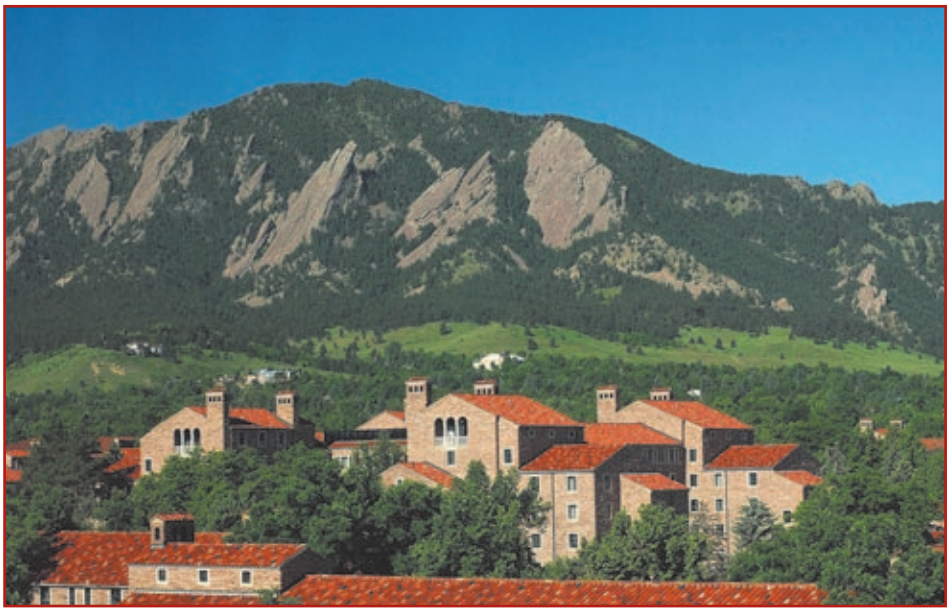
Student leadership and university support provide additional electrical power to the campus from wind-driven turbine sources.

Architectural Character

Bicycling through Tuscany in northern Italy around the turn of the century, architects Charles Z. Klauder and Frank Day of Philadelphia admired hillside villages and rural farmhouses that 20 years later inspired their design for buildings at the University of Colorado in Boulder.

The main campus is known and admired for its uniform architectural style and building materials palette. Sandstone walls, red tile roofs, limestone trim, and black wrought iron accents are set in a verdant landscape against a mountain backdrop providing an appealing sense of stability and perpetuity. When viewed in aggregate, the campus is reminiscent of hill towns around Florence and Siena. Remarkably, the distinctive building style set among a variety of open spaces has endured despite pressure from other building styles *du jour* and differing ideas from architects and others through the years.

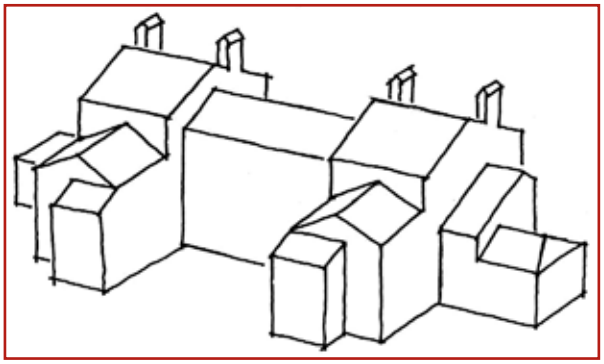
A typical Tuscan rural villa photographed in the 1920s or 30s is among a wide variety of buildings and hill towns which dotted the countryside of north Italy that inspired Frank Day and Charles Klauder toward their vision of University of Colorado architecture.

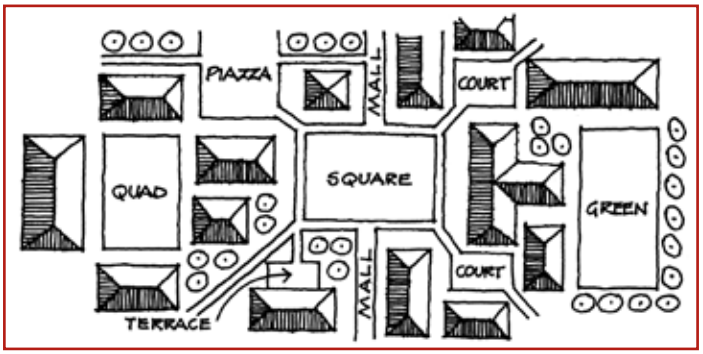


An example of the similarities between the Boulder campus and a Tuscan hill town resides in a similar climate, with similar building forms and a similar mountainous setting.

Tuscan hill towns with familiar building forms to that of the Boulder campus dot the countryside.

Farrand Residence Hall appears as a complex building, but in fact it has only five repeating forms attached at each corner of a single central core building.





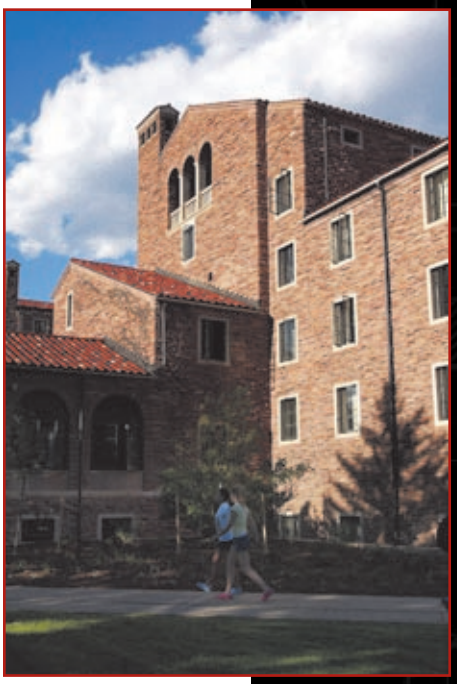
Buildings and open space should align in ways that produce a variety of campus outdoor rooms.

Guidelines

- Begin each new building with symmetry in plan, although asymmetrical ideas can be introduced when necessary. Use an assemblage of repeating and overriding forms for interest and economy of costs.
- Site each building or complex as a complementary insert into the campus facilities master plan. Respect neighboring structures and surrounding open spaces, including view and circulation corridors. Minimize footprints to conserve scarce building sites.
- Plan roofs that are gabled and hipped cascading down from the higher building forms to the edges of buildings. Respect the human scale, particularly at ground levels.
- Ideally, plan for a floor plate width that could capture cross ventilation and sunlight. Spread out building forms from a central core, creating pleasant courtyards and forecourts. Limit size of wall openings reflecting less need for daylight in a high plains climate.
- Emulate previous themes, but avoid direct copying. Shed, pavilion, and flat roofs over more simple forms can be added effectively to the Tuscan Vernacular style, stretching the visual experience while reflecting a contemporary functionality.

The south entry court of the Wolf Law building is approached through a series of eye-appealing environmental and architectural elements.

- Consider alterations or additions to existing buildings categorized as cherished, landmarked, or valued contributors to the Boulder campus as significant and requiring review from appropriate authorities.
- To conserve campus land, construct new buildings with a minimum of four floors of usable space above grade, a fifth attic floor for mechanical space, and at least one floor below grade.
- Design building entrances commensurate with building use, people volume, user convenience and shelter, and complementary in form and materials to the architecture. Elaboration is usually confined to entrances. The primary entrance must be the focal point of arrival, with proper transitioning from exterior entry terrace to interior entry space.
- Enclose within roofs and attic spaces, or otherwise screen from view, mechanical and other technological equipment that often is exposed on roofs in commercial/ industrial environments.



Tuscan Vernacular roofs traditionally cascade over building forms to people below.

Three external additions to the original 1903 Buckingham Library occurred in 1923, 1985 and 1989. Each accommodated a new program, (fine arts, dance, theatre) and all easily fit with the campus architectural style.

Architectural Character Summary

The 2005 Wolf Law building, above, presents an appearance worthy of admiration for those entering through its courtyard.

The daylighted atrium of the 2002 University Memorial Center addition, left, reflects a good interior design solution and sustainable design practice.

The mockup of the building wall on each construction site establishes the desired standard for the desired result.

The scale of buildings should be kept to human proportions; should be sensitive to their surrounding context; emulate, not copy, the campus Tuscan Vernacular style; and above all, use simple straight forward forms without excessive detailing.

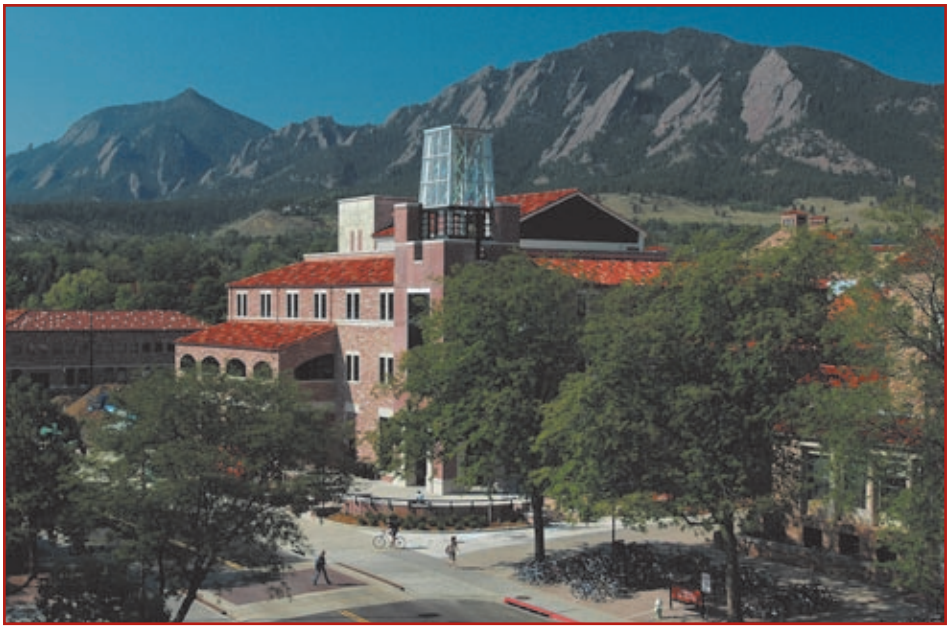
Newly inserted campus development should reflect a family resemblance to the Tuscan Vernacular style by reference to size and scale, massing of similar forms, uniform building materials, pedestrian scale, landscaping amenities, and open space variety.

Sample walls of stone, trim, window treatment, and roofing should be constructed for campus approvals prior to building application.

With all facilities development, intelligent design choices should be considered for energy efficient and environmentally friendly projects by every practical means.

Two shed structures flanking the entry to the Joint Institute for Laboratory Astrophysics (JILA) addition contains a heat pump for the Power House in one, and a transformer in the other. Innovative solutions keep faith with quality campus architecture.

Materials Selection



The 2006 Alliance for Teaching, Learning and Society (ATLAS) building houses the center for campus technology. It is fully wrapped in the Tuscan Vernacular style except for the top of the corner tower where technology exhibits its presence.

The vocabulary of materials for the campus built environment is a vital element toward the consistency of design excellence. Walls of native sandstone, roofs of clay barrel tile, trim of limestone, and accents of black wrought iron make up the principal elements of this palette.

The quality of materials used in the construction of buildings, associated facilities, and site elements should be honest to their original form. Imitations to sandstone, limestone, clay roof tile, copper, wrought iron, and other natural building materials when substituted result in a compromise in quality, substance, and appearance and their use is discouraged.

The east entrance to the University Theatre is true to the campus palette of materials and stylistic intent.

A variety of sloping roof forms are evident on campus roofscapes. An overall hue of red clay barrel tile covers a panorama of campus roofs.

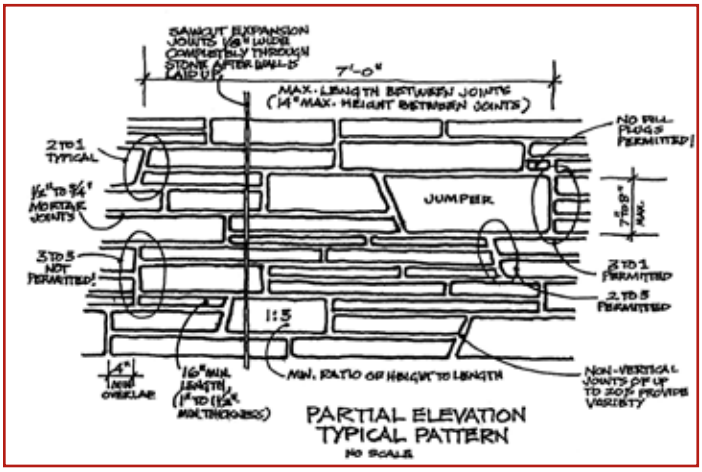
The Coors Events/Conference Center illustrates that the campus menu of roof planes can include flat and sloping types on a single building.

Close up, patterned tile covers over pans, and color variation is apparent.

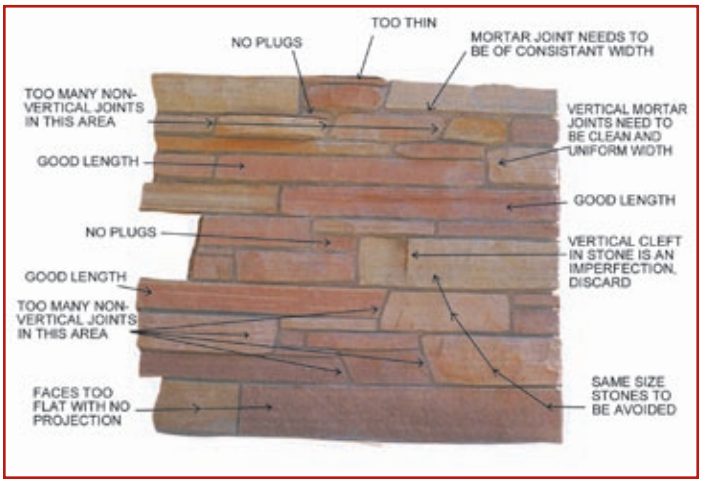
Roof Tile Guidelines

- Specify straight barrel mission tile for all sloping roofs, a vitreous clay product, laid in a variety of styles, including mission, thatch, regular, random, cabana, and others as directed by campus staff. Sloping roofs should always be used except when unusual circumstances dictate otherwise.
- Stipulate five to six colors for the covers that lap over pans to be fired in natural and glazed weathered or non-weathered colors of light and dark reds, rose, brown, natural, and a sprinkling of buff.
- Use barrel tile on gable, hip, shed, and similar roof types greater than 3:12. Ensure that roof patterns and color schemes are harmonious with adjacent roofs whether attached or on nearby buildings.
- When flat roofs are necessary, provide sloping underlayment material to drain. Utilize light and colored ballast for flat roof applications.

A closeup detail photo of a typical sandstone wall.



Masons perched on building scaffolds work from a graphic sketch serving as a recipe of how to lay a standard campus sandstone wall.



A typical critique of a sandstone wall.

Sandstone Wall Guidelines

- Obtain locally quarried sandstone through stone suppliers who stockpile custom order quantities and colors specific to each project.
- Specify colors and mix (pinks, reds, buffs, and others) that are responsive to surrounding campus buildings. Use a stain face stone wherever practical.
- Determine the pattern of laid-up walls in terms of scale and sizes of stone that reflect the magnitude of the project's walls. Follow the general pattern and accompanying notes, at left, and at www.colorado.edu/architect.
- Lay up stone with the fractured face extending various distances from the vertical mortar wall line. Clip back ends of stone that extend well out from the vertical mortar line.
- Strike corners of walls to a straight vertical line top to bottom.
- Generally, keep stone lengths generous, always more than a foot in length and as long as practical to fit the desired pattern. Avoid any stone less than a 1:3 height to length ratio. Usually, limit stone to a 7″ to 8″ maximum thickness.
- Insert windows in walls to be consistent in arrangement, form, and function to this climate. Specify black window frames with limestone or sandstone heads, jambs, and sills. Select window glazing that is overall colorless with minimum tinting, especially at ground level where pedestrians circulate. Refer to the Leadership in Energy and Environmental Design (LEED) standards for further information.

A perfect example of a properly set window in a sandstone wall can be seen on the east wall of the McKenna Languages building.

Limestone Guidelines

- Use Indiana limestone as the preferred trim on campus buildings as a counterpoint to the pink sandstone walls and red tile roofs. Avoid precast concrete as a substitute whenever possible.
- Specify a surface which is planar cut followed by sanding to achieve a light honed finish. Note that both gray and buff colors are used on campus. Both age to a yellowish tint.
- Carve limestone into sculptural windows and door surrounds, lintels, coping, and other trim. Use factory skilled carvers for the more elaborate designs.

In 1999, a carved limestone cartouche was attached to the corner of the Eaton Humanities building. Its shape suggests a heart representing the humanistic programs taught in the building in a cartouche form reminiscent of others on campus.

Three carved lion head limestone spouts direct water into marble basins at the main entrance to Norlin Library.

Charles Klauder designed a beautiful rusticated limestone surround to a west entrance at the 1923 Memorial Student Union (now Economics building).

Wrought Iron Guidelines

- Specify that all lamps and lanterns, balcony rails, decorative pieces, sign posts and frames, and other steel elements are painted the campus standard warm black color.
- Use black wrought iron screen fencing in all instances as preferred standard. When alternative chain link fencing is necessary, coat with black vinyl and tack weld black metal screen on interior surface.
- Detail according to the campus standard, railings of all types used as barriers, fencing, and on steps and ramps.
- Mix a small amount of red pigment with black enamel to achieve the warm black standard color for painting all external steel elements.

A wrought iron fence between Folsom Stadium and Franklin Field establishes a barrier and game-time access to the stadium.

Above, standard campus black railings on Norlin Quadrangle border walks to curtail informal muddy paths across the lawns while not prohibiting passage for recreational use of the open space. At right, a warm black color for wrought iron is achieved by adding a small quantity of red pigment to complement the overall pink sandstone color.

Air handling equipment and transformers are discreetly fenced with wrought iron pickets backed by black mesh screening.

Other Materials Guidelines

- Use wood, painted steel or anodized aluminum for doors and door surrounds, windows and window trim dependant on cost, maintenance, and specific applications.
- Paint roof vent stacks, fan vents, exhaust and intake stacks not to match roof tiles but to the uniform campus standard neutral color. Paint cabinets or equipment screens, whether on roof tops or on the ground, the campus standard neutral color.
- Limit concrete site walls to 18″ or less in vertical height without a sandstone facing and a sandstone or limestone cap. Never use wood railroad tie site walls.

An excellent example of door and window materials design is architect Klauder's 1938 west entry to the Hellems Arts and Sciences building.

Roof equipment is ganged together and painted according to campus standard for such elements.

In Summary

These design guidelines follow specific directives, specifications, and standards in CU-Boulder websites for Facilities Management, Design and Construction, Campus Architect, and the current Campus Master Plan.

A Sense of Place

Where the physical and academic environment supports the human psyche

The site, landscaping, and architectural design guidelines presented within are not intended to be substantially prescriptive for a specific design outcome. The intent is to define parameters within which a compatible design can be achieved. The guidelines point the project design team and the user representatives toward an understanding of the physical characteristics of a building and/or landscape design, which will be acceptable within the CU-Boulder context. Sustainable design guidelines have been included in the section under Site and Landscape Character.

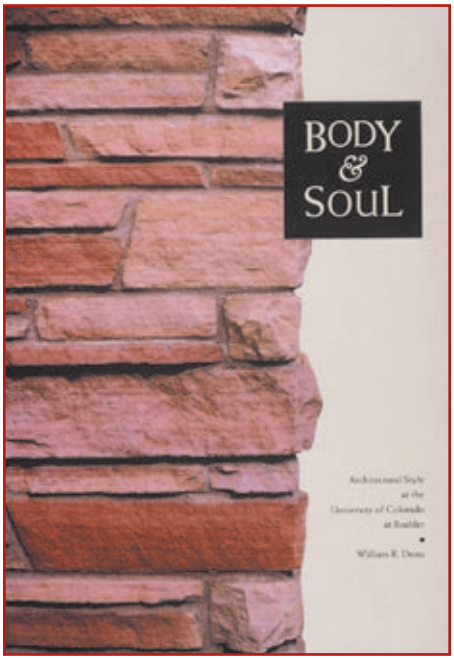
The resultant campus development designs should then reflect CU-Boulder's commitment to its tradition of design excellence, respect for its heritage, and its relationship to the surrounding region. *It is a matter of interpretation, not imitation.*

The 1948 Farrand Residence Hall, a design by Klauder's successor firm, Trautwein and Howard, exhibits its place in front of Boulder's hallmark Flatiron formation.

The fountain in Dalton Trumbo Fountain Court is a center piece attraction for the campus community.

Related Documents

Further information about the programmatic goals and design character of the main campus at CU-Boulder can be found in the *2001 Campus Master Plan*, the Campus Architect website at http://fm.colorado.edu/architect/index.html, the 1994 book *Body and Soul, Architectural Style at the University of Colorado at Boulder*, the 2005 documentary DVD by the same name, UCDHSC Graduate School PhD Thesis *"Contextual Eclecticism, Designing Distinctive Campus Architecture for the University of Colorado, 1917-1921."* Claire Shepherd Lanier, and various other planning and design documents on the Facilities Planning websites.



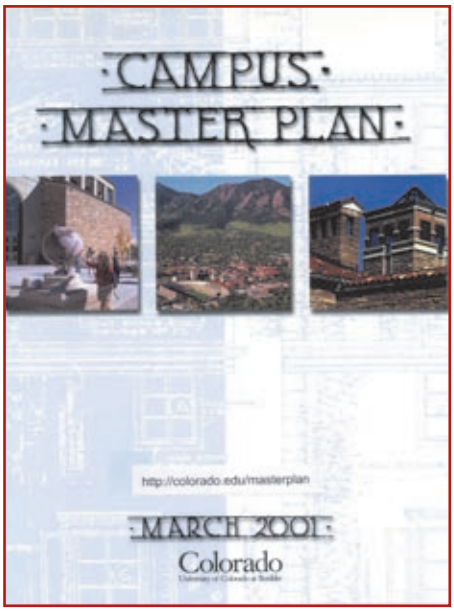
The award-winning book, *Body and Soul, Architectural Style at the University of Colorado*, has been a seminal work for the continuum of the Tuscan Vernacular style.

Special component plans in Lighting, Signage, Landscape, and many others are also available through the Office of the Campus Architect.

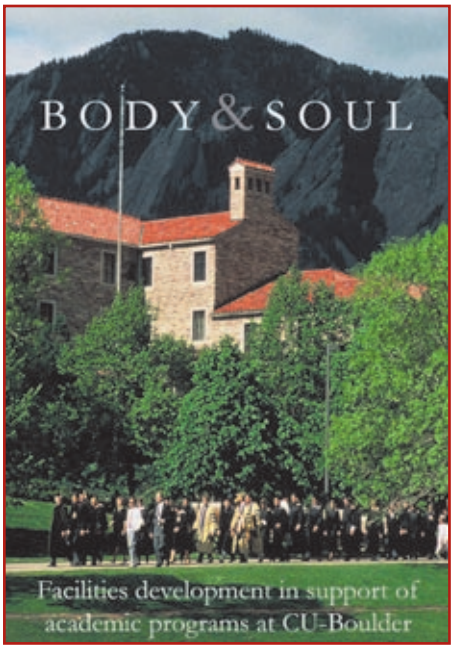
In 2005, the documentary film, *Body and Soul*, was released by the Department of Facilities Management. The DVD format is duplicated, boxed, and distributed for a nominal fee by the department.

All development within the CU-Boulder main campus must comply with the building construction standards, codes, and regulations as set forth in *Building Construction Standards* managed by the Department of Facilities Management, Office of Planning, Design, and Construction.

The 1994 book, *Body and Soul, Architectural Style at the University of Colorado*, has been a seminal work for the continuum of the "Tuscan Vernacular" style invented by Charles Z. Klauder.



An update of the existing *Campus Master Plan* is to be completed in 2008.



A documentary film completed in 2005 updates the book *Body and Soul*, visually explaining stylistic development characteristics.

University of Colorado
at Boulder

RESEARCH PARK

Boulder, Colorado

DESIGN GUIDELINES

University of Colorado at Boulder
RESEARCH PARK

DESIGN GUIDELINES

for:
The University of Colorado at Boulder

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29 January 1988

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INTRODUCTION

The University of Colorado Boulder Research Park is envisioned as a special place in the Boulder Valley, where innovative groups develop and apply new technology; a place where higher education and industry come together; and a site of life-long learning. The setting, in the shadow of the Flatirons just one quarter mile east of the Main Campus, plays a key role by providing an environment that stimulates creative research and technology transfer. To do so, it is imperative that the design of site infrastructure, landscaping, architecture and site details be of high quality and that these elements be visually and functionally coordinated with the Main Campus elements so that a sense of continuity with the University is established. The goal of the Guidelines is to create a commonly-understood set of shared expectations for the character of development in the Research Park.

The Design Guidelines are established as a means of **monitoring development** throughout the life of the Research Park, to help assure high quality construction that will enhance the community, advance the University's goals for research and development, and provide a stable climate for investment. The Guidelines define standards for the design of individual sites, roadways, buildings, landscaping, and other improvements within the Research Park to promote a **cohesive visual character**, and to provide for mutual safety through good site planning and efficient operation of circulation systems.

RELATIONSHIP OF THE GUIDELINES TO THE MASTER PLAN

The overall arrangement of the Research Park is defined in a Master Site Development Plan. These Guidelines are a tool for implementing the Master Plan. The plan establishes the character of development, location of building parcels and roads, views to the mountain background, and sets limits for building density and site coverage. Environmental constraints, including those for the Boulder Creek flood plain, are also prescribed.

The Plan encourages development of efficient transportation and circulation systems to and from the Main Campus and within the Research Park itself, such that the need for traffic control mechanisms and regulatory signs are minimized. Bicycle and public transit systems are promoted, and a pedestrian network throughout the Research Park is emphasized. Special considerations for handicapped users and resource conservation are also stressed.

Visual Character

The overall visual character of the development, as described in the Master Site Development Plan, is to be respected. A special identity is to be developed throughout the Research Park. This includes an image of the Park as a place of diverse activities, with amenities that make it an attractive work place.

The Park is designed with campus-like characteristics which draw upon the Main Campus for inspiration. The buildings within this "campus" are to be of a moderate scale, with significant amounts of open space and extensive pedestrian links throughout. Visual continuity is a primary goal of the Plan. Although specific architectural styles are not mandated, an overall sense of identity is to be developed throughout the Research Park by using a "palette" of similar design elements. Buildings are expected to express a sense of timeless modernity. Short-lived design fads that may appear dated quickly are discouraged.

Natural Amenities

Appreciation of the significant assets of the natural surroundings is also important. In general, existing land features and native vegetation are to be respected in all development within the Research Park. Significant views to Boulder Creek, the University of Colorado at Boulder Main Campus and the Rocky Mountains are to be protected or enhanced. Natural systems, including vegetation, water, and air, are to be protected as well. General site development concepts are influenced by the carrying capacities of these natural systems.

RELATIONSHIP OF THE GUIDELINES TO OTHER REGULATIONS

The Guidelines are a supplement to the Development Covenants that are a condition of leasing of property within the University of Colorado at Boulder Research Park.

Precedence of the Guidelines
Where Guidelines in this document appear to be at odds with general statements of the Master Site Development Plan, the specific standards in these Guidelines take precedence. University building and life safety codes take precedence over these Guidelines in cases where the Design Guidelines require action that is in conflict with those codes.

Design teams should review Urban Drainage and Flood Control District (UCFCD) and the Federal Emergency Management Agency (FEMA) standards, especially pertaining to erosion control and storm water management. All development within the Research Park shall meet those standards.

HOW THE GUIDELINES ARE ORGANIZED

The Guidelines are arranged in a sequence that presents broad-scale design concerns first, especially those related to site planning and circulation. Topics related to more detailed issues follow, such as architectural materials and signs.

The Order of the Guideline Topics:

1. Site Planning Design Guidelines
2. Storm Water Management/Drainage Design Guidelines
3. Vehicular Circulation Design Guidelines
4. Pedestrian and Bicycle Circulation Design Guidelines
5. Parking Lot and Structure Design Guidelines
6. Landscape Design Guidelines
7. Architectural Design Guidelines
8. Special Design Guidelines for Individual Building Types
9. Exterior Lighting Design Guidelines
10. Exterior Sign Design Guidelines
11. Site Furnishings Design Guidelines
12. Environmental Performance Standards
13. Special Design Guidelines for Construction Sites

Each of the sections is organized as a **CHAPTER**, and each chapter begins with a paragraph describing the overall scope of its contents. A Chapter name is preceded by its division number, which is a "whole number," such as "2."

Within each chapter, **CHAPTER SUBDIVISIONS** are shown that contain groupings of related design topics. The name of a Subdivision is preceded by a number as well, which is shown as a decimal value of the Chapter. The number "2.2" is an example. This hierarchical numbering system follows throughout the document.

The format of each guideline within a Subdivision has four components:

1. A **POLICY STATEMENT**, which explains the issue and establishes a design goal.
2. The **GUIDELINE STATEMENT** itself, which establishes the specific design objective and sets a specific target or standard.
3. An **ILLUSTRATION** showing one or more design solutions that would be appropriate or inappropriate with respect to the guideline. This may be a photograph or sketch.
4. An **AMPLIFICATION**, a statement which suggests alternative ways of meeting the guideline or covers miscellaneous considerations.

DEFINITIONS

For purposes of this document, these terms shall apply:

"Building Developer's Package":
All information, documents and maps deemed important to the potential builder. The package will be provided by the University.

"Consider":
Used when suggesting a range of alternative design solutions that would meet a specific guideline. Compliance with the recommended options is not required.

"Encouraged":
Compliance with a guideline using this term is recommended, but is not required. This term is used for guidelines that the University believes will enhance the quality of individual projects and of the Research Park as a whole, but that are not necessarily critical to the successful execution of the project. A failure to meet such guidelines shall not be grounds for denial of design approval.

"MSDP:"
Master Site Development Plan. The Master Plan for the University of Colorado at Boulder Research Park. Basic development constraints are defined in the MSDP. The MSDP functions in many ways as a Comprehensive Plan for the Research Park.

"Open Space:"
Land that is undeveloped or developed that can support plant materials; or has decorative landscape treatment; or that may be used by visitors and tenants for recreation, circulation, or may be viewed by them. Walkways, plant beds, lawns, and terraces are examples of Open Space. Parking lot areas used for auto circulation or parking do not qualify as Open Space.

"Parcel:"
The smallest subidivision of land that is leased within the Park. A parcel is the minimum amount that a single user may occupy. In many cases, more than one parcel will be combined for development of a single building or a cluster of buildings to be used by a single user.

"Pod:"
A cluster of parcels within the University of Colorado at Boulder Research Park ("Research Park"), as defined in the Master Site Development Plan. Shared open space amenities among parcels in a Pod are encouraged in the guidelines. In some cases, a single user will occupy all the parcels in a Pod. In other cases, multiple users are expected.

"Provide:"
The action mentioned should be followed. Lack of compliance of the guideline, where it applies, may be grounds for denial of approval.

"Shall," "Will," Must," "Should Be:"
Compliance with a guideline using these terms is required for design approval. The University may use non-compliance with such a guideline as a basis for denying approval of a proposed improvement.

"University":
The University of Colorado at Boulder and its assignees.

"Use:" This and other verbs presented in the imperative mood indicate that the action should be followed, where applicable. Other examples are "Include," "Develop," and "Delineate." In addition, "should be" is often used, especially in policy statements. In these cases, the action or condition must be met.

WHO USES THE GUIDELINES

The Guidelines serve three user groups: First, they are to be used to guide **Building Developers and their designers** in planning new construction at the Research Park. A description of that process is available from the University. Secondly, the University will use the **University's Design Review Board** in their critique of each design proposal. Finally, the Guidelines apply to work executed by the **University itself**, for overall site development and infrastructure improvements.

HOW TO USE THE GUIDELINES

First, skim the entire book to become familiar with the general policies it presents. Even if the project being considered is minor, an understanding of the overall tone of the document will be useful.

Next, determine which sections are pertinent, study those in detail, and determine the relative importance of each guideline. This will require considering the context of the project. In some projects, site planning and design will be more important, in others, architectural character will have precedence. Most projects will involve portions of several sections.

The Guidelines are generally organized in a **descending order of scale**, from overall site planning concerns, to circulation issues, to buildings, site details, and then signs. When first developing overall planning concepts for a parcel, the earlier sections will be most relevant. At advanced stages of design, when architectural details and specific landscaping ideas are being developed, sections appearing later in the book will be more useful.

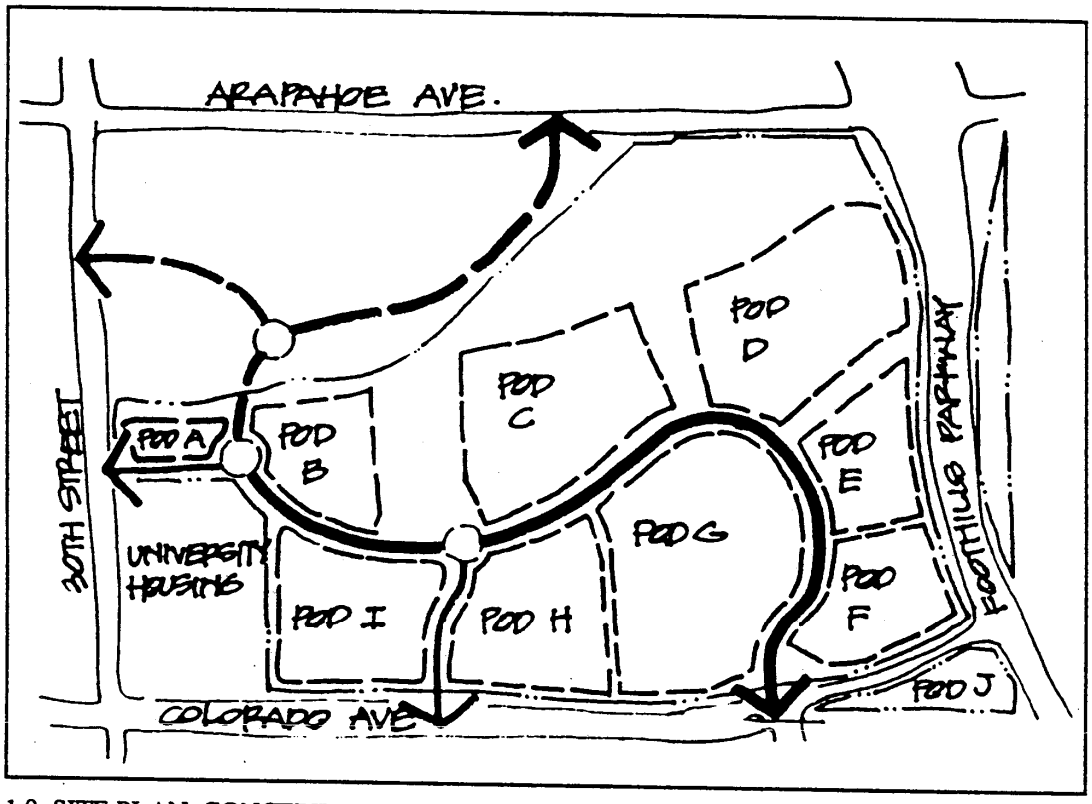
Although the document is comprehensive, keep in mind that only selected chapters will be in use at a given time. To determine which chapters are especially relevant at a particular point in planning and design development, consult the planning staff of the University.

How the Design Review Board Uses the Guidelines
The University's Design Review Board will critique designs based on the criteria in the Guidelines. The Design Review Board will use the Guidelines as a means of organizing orderly and objective review of designs and will determine the appropriateness of each proposal based on a consideration of the criteria.

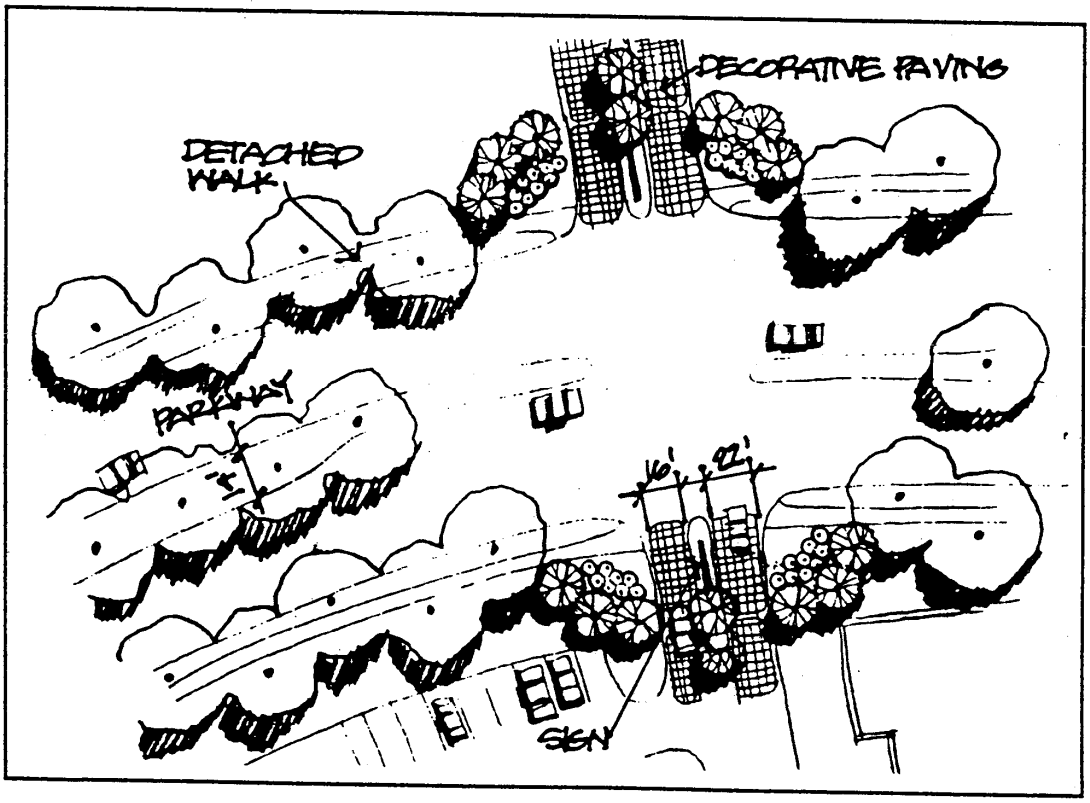
When the Board makes a recommendation about a proposed design, it will explain its decision in terms of the Guidelines.

How Many Guidelines Must Be Met
There is no set number of the guidelines that must be met. The relationship between design variables is dynamic, and each combination of elements is perceived differently. The Guidelines identify those elements that should be considered and they define the performance characteristics that those elements should have, but there is no standard formula for an appropriate design. The Design Review Board will consider the interrelationships of the design variables on a case-by-case basis.

1. SITE PLANNING DESIGN GUIDELINES



1.0 SITE PLAN CONCEPT



1.1.3 PROVIDE ENTRY DRIVES FROM MAJOR AND MINOR COLLECTOR ROADS TO EACH PARCEL OR POD WITH THESE DIMENSIONS.

1. SITE PLANNING DESIGN GUIDELINES

This section addresses broad site planning concepts for roads, parking, buildings, and utilities. Related, and more specific guidelines for parking lot layout, architectural design, landscaping, etc., are located in chapters that follow.

Site Plan Concept:
The concept for the Research Park includes concern for the image of the site along the perimeter and for external influences upon the plan. The **Circulation Concept,** which is a major element, includes planned connections with surrounding streets as well as a hierarchy of internal roads and drives.

The sites within the Research Park are served by a **Parkway** which provides primary access into the site, in a circuitous route, between Arapahoe Avenue on the north and Colorado Avenue on the south. **Secondary or local roads** provide additional access points into the Research Park along Colorado Avenue and 30th Street. Within the Park itself, vehicular access to individual building sites often occurs **between** parcels, frequently through shared entries at the parkway and secondary roadways.

A comprehensive **pedestrian system** connects individual parcels within each Pod, and in turn all of the Pods are connected into a Park-wide path system that leads to the Boulder Creek Corridor and other open space areas throughout the development.

1.1 ENTRANCES FROM PRIMARY ROADWAYS

Vehicular entrances to Pods have been designated on the MSDP and are located to reduce vehicular congestion and conflicts.

Policy:
A consistent design treatment of roadways and intersections should be used throughout the Research Park to help establish visual continuity.

Guidelines:

1.1.1 **Entrance drives to Pods.**

a. Enhance the intersections of entrance drives to Pods with the Parkway and Secondary roads with signs, accent paving, special landscaping and lighting.

1.1.2 **Entrance drives to individual parcels or buildings**

a. Provide at least one entry drive to each parcel and/or building.

b. Secondary entries may occur, and are to be designed in a manner similar to the primary entry. Paving materials, plants, signs, and lighting should match the primary entry drive, although the intensity of landscaping may be reduced.

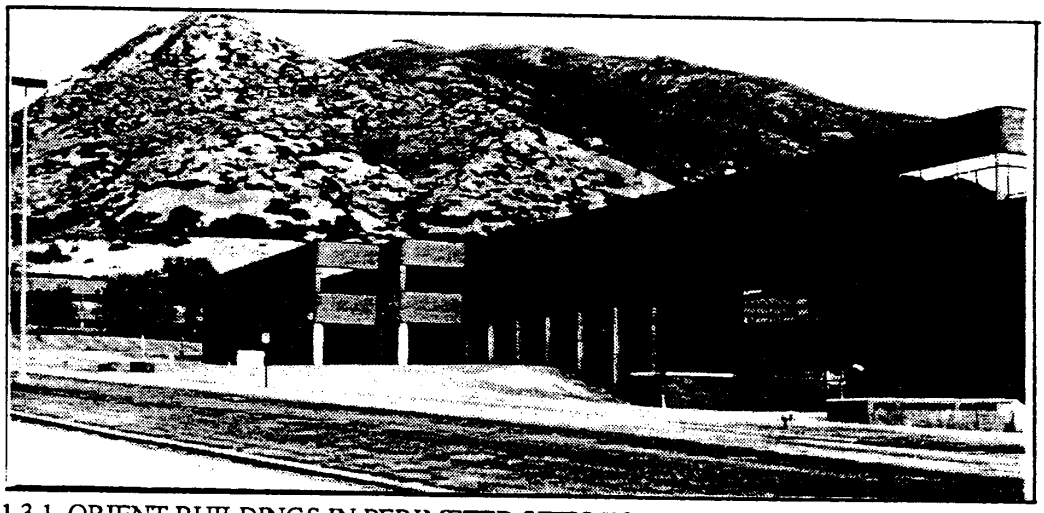
Policy:
Entry roads and drives should provide unobstructed sight lines and dimensions for safe entering and exiting movements.

Guideline:

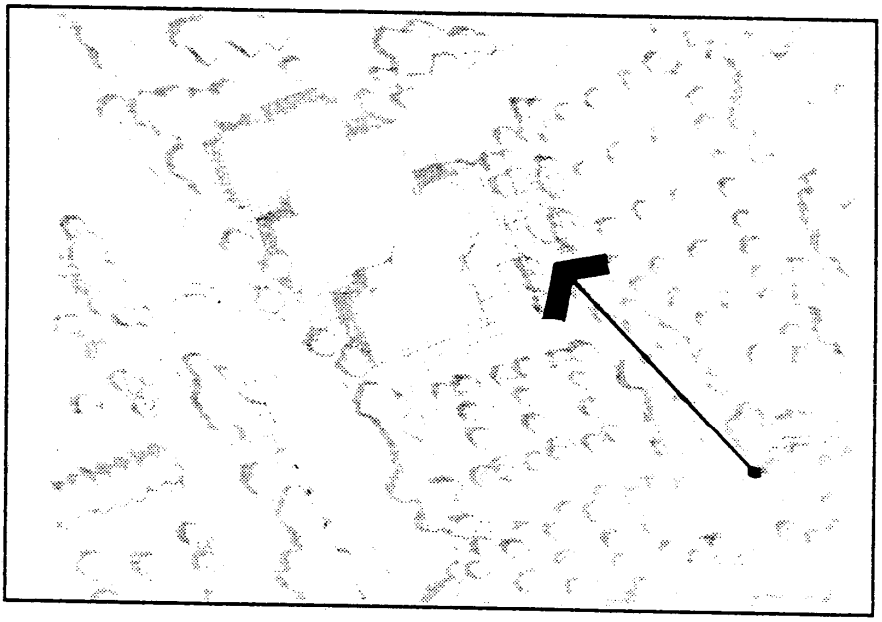
1.1.3 Provide entry drives from the Parkway and secondary roadways to each parcel or pod with these dimensions:

a. Provide one sixteen-foot (16.0') wide entry and two eleven-foot (11.0') wide exit lanes. Include an ten foot (10.0') wide median a minimum of forty feet (40.0') long.

b. Planting in adjacent areas should not restrict views for turning. See Landscape Guidelines, Section 6.1.



1.3.1 ORIENT BUILDINGS IN PERIMETER SITES TO ALLOW VIEWS THROUGH AND INTO THE RESEARCH PARK.



1.3.4 POSITION ENTRIES TO BUILDINGS SO THEY ARE IMMEDIATELY IDENTIFIABLE FROM INTERIOR DRIVEWAYS.

1.1.4 Where feasible, orient new parking lots to align with others nearby such that connecting access lanes can be efficiently located.

1.2 REQUIRED PARKING RATIOS

Policy:
In general, parking should be provided in numbers sufficient to meet the projected parking needs of each user. The overall average parking ratio for the entire Research Park shall be one car for every 300 square feet of gross floor area of each building.

Guidelines
1.2.1 The appropriate parking requirement for each project will be determined on a case-by-case basis, however as a general guideline use the following minimum ratios:

a. Laboratory and research space, corporate and multi-tenant offices: 1 space/300 square feet of floor area.
b. Conference Center/Hotel: 1 space/room plus 1 space per employee.
c. Ancillary Retail Uses: 1 space/250 square feet of floor area.
d. Restaurant or Auditorium: 1 space/3 seats.

The specific parking requirement for each building will be determined on a case-by-case basis, using the minimum ratios as a guide. Where expansion of a building is planned, reserving appropriate amounts of land for additional parking, or making provisions for structured parking may be required.

1.2.2 Where opportunities exist for shared parking between different uses with staggered peak parking demand every effort shall be made to take advantage of this opportunity to reduce the total number of parking spaces within each pod.

1.2.3 Compact car parking may be provided as follows:
a. For parking areas containing up to and including 100 spaces, a maximum of 40% of the spaces may be compact.
b. For parking areas in excess of 100 spaces a maximum of 60% of the total spaces may be compact.

1.2.4 Parking Spaces for Disabled Persons
a. For parking areas containing up to and including 100 spaces, a minimum of 4% of the spaces must be provided for the disabled.
b. For parking areas in excess of 100 spaces, a minimum of 2.5% of the spaces must be provided for the disabled.

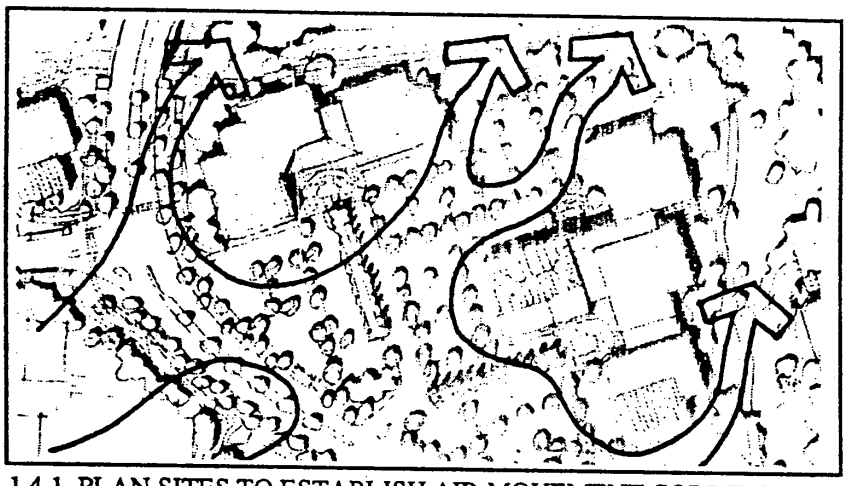
1.3 PRIMARY BUILDING SITING AND ORIENTATION

Policy:
Buildings should be sited so that the character of proposed land forms is enhanced, while site drainage problems are minimized.

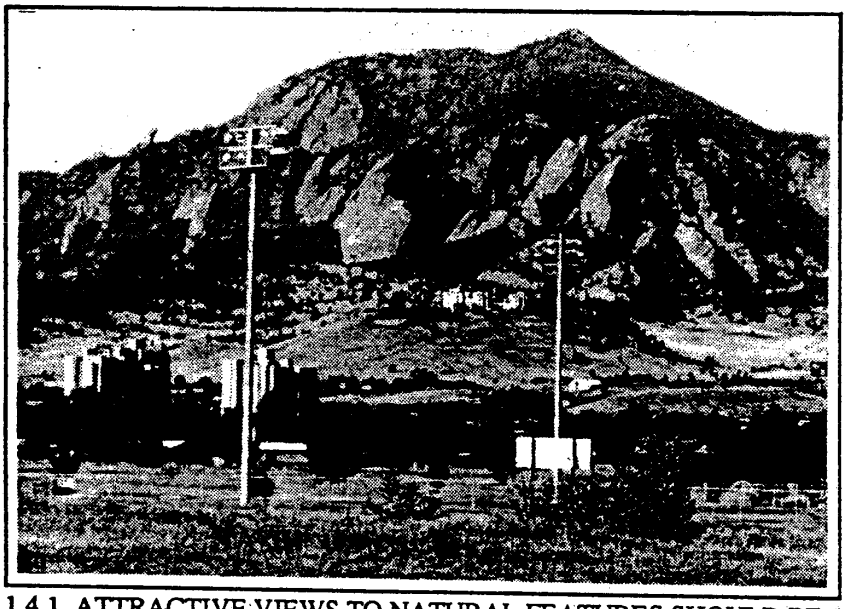
Guidelines:
1.3.1 Orient buildings in perimeter sites to allow views through and into the Research Park.

1.3.2 In general, locate buildings on higher ground; in order to meet UD & FCD requirements, and facilitate positive drainage away from foundations.

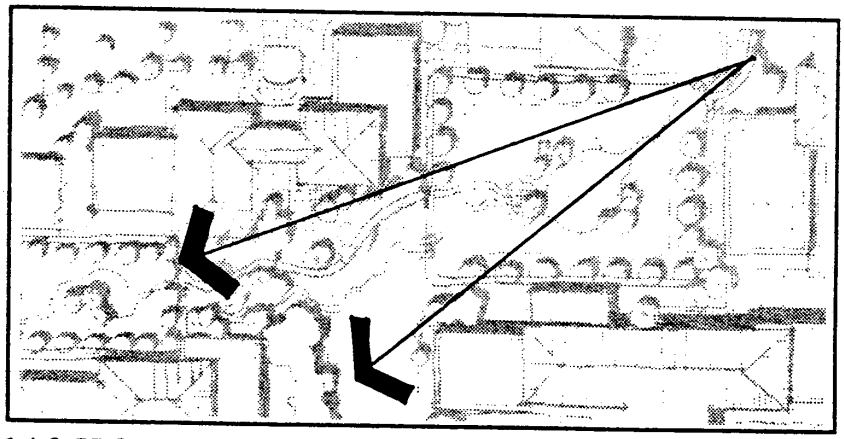
1.3.3 Develop building forms that compliment the landform and which minimize cut and fill.



1.4.1 PLAN SITES TO ESTABLISH AIR MOVEMENT CORRIDORS.



1.4.1 ATTRACTIVE VIEWS TO NATURAL FEATURES SHOULD BE PRESERVED.



1.4.2 PROTECT VIEW CORRIDORS, AS DEFINED IN THE OPPORTUNITIES AND CONSTRAINTS DIAGRAM OF THE MASTER SITE DEVELOPMENT PLAN.

1.3.4 Position entries to buildings so they are immediately identifiable from the interior driveways.

1.3.5 Secondary entrances should be conveniently accessible from parking and delivery areas which serve the buildings.

1.4 AIR MOVEMENT AND VIEW CORRIDORS

Policy:
Careful consideration should be given to the facilitation of air movement throughout the Research Park in order to maintain an adequate air quality level.

Guideline:
1.4.1 Plan sites to establish **air movement corridors.** Develop buildings and locate landscaping and parking areas to facilitate the maximum possible air flow through the Research Park and minimize the potential for air stagnation.

Policy:
Attractive views to features such as Boulder Creek, the Flatirons, and the Continental Divide are amenities that are to be shared by all users. Maximizing view opportunities from roads, open space corridors and from building interiors of these features is encouraged.

Guideline:
1.4.2 Protect **view corridors**, as defined in the opportunities and constraints diagram of the Master Site Development Plan. Align roads, driveways open space corridors and pedestrian walkways with established view corridors.

1.5 FLOOR AREA REQUIREMENTS

Policy:
The ratio of total gross building floor area to overall land area should be used as a measure of monitoring overall density, while allowing flexibility for individual sites.

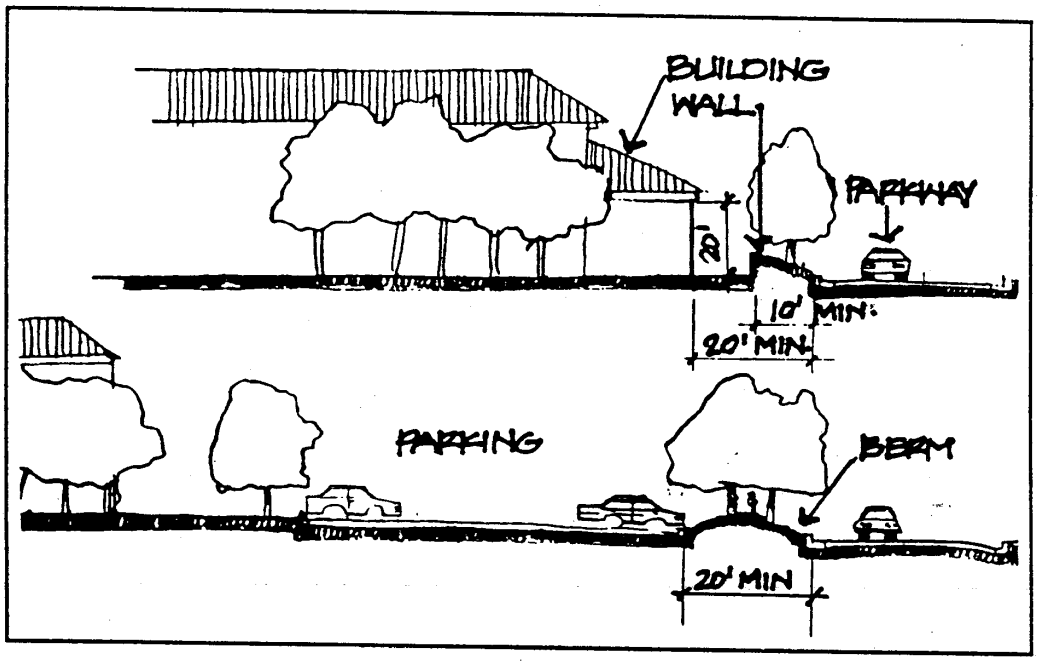
Guidelines:
1.5.1 The total Gross Floor Area for the entire Research Park site shall not exceed 1.6 million square feet.

1.5.2 Maximum floor areas for each Pod are defined in the MSDP and are provided in the Building Developer's Package. A baseline FAR of .38 will be allowed within each pod. An additional floor area allowance will be provided in exchange for other design considerations evaluated on a case-by-case basis.

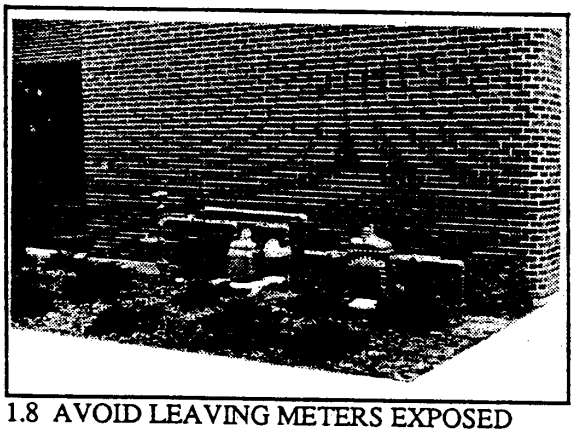
1.6 SITE COVERAGE REQUIREMENTS

Policy:
Impervious coverage (building, parking, driveways, etc.) of the entire Research Park site should be minimized. The maximum site coverage shall constitute 55% of the Research Park site. The balance of the site shall be in common and private open space.

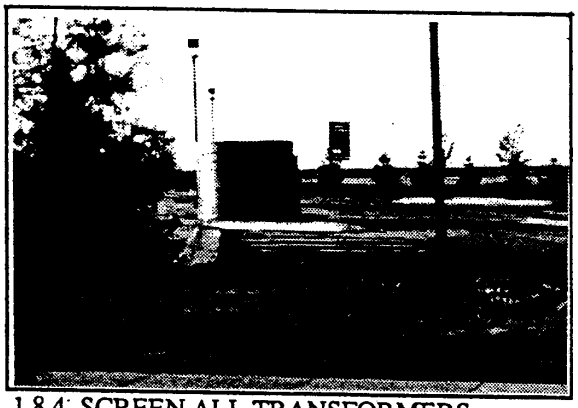
Guidelines:
1.6.1 The individual site coverage limit for impervious surfaces in each parcel and for each Pod is limited to a maximum of 70% of the gross land area.



1.7 SETBACK REQUIREMENTS



1.8 AVOID LEAVING METERS EXPOSED WHERE VISIBLE TO THE PUBLIC.



1.8.4 SCREEN ALL TRANSFORMERS, SWITCHING BOXES AND OTHER UTILITY CABINETS FROM VIEW.

1.8.4 SCREEN ALL TRANSFORMERS, SWITCHING BOXES AND OTHER UTILITY CABINETS FROM VIEW.

1.9.3B CONCEAL ALL MATERIALS , SUPPLIES TRUCKS OR EQUIPMENT STORED ON SITE.

a. No more than 40% of the gross land area may be covered with buildings.
b. No more than 40% of the gross land area may be covered with surface parking lots or parking structures.

1.6.2 The minimum amount of open space provided within each development parcel or cluster of parcels is 30%. Open space can include areas such as sidewalks and hardscaped plazas.

1.7 SETBACK REQUIREMENTS

Policy:
The Research Park should convey an urban, campus-like character from all major roadways. All buildings should be set back from interior and perimeter roads in sufficient dimensions to create a landscape zone between the buildings, parking and the street. Varying building set-backs should be encouraged to enhance visual interest.

Guidelines:
1.7.1 **Interior Setbacks:** As a minimum, set back all buildings, retaining walls, and parking from the back of curb of the interior parkway and secondary roadways as follows:

a. Buildings: Set back all buildings a minimum of one foot (1.0') for every one foot (1.0') of building height, but never less than twenty feet (20.0').
b. Retaining Walls: Set back retaining walls a minimum of 10.0.'
c. Parking: Set back parking areas a minimum of twenty feet (20.0') and provide adequate screening and buffering measures which incorporate berms, intensive landscaping and/or grade separation. See Landscape Guidelines, Section 6.2.5 for specific visual buffering techniques.

1.7.2 **Perimeter Building and Parking Setbacks** along Foothills Parkway, Colorado Avenue and 30th Street.

a. Setback all buildings a minimum of one foot (1.0') for every one foot (1.0') of building height, but never less than the perimeter setback defined by the City of Boulder Land Use Regulations.
b. Setback all parking areas the minimum dimension identified on the Master Site Development Plan.

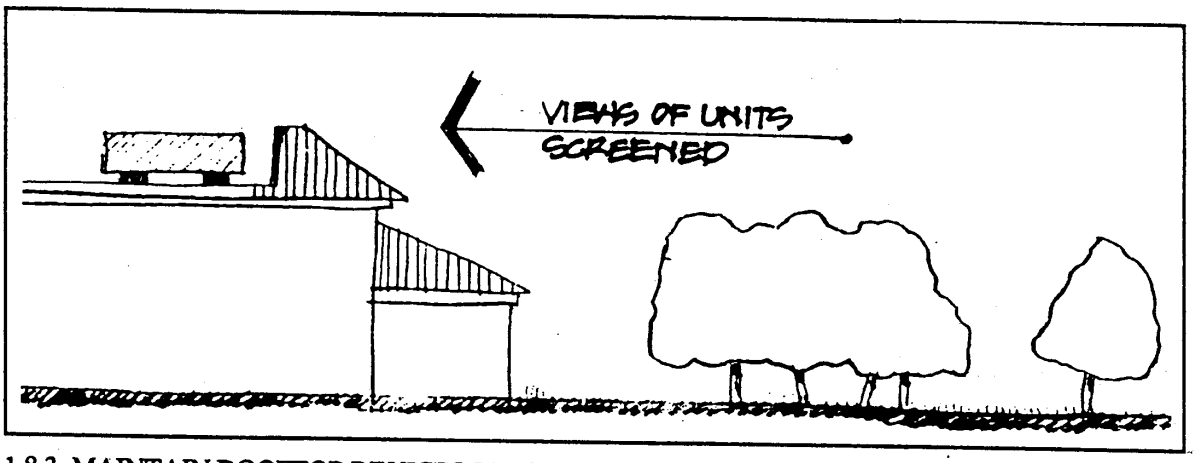
1.7.4 Special setback requirements may also apply to special building types. These may be negotiated.

1.8 UTILITIES AND COMMUNICATION DEVICES

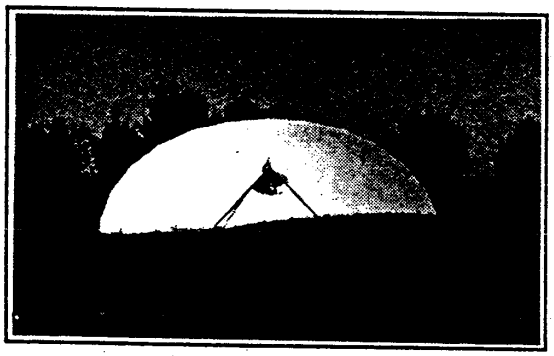
Policy:
The visual and auditory impacts of utilities, data transmission dishes, towers microwaves and related services should be minimized in all development.

Guidelines:
1.8.1 Install all utility lines underground. Design and install utilities to minimize disruption of off-site activity during construction or maintenance.

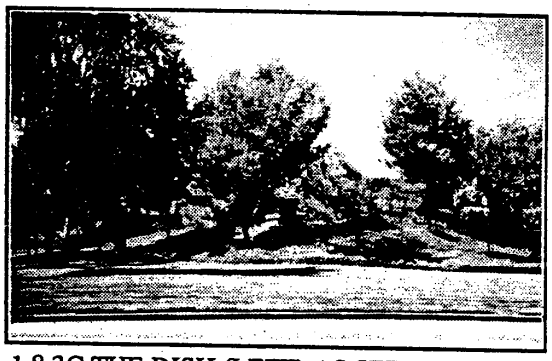
1.8.2 Temporary overhead power and telephone facilities are permitted during construction only.



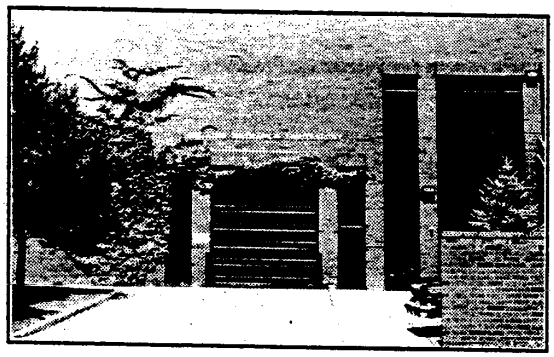
1.8.3 MAINTAIN ROOFTOP DEVICES BELOW BUILDING'S HIGHEST ARCHITECTURAL ELEMENT SO THEY ARE NOT VISIBLE WITHIN A HORIZONTAL LINE OF SIGHT.



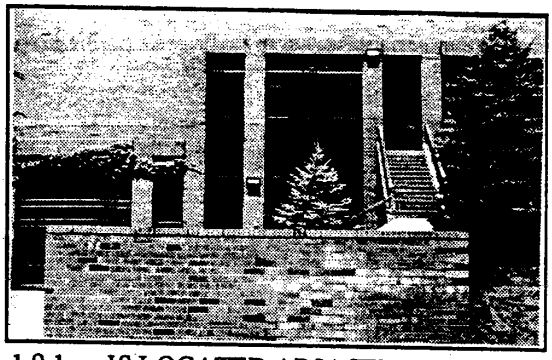
1.8.3C SCREEN GROUND MOUNTED DEVICES.....



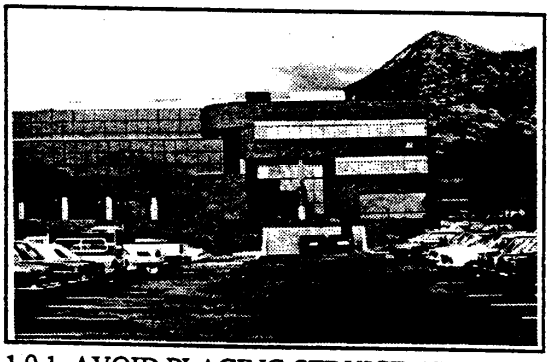
1.8.3C THE DISH (LEFT) AS SEEN FROM THE STREET.



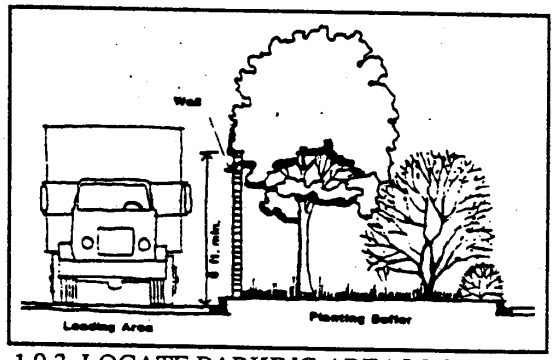
1.9.1 THIS WELL INTEGRATED LOADING DOCK....



1.9.1 ... IS LOCATED ADJACENT TO SECONDARY ACCESS.



1.9.1 AVOID PLACING SERVICE AREAS IN MAJOR PUBLIC USE AREAS.



1.9.3 LOCATE PARKING AREAS FOR EQUIPMENT TRUCKS. TRAILERS,.....

1.8.3 All data transmission and receiving telecommunication service will be provided in a central location by the developer. Individual roof-mounted or ground-mounted data transmission and receiving installations are not permitted on individual parcels. Exceptions may be allowed where special user security or technical needs cannot be met with a central facility. In such a case, these guidelines shall apply:

a. Screen from view any device for transmission or reception of communication signals.
b. Maintain rooftop devices below the building's highest architectural element so they are not visible within a horizontal line of sight.
c. Screen ground-mounted devices from view from adjacent streets and properties and design them to integrate with the site with subdued use of colors that blend in with their surroundings.

1.8.4 Screen all transformers, switching boxes and other utility cabinets from view. Use plant materials or architectural screens.

1.8.5 **Transformers** are noisy. Careful consideration of transformer location is needed to protect building users and occupants. Locate transformers away from major pedestrian routes and outdoor seating areas. Screen them where feasible. See guidelines Section 6.2.6.

1.8.6 Sound levels from transformers, air condensor units and other equipment should not exceed 55db(A) at the property line. See guidelines for buffers, Section 6.2.7.

1.8.7 Where feasible, paint all utility structures in the University's standard sandy-beige color.

1.8.8 All structures at ground level, such as manhole covers and grates, should be flush with the pavement to avoid tripping pedestrians. Grates should be spaced 1/2" or less to allow passage of bicycle and wheelchair tires.

1.9 SERVICE, DELIVERY AND STORAGE AREAS

Policy:
Service, delivery and storage areas can be visually obtrusive. The visual impact of service and delivery areas should be minimized, especially views of such areas from public ways and along designated view corridors. Careful design of screening and placement of these facilities must be planned.

Guidelines:
1.9.1 Locate loading docks and service areas so that views from adjacent streets, properties, pedestrian pathways, and open space corridors are minimized.

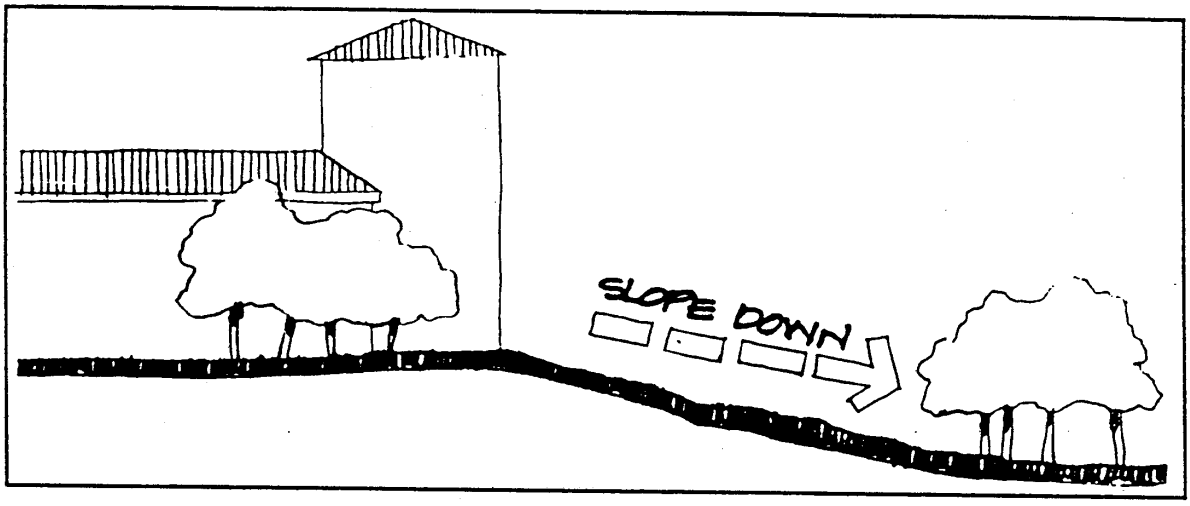
1.9.2 Locate loading, service and delivery areas so they will not encroach into any setback areas.

1.9.3 Locate parking areas for equipment trucks, research trailers and service vehicles away from public parking lots and major pedestrian circulation routes and screen them architecturally and with landscaping:

a. Make **enclosures** for loading docks and service areas a minimum of six (6) feet high, noncombustible, and constructed of the same materials and finishes as the main building.
b. **Conceal** all materials, supplies, trucks or equipment stored on a site inside a closed building or behind a visual screen.

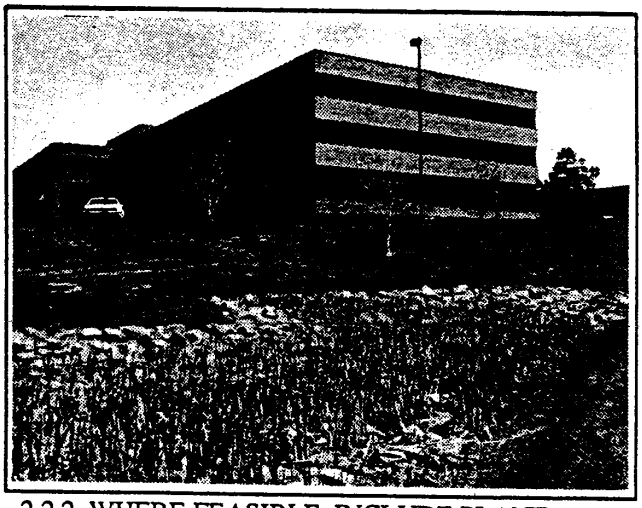
1.9.4 Clearly identify service entrances with signs to discourage the use of main entrances for deliveries.

2. STORMWATER MANAGEMENT/DRAINAGE DESIGN GUIDELINES



2.0 PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS.

2.2. AVOID HARD CHANNEL DESIGNS.



2.2.2 WHERE FEASIBLE, INCLUDE PLANT MATERIALS IN DETENTION / RETENTION PONDS.

2. STORMWATER MANAGEMENT/DRAINAGE DESIGN GUIDELINES

Stormwater/Drainage Concept:
Stormwater management and site drainage are intended to be designed such that they are visual and recreational amenities whenever feasible. First and foremost, however, they are conceived to minimize impacts downstream. Two major water courses run through the site: Boulder Creek and Skunk Creek. All planning within the site should consider the impacts on the resources.

2.1 WATER QUALITY CONTROL DESIGN

Policy:
Storm water and snow melt from roof tops, paved areas and lawns carry plant debris, soil particles and dissolved chemicals. To protect area surface water, land users must employ special management and engineering practices to clean storm waters. The overall stormwater management design will accommodate all 2-year 6-hour storms within the boundary of the Research Park. Retention will occur within individual sites, pods or within regional ponds. In general, each pond should retain the first 1.6 inches of rainfall from a storm within the pond's tributary basin. These features should be designed to be attractive year-round.

Guidelines:
2.1.1 Sweep all parking areas with power vacuum a minimum of once every four weeks and after each snow storm.

2.1.2 Where stormwater ponds are needed, design of these structures as wet ponds to detain and retain water where feasible.

2.1.3 Enhance the landscape treatment around these structures.

2.1.4 Storm water will not be allowed to drain into either Boulder Creek or Skunk Creek without first going through a detention/retention pond and a grassy swale filter.

2.1.5 Accepted methods for detention pond design should be utilized to enhance water quality. Design criteria and recommendations of the American Society of Civil Engineers (ASCE), the UD&FCD, the City of Boulder, and the American Society of Landscape Architects (ASLA) should be considered for water quality enhancement.

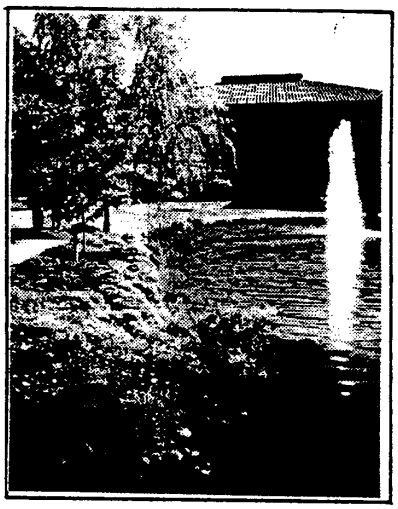
2.2 DRAINAGE CRITERIA

Policy:
Site drainage should be designed to minimize water collection at building foundations, entrances and service ramps.

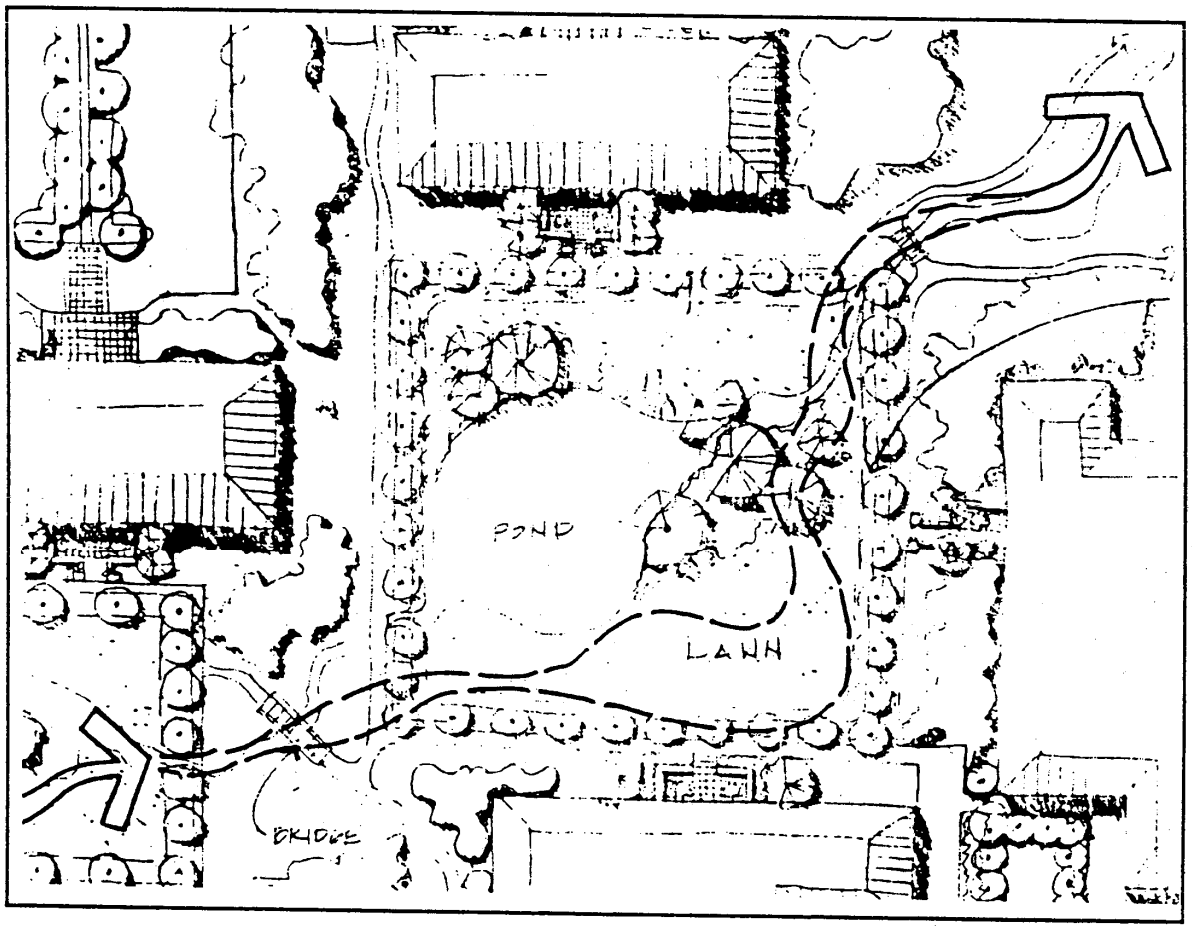
Guidelines:
2.2.1 Provide positive drainage away from all buildings in accordance with accepted drainage practice.

2.2.2 Grassy swales remove pollutants from storm water and provide for the attenuation of peak flows due to storage capacity and water velocity reduction. The utilization of properly designed grass lined swales is required as a method to convey storm water to ponds.

2.4.1 DESIGN DETENTION/RETENTION PONDS AS YEAR ROUND AMENITIES WHICH ARE FULLY INTEGRATED INTO THE OVERALL DESIGN OF THE SITE OR POD.



2.4.2 INCORPORATING FOUNTAINS AND WATER SCULPTURES INTO THE LANDSCAPE DESIGN IS ENCOURAGED.



2.5.1 ALTERNATIVE STREAM ALIGNMENTS MAY BE ACCEPTABLE IF ENTRY AND EXIT POINTS FROM THE SITE REMAIN THE SAME.

2.3 DETENTION/RETENTION

Policy:
Use detention and retention ponds to drain sites, buildings and parking lots.

Guidelines:
2.3.1 Rooftop detention is discouraged.

2.3.2 Design ponds to retain the 2 year, 6 hour anticipated run-off, also provide 100 year detention for release at or below the historic rates.

2.3.3 Provide an easement for maintenance vehicle access to the pond's edge.

2.4. WATER AMENITIES

Policy:
Where feasible drainage facilities should be designed with water and riparian vegetation as year-round features.

Guidelines:
2.4.1 Design detention/retention ponds as year-round amenities which are fully integrated into the overall design of the site or pod.

a. Provide pedestrian access to water amenities.
b. Orient views to water amenities from courts, trails and building entrances.

2.4.2 Incorporating fountains and water sculptures into the landscape design is encouraged, for aesthetic reasons, as well as for recirculation and aeration of water.

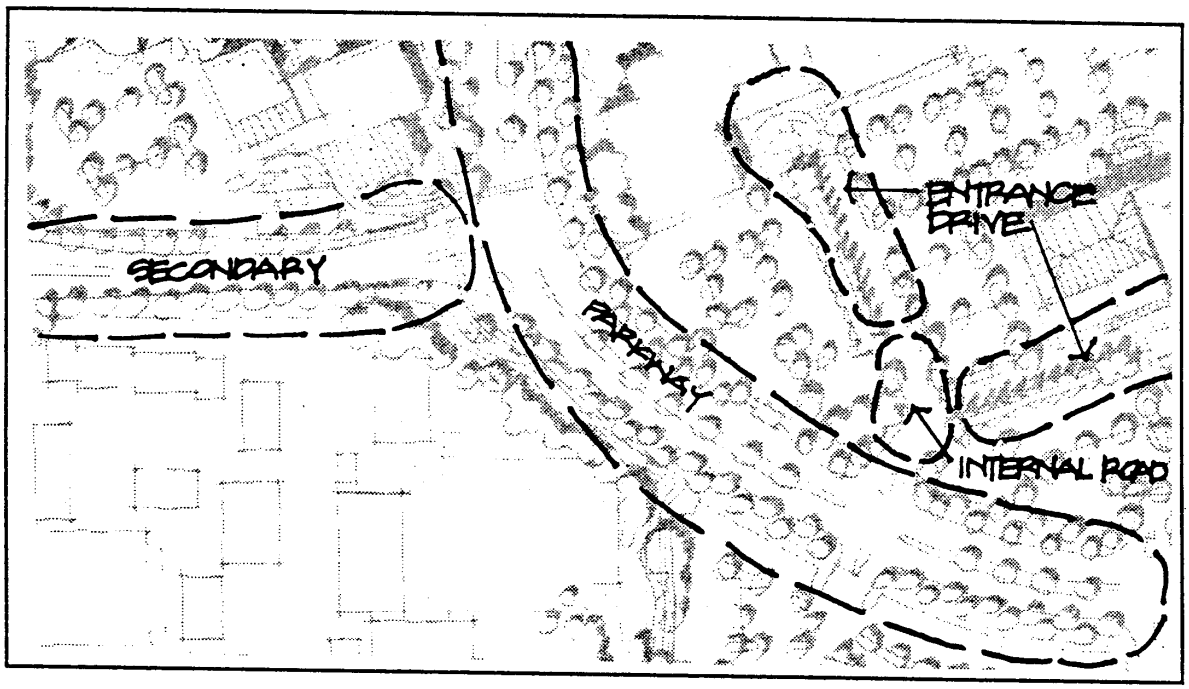
2.4.3 Line aesthetic water ponds with impervious material to minimize water loss and weed growth.

2.5 WATER ALIGNMENTS

Policy:
Waterways are planned to run through the Park as amenities. These shall be designed as a comprehensive, continuous system. Flexibility in the alignment of individual water courses may be considered as long as the continuity of the system is maintained.

Guideline:
Alternative stream alignments may be considered if connecting points to segments of water ways on adjacent parcels are maintained.

3. VEHICULAR CIRCULATION DESIGN GUIDELINES



3.1.1 STREET CATAGORIES.

3. VEHICULAR CIRCULATION DESIGN GUIDELINES

Vehicular Circulation Concept: Safe, convenient vehicular circulation is a paramount feature of the Research Park plan. Roads are planned to emphasize view corridors, and are laid out in serpentine sections to create visual interest. Coordinated landscaping along major roads and at driveway entrances is stressed.

This section addresses basic planning concepts for the arrangement of streets and roads. Detailed design guidelines are located in Section 6, Landscape Design. Engineering standards for streets and roads are also reviewed by the University; those standards are available as part of the Building Developer's Package.

3.1 STREET HIERARCHY

Policy:
There is a functional hierarchy to streets and drives in the Research Park, and this hierarchy shall be expressed in the street design and landscape treatment along the street.

Guidelines:

3.1.1 The street categories are:

a. Parkway: The main serpentine street running through the Research Park.
b. Secondary Road: Roads that connect the Parkway with City streets at the perimeter of the Park.
c. Internal Drive: A road shared by more than one user for access to building parcels.
d. Entrance Drive: A road providing direct access to individual building drop-off and parking areas.
e. Service Drive: A road providing access to loading and waste pick-up areas.

Design street and private driveway sections for each street category according to dimensions specified in Section 1.1 of these Guidelines. Also refer to the illustrations accompanying these guidelines.

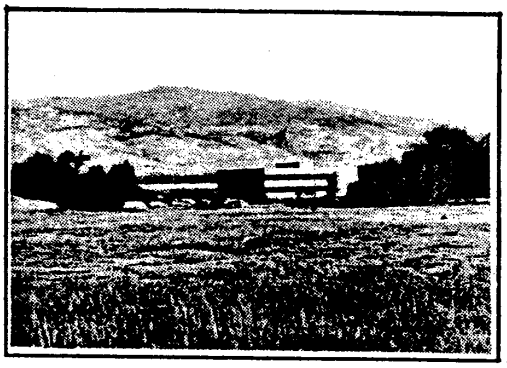
3.2 ENTRANCE TO POD/PARCEL FROM PARKWAY OR SECONDARY ROADWAYS

Policy:
Each entrance to a pod or parcel from a road should read as a "gateway" to the pod or parcel served. The design elements used should be visually interesting and consistent with other streetscape materials used in the parcel.

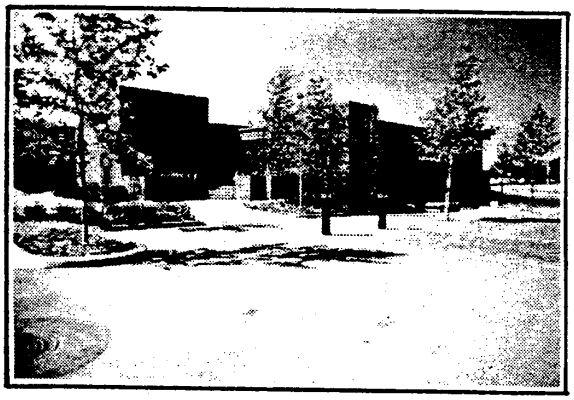
Guidelines:

3.2.1 Comply with the "Landscape Design Guidelines" in Section 6, Landscape Design for Entry Drives.

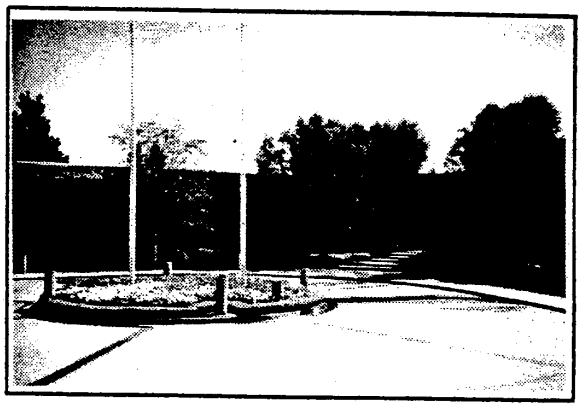
3.2.2 Paving at curb cut: In order to achieve a sense of entry and to encourage reduced speeds at the entrance, use decorative paving material at entry drive intersections with roadways. A uniform decorative paver, specified by the University, shall be used throughout the Research Park at entry drives to pods and individual parcels.

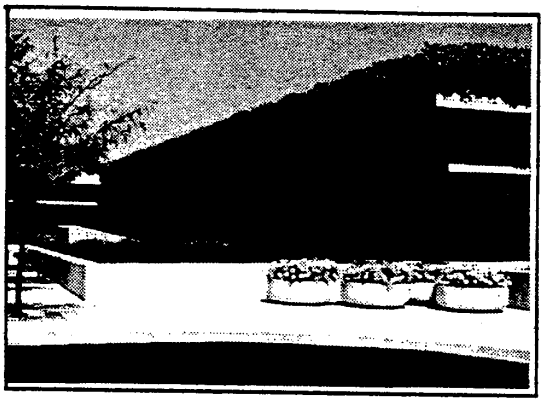


3.3.1 ORIENT STREETS AND DRIVES TO HIGHLIGHT VIEWS.
3.4.2 USE A TEXTURED PAVING MATERIAL TO DESIGNATE A DROP OFF LANE.



3.4.1B PROVIDE A CLEAR SEPARATION OF VEHICULAR TRAFFIC BETWEEN DROP - ZONES AND ACCESS TO EITHER A PARKING LOT OR PARKING STRUCTURE.





3.4.1C LOCATE DROP-OFF LANES SO THEY WILL NOT OBSTRUCT MOVING TRAFFIC.
3.4.4 USE A HIERARCHY OF PLANT MATERIAL IN ENTRANCE DESIGN.

3.2.3 Lighting at entry drives: Install lighted bollards or light standards along both sides of each driveway entrance.

3.2.4 Building address: See Sign Design Guidelines in Section 10. (Note that a special building address system is used by the Park).

3.3 INTERNAL STREET ALIGNMENT

Policy:
Streets and roads should reinforce the perception of the natural and man-made land forms and amenities.

Guidelines:
3.3.1 Where feasible, orient streets and drives to highlight views of significant natural features.

3.3.2 Design streets and parking to follow the topographic contours as much as possible to minimize cut-and-fill.

3.4 DROP-OFF AREAS

Policy:
Passenger drop-off areas should be incorporated in all projects and should provide safe, convenient use.

Guidelines:
3.4.1 Provide a separation between driveway curb cuts and drop-off areas to minimize turning conflicts.
a. Provide a clear separation of vehicular traffic between drop-off zones and access to either a parking lot or parking structure.
b. Design drop-off lanes so as not to obstruct traffic flow when motorists are stopped to discharge passengers.

3.4.2 Use a textured paving material that is distinguishable from the travel lane at the drop-off.

3.4.3 Consider using signs to indicate "drop-off zone" or "passenger loading only".

3.4.4 Use a hierarchy of plant materials in entrance designs. See Landscape Guidelines, Section 6.

3.5 EMERGENCY AND UTILITY ACCESS

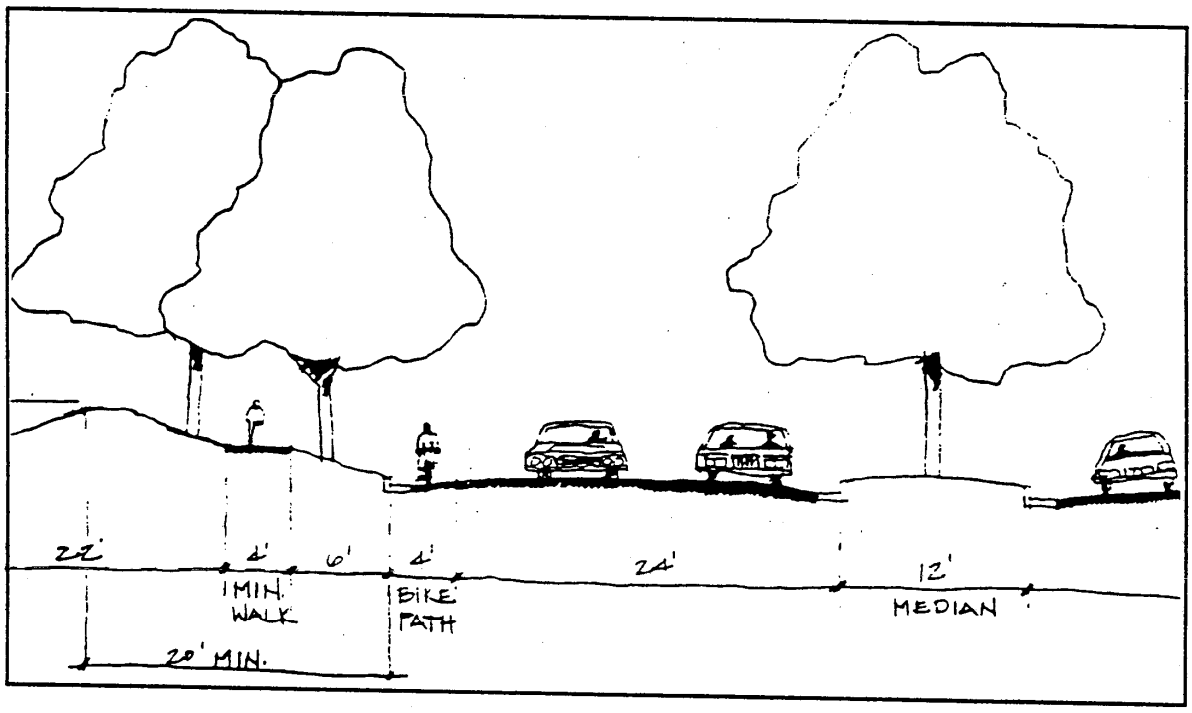
Policy:
Fire protection for the Research Park will be administered by the City of Boulder Fire Department. Emergency vehicles should be able to reach the buildings on clearly designated routes.

Guidelines:
3.5.1 Where feasible, provide unobstructed access ways for fire suppression, police, ambulance and other emergency vehicles to all sides of the building (capable of supporting these vehicles).

3.5.2 Meet all City of Boulder Fire Department regulations in the design of emergency access to buildings.

3.5.3 Provide unobstructed access to all utilities (manholes, etc.).

3.5.5 Avoid the creation of "blind areas" that cannot be patrolled by police or security staff.



3.7.4 ON STREET BICYCLE LANES SHALL BE PROVIDED ALONG THE PARKWAY.

3.5.6 Where feasible connect emergency routes between adjacent properties.

3.6 MASS TRANSIT FACILITIES

Policy:
The Research Park development will encourage the use of RTD and the incorporation of a University shuttle service with convenient arrangement of mass transit access and shelters. Mass transit stops are anticipated along the Parkway. In addition, some building clusters within a pod may generate such high volumes of automobile traffic that additional stops may be required in these areas. In such cases, these guidelines apply:

Guidelines:
3.6.1 The bus shelter design shall be provided by the University.

3.6.2 Locate bus shelters close to significant clusters of buildings. Provide a concrete pad in front of the bus shelters.

3.7 ENERGY CONSERVATION/AIR QUALITY CONTROL

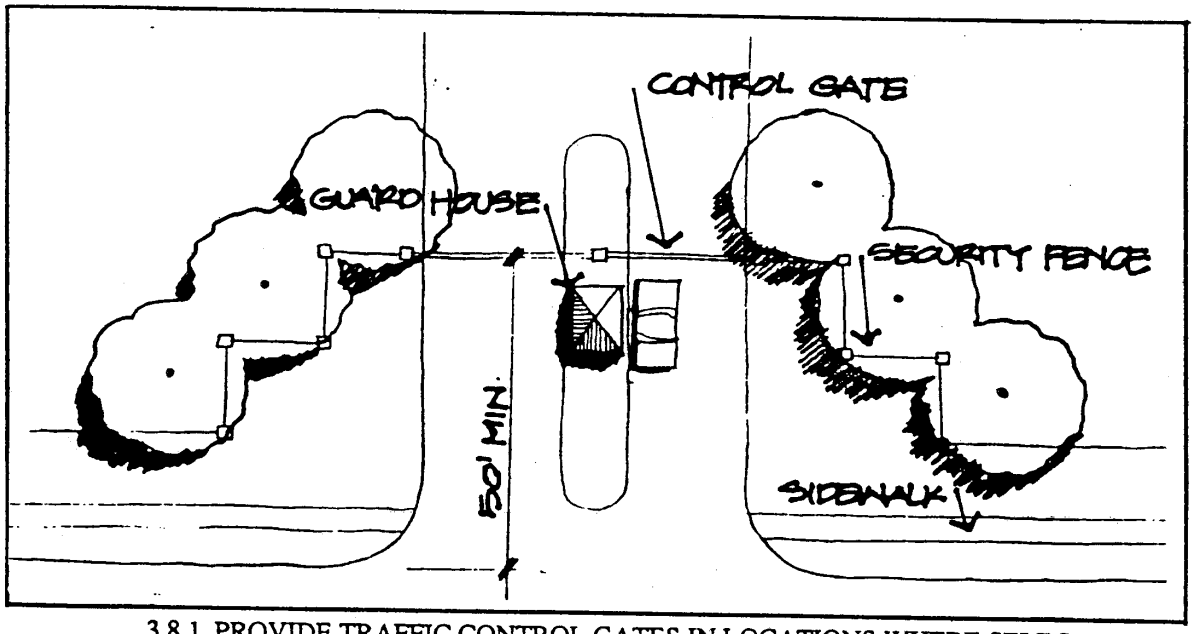
Policy:
A significant percentage of the air pollution generated by a development such as the Research Park will be from automobile emissions. Each site development should encourage alternative modes of transportation for employees in order to mitigate this air pollution source.

Guidelines:
3.7.1 All employers are encouraged to offer incentives i.e. preferential parking to employees for ride sharing or participating in a van pooling program.

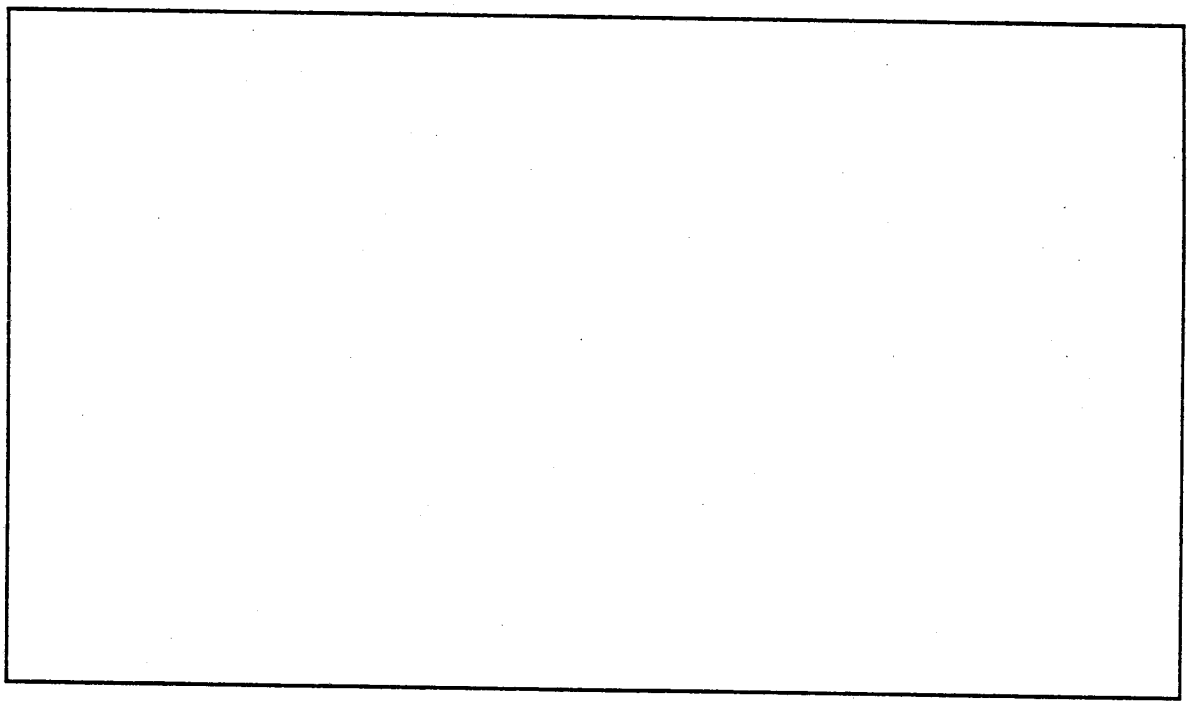
3.7.2 All employers are encouraged to provide **flexible, staggered work hours** to reduce the short-term, high concentrations of pollutants.

3.7.3 Facilities within the Research Park are encouraged to accept truck pick-up and **deliveries** during off-peak periods.

3.7.4 **On-street bicycle lanes** shall be provided along the Parkway. Make connections between on-street and off-street systems must be clear and convenient.



3.8.1 PROVIDE TRAFFIC CONTROL GATES IN LOCATIONS WHERE SELECT ENTRY IS DESIRED.



3.8 GUARD HOUSES AND GATES SHOULD BE LOCATED TO BE AS VISUALLY UNOBTRUSIVE AS POSSIBLE.

3.8 RESTRICTED ACCESS DRIVES

Policy:
Security check points may be necessary for some users, to monitor access to a site overall or to individual buildings. Guard houses and gates should be located to be as visually unobtrusive as possible.

Guidelines:

3.8.1 Provide electric traffic **control gates** in locations where selected entry is desirable.
   a. Furnish adequate **queuing space** for cars waiting to enter or leave security control areas.
   b. Locate check points in areas that **minimize crossing conflicts** with major bicycle and pedestrian routes where queuing vehicles may restrict visibility or cause hazardous conditions.

3.8.2 Provide **shelters** at control points where it is necessary to monitor access to streets or parking lots. See Section 7.16.2.

3.8.3 Consider using contrasting pavement designs to identify stopping areas at check points.

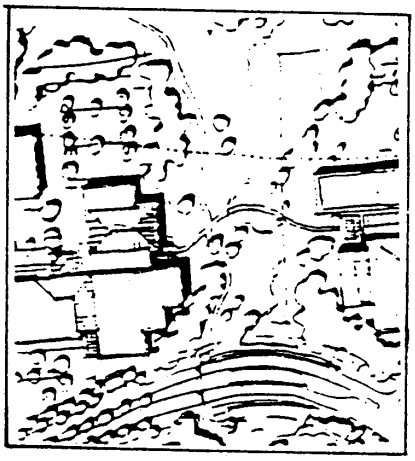
4. PEDESTRIAN AND BICYCLE CIRCULATION DESIGN GUIDELINES

4.1.1 GATEWAYS ARE ENCOURAGED AS A MEANS OF DEFINING PEDESTRIAN WAYS.

4.1.4 DELINEATE AREAS OF INTENSE PEDESTRIAN ACTIVITY WITH ACCENT PAVING AND SPECIAL LIGHTING

4.1.4 DELINEATE AREAS OF INTENSE PEDESTRIAN ACTIVITY WITH ACCENT PAVING AND SPECIAL LIGHTING.

4.2.3 PLAN RECREATIONAL TRAILS TO CONNECT WITH SITE-WIDE TRAIL SYSTEM.



4.1.2 PROVIDE LINKS TO ALL COMMON OPEN SPACES AND CONNECTIONS TO RECREATIONAL FACILITIES.

4. PEDESTRIAN & BICYCLE CIRCULATION DESIGN GUIDELINES

A special feature of the Research Park is its integration of pedestrian and bicycle systems. Pathways are planned to connect all pods and parcels within the Park with the City's bikeway system. Within the Park, the pedestrian system connects individual parcels with a series of open space routes that feed into the Boulder Creek path system. These circulation routes are emphasized as recreational amenities and as alternatives to automobile circulation.

4.1 OVERALL PEDESTRIAN & BICYCLE CIRCULATION

Policy:
Pedestrian spaces and routes should be designed to invite walking throughout the Research Park, and routes should be integrated to form a comprehensive circulation system providing convenient access to all portions of the site. Refer to the pedestrian circulation element of the Master Site Development Plan.

Guidelines:
4.1.1 Provide safe and well-identified connections to the primary pedestrian and bicycle paths within the Research Park in the design of the pedestrian circulation within each Pod, and within each building parcel.

4.1.2 Provide pedestrian links to all common open space and connections to recreational facilities within the Research Park.

4.1.3 Delineate areas of intense pedestrian activity with accent pavement and special lighting. Treat as formal or informal plazas.

4.1.4 Delineate areas of pedestrian and bicycle/vehicular interface with accent pavement and appropriate signage to alert drivers to potential conflicts.

4.1.5 Where feasible, direct pedestrian access and walks away from the north sides of buildings where snow and ice build-up occurs.

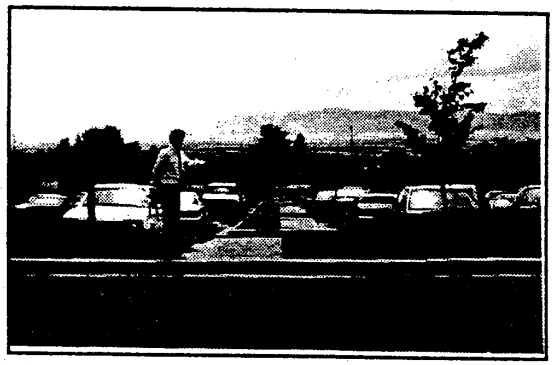
4.2 RECREATIONAL TRAILS

Policy:
Recreational trails should be planned to minimize conflicts with other modes of circulation and should be engineered to meet performance characteristics of the identified users. In general, pedestrian and bicycle trails should be separate.

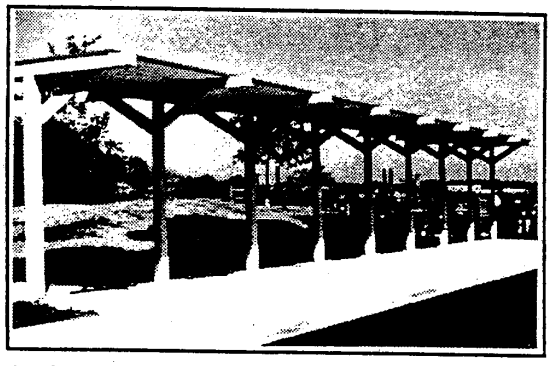
Guidelines:
4.2.1 Where jogging trails are planned, use gravel fines.

4.2.2 Where bikeways are planned in conjunction with pedestrian ways, distinct from pedestrian ways, use colored concrete, in conformance with paving standards in use at the main campus.

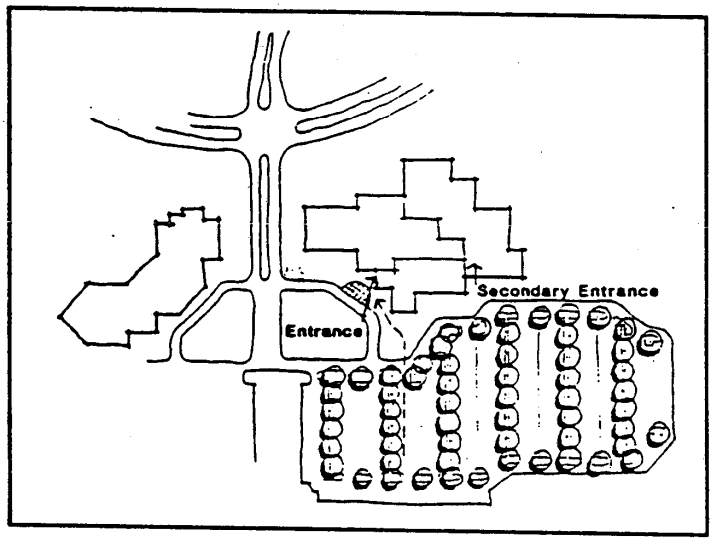
4.2.3 Plan recreational trails to connect with site-wide trail systems as defined in the Master Site Development Plan.



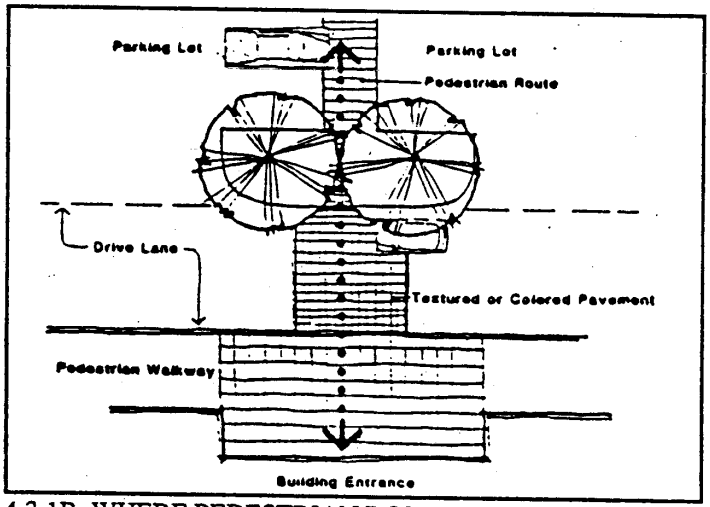
4.3.1 PROVIDE CLEAR, CONVENIENT, PEDESTRIAN ROUTES THROUGH PARKING LOTS AND BUILDING.



4.4.3 PROVIDE PROTECTION FROM THE ELEMENTS.



4.3.1A WHERE FEASIBLE, ORIENT PARKING LOT AISLES PERPENDICULAR TO BUILDING ENTRANCE.



4.3.1B WHERE PEDESTRIAN ROUTES AND PARKING LOTS CROSS, USE TEXTURED PAVING OR COLORED PAVING.

4.3 PEDESTRIAN CONNECTIONS THROUGH PARKING LOTS

Policy:
Walkways that lead pedestrians from parking to building entrances should be planned such that they minimize crossing conflicts with cars and facilitate easy movement. The pedestrian should feel comfortable and in a clearly defined "territory."

Guidelines:

4.3.1 Provide clear, convenient pedestrian routes through parking lots to building entrances. Pedestrians should not be required to cross service drives or areas to gain access to major entrances from principal parking lots.

a. Where feasible, orient parking lot aisles perpendicular to the building entrance to minimize vehicular-pedestrian conflicts.

4.3.2 Where major pedestrian routes within the parking lot will cross roadways and drives, use textured or colored paving that is distinguishable from the road surface to define these pedestrian routes.

4.4 BICYCLE PARKING

Policy:
Provide bicycle parking within each parcel to encourage alternative transportation modes.

Guidelines:

4.4.1 Locate bicycle parking spaces so they are **highly visible** at building entrances (yet not visible from the roadway).

a. Provide sufficient light to faciliate evening use.
b. Position racks near employee entrances where feasible.
c. Avoid positioning racks where they will obstruct visitor entrances.

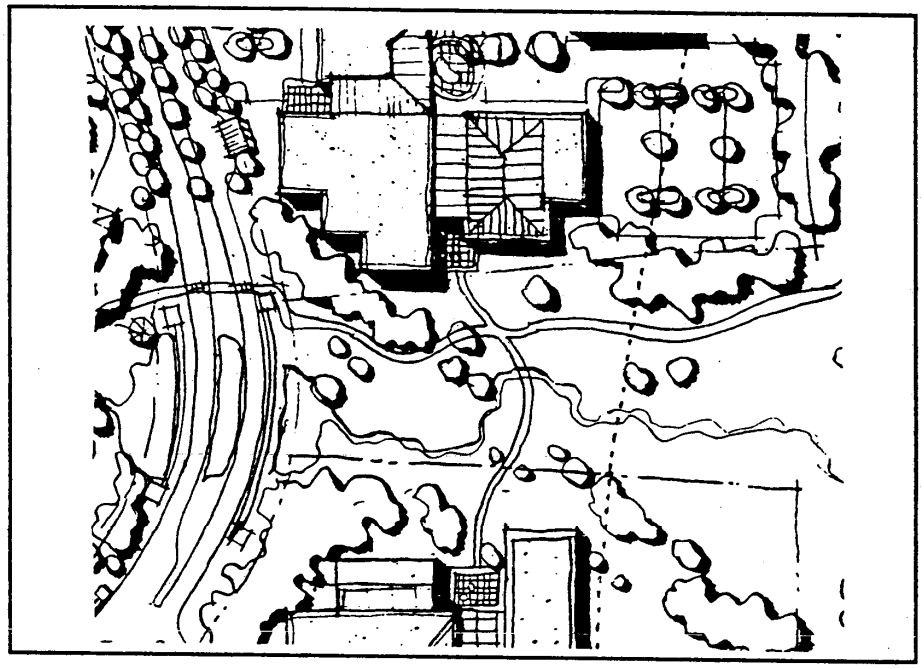
4.4.2 Provide bicycle parking spaces in the following minimum **ratio:** One (1) bicycle space for every ten (10) required off-street automobile parking space.

4.4.3 Provide **protection** from the elements.

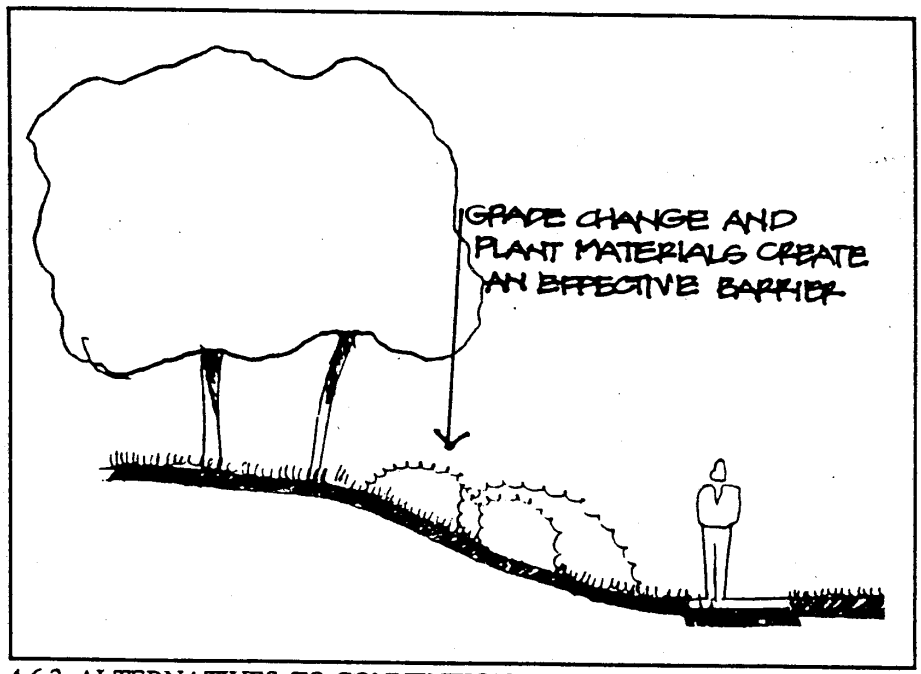
a. Shelters are encouraged. Protected overhangs incorporated as a part of the building may be considered.
b. Coordinate the design of the bicycle shelter with the building or other street furniture designs.

4.4.4 Select bicycle racks that provide options for use of a range of bicycle types and security devices.

a. Provide adequate mechanisms which facilitate bicycle locking.
b. Racks should accommodate a range of bicycle types including "mountain bikes".



4.2.3. PLAN RECREATIONAL TRAILS TO CONNECT WITH SITE-WIDE TRAIL SYSTEMS.



4.6.3 ALTERNATIVES TO CONVENTIONAL BARRIERS MAYBE CONSIDERED. CONSIDER USE OF THORNY MATERIALS AS DETERANTS.

4.5 HANDICAPPED ACCESSIBILITY

Policy:
The entire Research Park site shall be accessible to persons who are temporarily or permanently physically handicapped, disabled or impaired. Buildings, facilities and sites should be designed such that equal access is available to able-bodied and disabled persons alike.

Guideline:
4.5.1 Adhere to current requirements of ANSI A117.1, 1986. Copies of the regulations are available at the Office of Facilities Planning.

4.5.2 Provide equal access in an integrated setting by combining handicapped accessible, barrier-free design with access for able-bodied persons.

4.6 SITE BARRIERS

Policy:
Barriers are to be used to separate vehicular and pedestrian traffic for safety or to restrict access for security. Barriers should be visual assets. The objective is to keep the number of barriers to a bare minimum. A list of barriers includes: fences, walls, gates, curbs, bollards, shrubbery, and berms. In most cases barriers are the result of inadequate planning and poor facilities design. Where circulation paths are well-thought-out, few barriers are necessary.

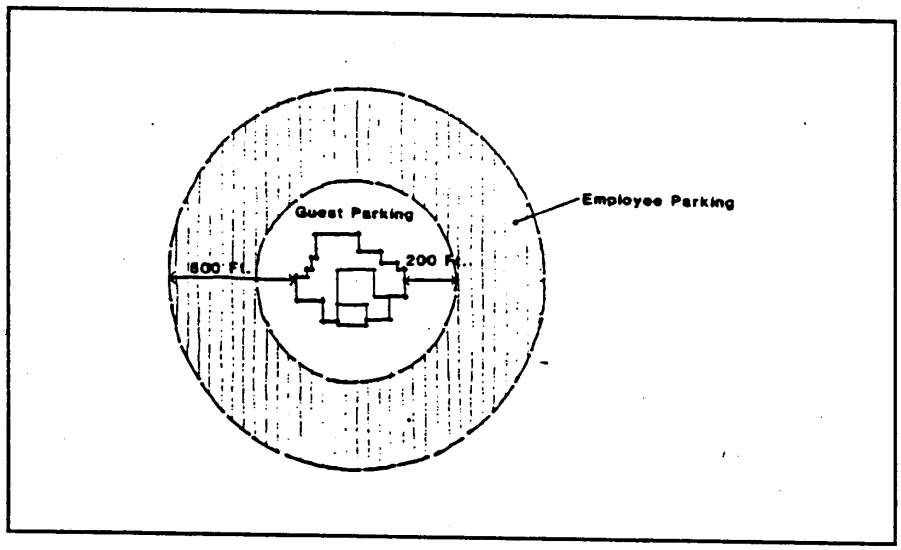
Guidelines:
4.6.1 Where barriers are necessary, plan them to be an **integral part** of the overall site design.
a. Use **materials** that are similar to others used for site furniture or that relate to the building materials.
b. Avoid steel post, chain, cable and wire. Barbed wire is not allowed in any case.

4.6.2 These types of barriers may be considered:
a. **Vehicles (including bicycles)**- Curbs, curb walls, gates, bollards, and partially buried large boulders, surrounded by plant material and ground cover.
b. **Pedestrians**- Short masonry walls, low fences, raised planters, pipe rails, and berms.
c. **Plant materials**, such as in hedges, are effective only after maturity and require backup barriers until that time. When planted on top of berms, vegetation barriers can be effective.

4.6.3 These alternatives to conventional barriers may also be considered:
a. **A change in level** between a walkway and the surrounding area is an effective means to keep pedestrians on walks.
b. Install benches, seating walls, bike racks, or raised planters along the edge of a designated route to discourage cross-cutting.
c. **Use movable vehicle barriers** such as gates, barricades, and mechanical devices that fold down or recess into the pavement only under special circumstances. See also Guidelines 3.8.

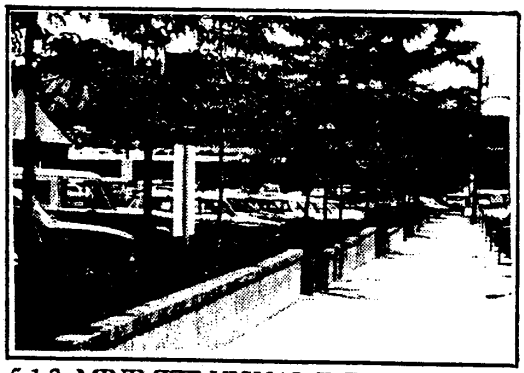
4.6.4 See also Guidelines for Landforms, Section 6 .2.4 and Buffers, Section 6.2.5.

5. PARKING LOTS AND PARKING STRUCTURES DESIGN GUIDELINES



5.1.2 LOCATE PARKING AREAS WITHIN ACCEPTED WALKING DISTANCES.

5.1.3 BUFFER PARKING LOTS FROM STREET. USE BERMS AND LANDSCAPING MATERIALS.



5.1.3 MINIMIZE VISUAL IMPACT OF PARKED CARS. RETAINING WALLS AND PLANTERS ARE APPROPRIATE IN AREAS OF INTENSE PEDESTRIAN ACTIVITY.

5. PARKING LOTS AND STRUCTURES DESIGN GUIDELINES

This section provides standards for the siting and layout of parking lots and structures. Specific landscape criteria for parking are included in Section 6, Landscape Guidelines.

5.1 SURFACE LOTS

Policy:
Parking lots should be located and designed so they will provide efficient vehicular circulation and safe pedestrian circulation within the site, while minimizing the visual impact of cars. In general, parking areas should be a visual asset to the Research Park, and large expanses of pavement should be avoided. On-street parking is prohibited throughout the Research Park.

Guidelines:

5.1.1 Where feasible, locate parking lots within the **air movement corridors** designated in the Master Plan. Judicious location of parking lots in air movement paths will assist in minimizing carbon monoxide concentrations.

5.1.2 Maximum recommended **walking distance** from the farthest parking space to a building shall be 200 feet for **guest parking**, and 500 feet for **employee parking**. Longer walking distances may be acceptable where the pedestrian way is well-designed and encourages walking.

5.1.3 Minimize the negative visual impact of parked cars with landscape design elements.
a. Screen parking areas from view of public ways or designated view corridors with berms and other landscaping. See Landscape Design Guidelines Section 6 for details.
b. Divide parking lots into smaller areas with planted buffers between them to minimize the perceived scale of the total field of stalls.

5.1.4 These standard **dimensions** of automobile parking spaces shall be used throughout the Research Park:

a. Standard parking spaces for perpendicular layouts within a surface lot shall measure: 9.0' x 19.0'.
b. Compact car parking spaces for perpendicular layouts within a surface lot shall measure: 8.0' x 16.0'.
c. Parking spaces for the handicapped shall measure: 9.0' x 19.0' with an adjacent 4foot wide loading/unloeading area. Aisle may be shared by two reserved spaces (on aisle for each 2 handicapped spaces). End spaces with an adjacent 4' walk are also practical.
d. Driving aisle widths shall measure 24.0' for perpendicular parking.
e. Diagonal parking space dimensions may be negotiated on a case-by-case basis.

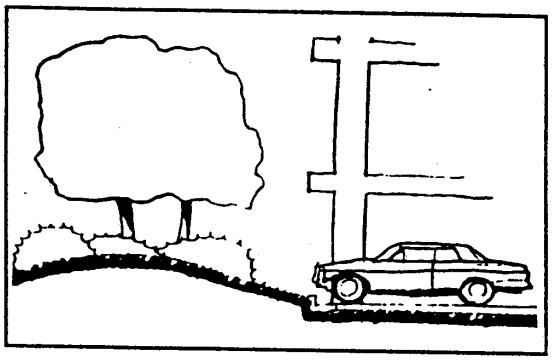
5.1.5 Connect parking lots with convenient service roads between lots.

5.1.6 Design parking lots to discourage high speed driving, especially near building entrances.
a. Avoid aligning all travel lanes in parking lots in straight configurations that facilitate speeding.

5.1.7 Design parking lots to avoid dead-end aisles.
a. Where feasible, provide continuous access to adjacent parking aisles, lots or roads.
b. Where dead-end situations are unavoidable, adequate space for unimpeded turn-around must be provided.

5.1.8 Align parking aisle medians **perpendicular** to building entries.
a. This will minimize obstacles to pedestrians, and help encourage walking to more remote parking stalls.

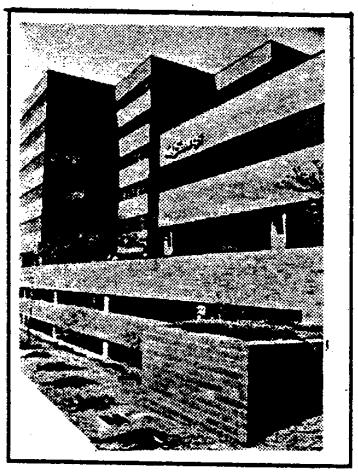
5.2 PARKING AT GROUND LEVEL OF BUILDINGS MAY BE CONSIDERED.

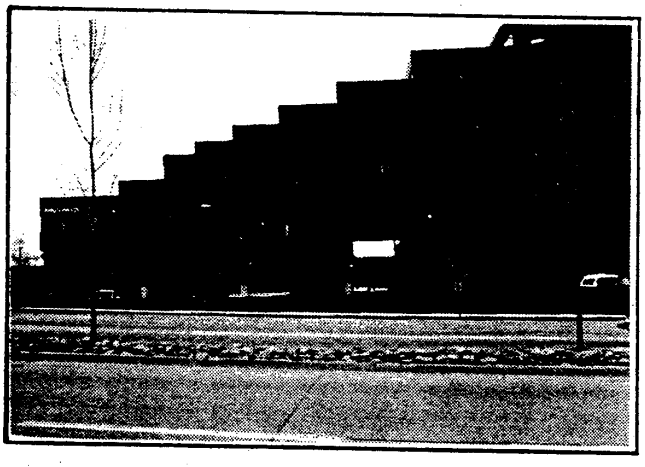


5.2.2 SCREEN THE HEADLIGHTS OF CARS FROM VIEW FROM THE GROUND LEVEL.

5.2.3 PROVIDE CONVIENENT, WEATHER PROTECTED PEDESTRIAN CONNECTIONS BETWEEN PARKING STRUCTURE AND BUILDINGS.

5.2.6 WHERE FEASIBLE, CREATE SLOPING TOPOGRAPHY TO PROVIDE GRADE ACCESS TO EACH LEVEL OF PARKING DECK.





5.2.5 WHERE PARKING LEVELS ARE INTEGRATED INTO PRIMARY BUILDINGS, CONCEAL THE VIEW OF THE CARS AT THE FIRST FLOOR ALONG THE FACADE CONTAINING THE PRIMARY ENTRANCE.

5.1.9 Parking lots constitute a major portion of impervious surface area. Runoff from storms and snowmelt must be controlled. Design parking lots to **minimize surface run-off.**

a. Porous paving is encouraged to maximize infiltration of storm water into suitable soils.
b. French drain systems are also encouraged.
c. In contrast to large continuous paved lots, development of sets of smaller lots is encouraged, to accommodate infiltration systems.
d. Drainage from parking areas should be dispersed in a manner that promotes infiltration and reduces erosion.
e. Provide a minimum pavement slope of 1.5% to minimize depression in paving. Slopes should not exceed 2%.
f. Design drainage to sheet flow from paved areas across grass areas into grass swales.
g. Refer to Section 2., Stormwater Management/Drainage Design for additional guidelines.

5.1.10 **Special Parking Spaces:**
Locate special parking spaces for van pool and car pool parking close-in to building entrances to encourage their use.

5.1.11 **The "standard campus lighting fixture,"** as adopted by the University, should be installed in a manner that will provide an average illumination of one footcandle at three feet above the ground in parking lots. Information about these fixtures is available from the University's Department of Facilities Management. See the Landscaping Guidelines, Section 6.

5.2 PARKING STRUCTURES AND PARKING UNDER BUILDINGS

Policy:
The appearance of parking structures, either free-standing, or attached, should relate to the "parent" buildings and should positively contribute to the character of the site. Structures that are integrated into the main building are preferred.

Guidelines:
5.2.1 The general architectural guidelines shall apply to all parking structures; specifically with regard to mass, scale, and materials. See Section 7.

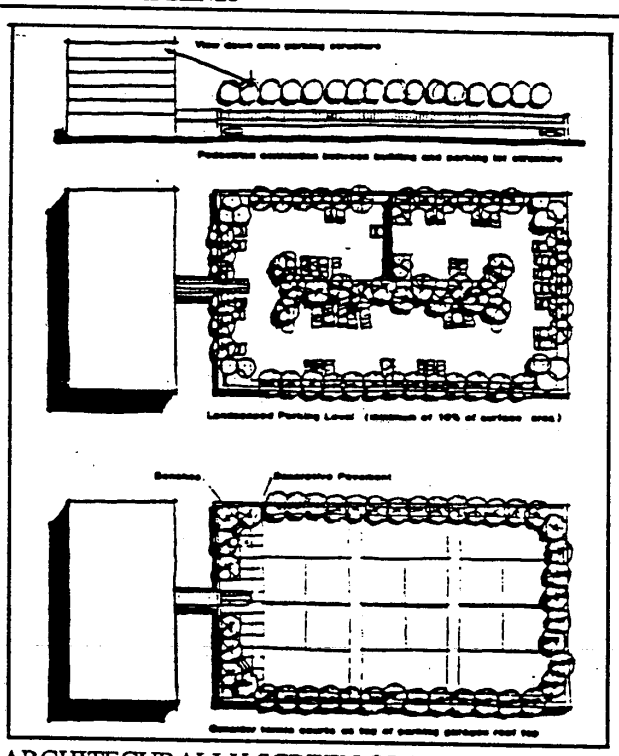
5.2.2 Screen the headlights of cars from view from the ground level.

5.2.3 Provide convenient, weather-protected pedestrian connections between parking structures and main buildings, and at pick-up points. Atriums may be considered.

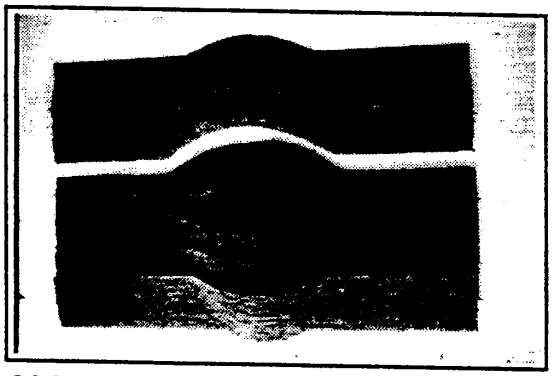
5.2.4 Separate vehicular access to parking structures from general surface lot parking and clearly identify the access with signs.

5.2.5 Where parking levels are integrated into primary buildings, conceal the view of cars at the first floor along the facade containing the primary pedestrian entrance to the building.

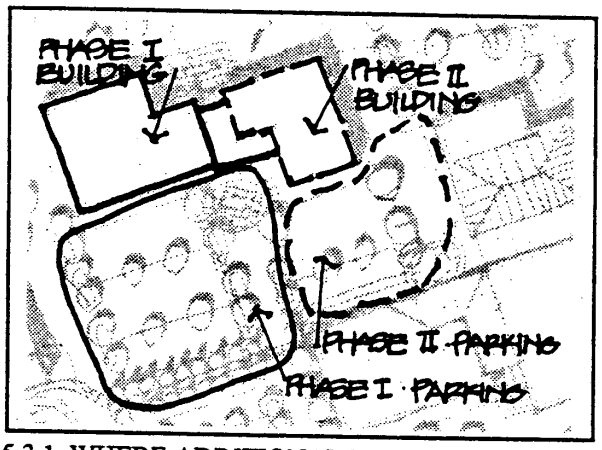
5.2.6 Where feasible create sloping topography to provide direct at grade access to each level of a parking deck. This will reduce the need for internal ramps and thereby reduce construction costs and expedite entry and exit movements.



5.2.7 ARCHITECURALLY SCREEN OR LANDCSCAPE THE TOP FLOOR OF THE PARKING DECK FROM VIEW. CONSIDER HARD SURFACE AND DECORATIVE OR RECREATIONAL ELEMENTS.



5.2.8. ANOTHER OPTION FOR A PARKING SCREEN IS TO USE SCULPTURAL ELEMENTS.



5.3.1 WHERE ADDITIONAL BUILDING SPACE MAY BE DEVELOPED, PLAN FOR FUTURE PARKING.

5.2.7 Architecturally screen or landscape the top floor of the parking deck from view of upper floors of adjacent offices. This is especially critical where deck tops will be visible from upper floors of buildings oriented toward designated view corridors

a. Hard-surface, decorative elements may be included.
b. Recreational activities may be included.
c. Where the top level is used for parking, a minimum of 10% of the surface area shall be landscaped in conformance with Section 6.3, Landscape Guidelines for Parking Lots.

5.2.8 Where the ground level of the parking structure faces onto a major public way, design the facade to be "pedestrian interesting."

a. Consider using decorative screens, murals, or plant materials that can provide interest to pedestrians.

5.3 DEVELOPMENT OF FUTURE LOTS AND STRUCTURES

Policy:
Many projects can be expected to be built out in phases, and parking design should work well in each of the phases. Provision should be made on the site for increased parking demand through the expansion or change in uses of each building.

Guideline:
5.3.1 Where additional building space may be developed in later phases, planning for future parking is required at the outset. Compatibility of future parking lots (and especially structures) will be an issue for review at those later development stages.

5.4 MOTORCYCLE PARKING

Policy:
Motorcycle parking should be designed and sited in such a way that it is clearly distinguishable from automobile parking. Parking stalls should be identified to encourage orderly positioning of parked vehicles. Adequate security and visibility should also be concerns.

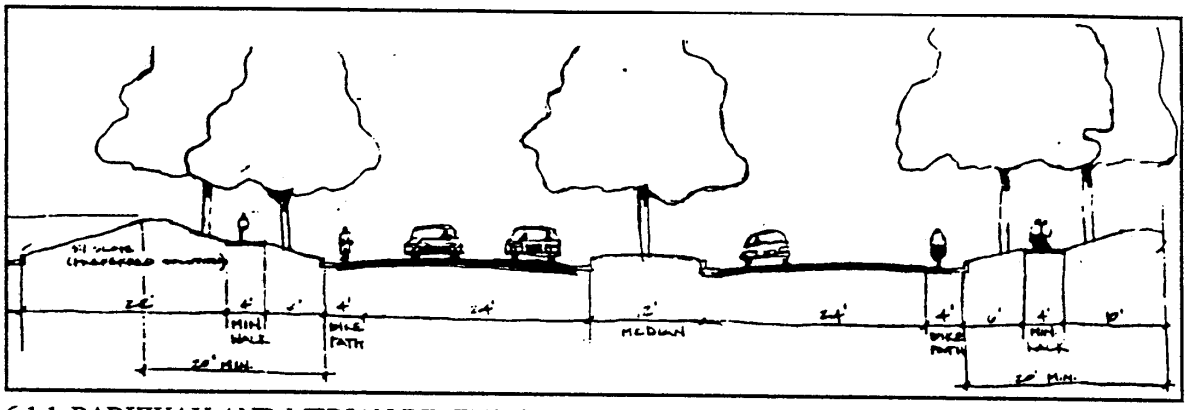
Guidelines:
5.4.1 Motorcycle stall dimensions should be a minimum 36 inches wide by 72 inches deep with a 48 inch access aisle.

5.4.2 Locate motorcycle parking bays separately from automobiles to minimize confusion or improper use of motorcycle stalls by automobiles.

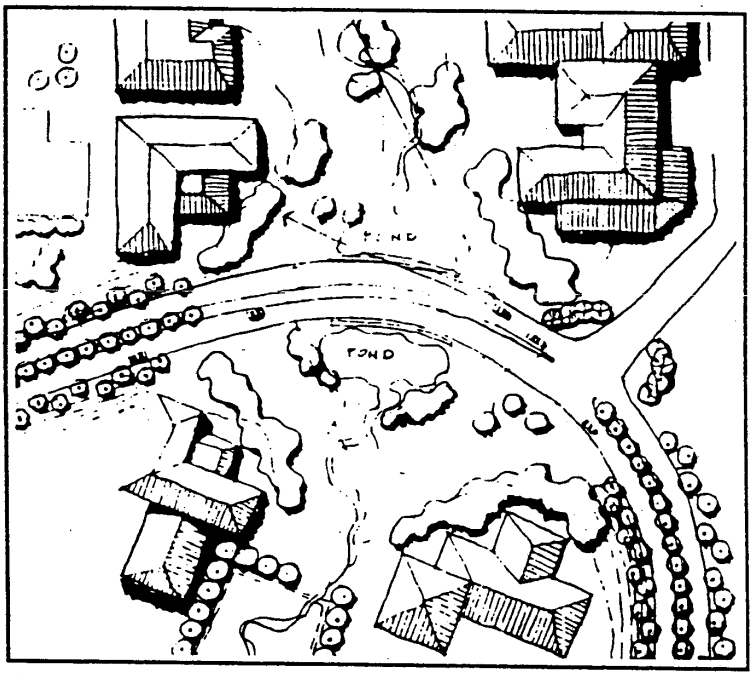
5.4.3 Use concrete paving in these parking areas to support kickstand pressure.

5.4.4 Provide motorcyle parking spaces in the following ratio: 1 motorcyle space /20 vehicle parking spaces.

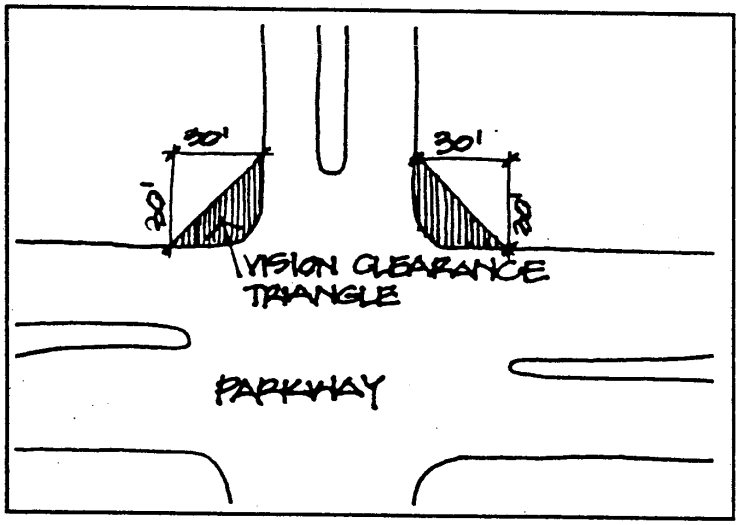
6. LANDSCAPE DESIGN GUIDELINES



6.1.1 PARKWAY AND MEDIAN DIMENSIONS.



6.1.2 PARKWAY AND MEDIAN PLANTING



6.1.3 SIGHT LINES AND ROAD INTERSECTIONS.

6. LANDSCAPE DESIGN GUIDELINES

The overall landscape concept for the Research Park is to use uniform plant materials and landscape elements along all street and major public open space areas. By contrast, more individual landscape designs may be used close-by buildings, although some similarity in landscaping among parcels within each Pod is also encouraged. In this way, a balance between an overall uniformity of landscaping for the Park as a whole is to be balanced with individual expressions that give identity to each building.

A gradation of plant materials is planned, progressing from low-maintenance, native plants along natural open space areas, to more formal, intensive- maintenance materials near building entrances. Larger landscaped areas should be predominantly low-maintenance materials. High-maintenance materials should be concentrated in areas where pedestrians will most frequently come into contact with them, such as at building entrances, public plazas, and information kiosks.

The Landscape Design Guidelines are divided into 4 areas, corresponding to the 4 major design influences on the site: The **Parkway Corridors**, the **Individual Building Parcels, Parking Lots** and the **Open Space Corridors**. Each of these areas have distinct characteristics that require a different approach yet each must complement the other in order to present a visually unified image for the Research Park.

6.1 LANDSCAPE DESIGN GUIDELINES FOR THE ROADWAY CORRIDORS

Policy:

The roadway corridors will be visually cohesive open spaces throughout the Research Park. Similar landscape elements should be used at all entrances and intersections. Plant material massing, spacing, and height are characteristics that should provide visual clues to motorists about the hierarchy of roadways. The roadway planting and grading will work together to create a variety of experiences along the road and to call attention to the open space corridors.

Guidelines:

6.1.1 Parkway and Median Dimensions

a. On the Parkway, provide a fourteen foot (14.0') wide median, and a twenty foot (20.0') wide parkway on each side of the road.

b. On the Secondary Road, provide a twelve foot (12.0') wide parkway on each side.

6.1.2 Parkway and Median Plantings

a. Vary tree planting species in medians and parkways to enhance the street-scape experience and emphasize entries/intersections and call attention to open space features.

b. Enhance views by providing a visual break in the median trees that frames a view.

c. Use fescues or trimmed meadow grass for ground covers.

d. Tree spacing along road ways shall be an average of 1 tree per 30 lineal feet.

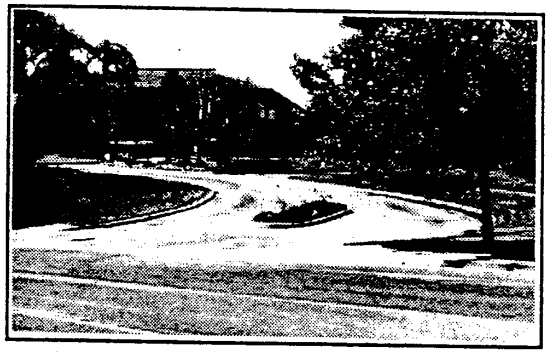
6.1.3 Sight Lines at Road Intersections

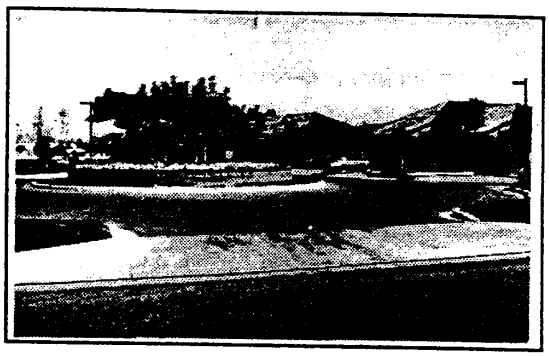
a. Provide adequate sight-lines for an effective 30.0' sight triangle measured from the face of curb. Plants and signage within the sight triangle should follow these rules.

b. Shrubs may not exceed 30" growing height within sight triangles.

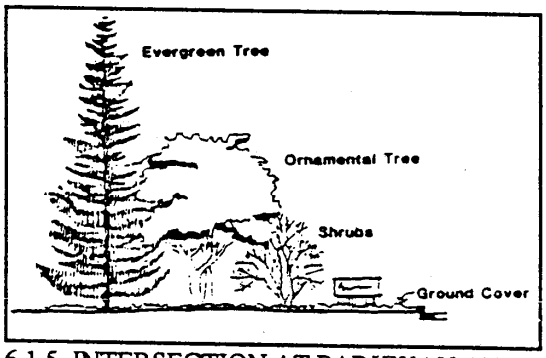
c. Mature trees must be pruned clear of branches up to 8.0' to maintain visibility.

d. Signs may be placed in this area if they do not obstruct views.



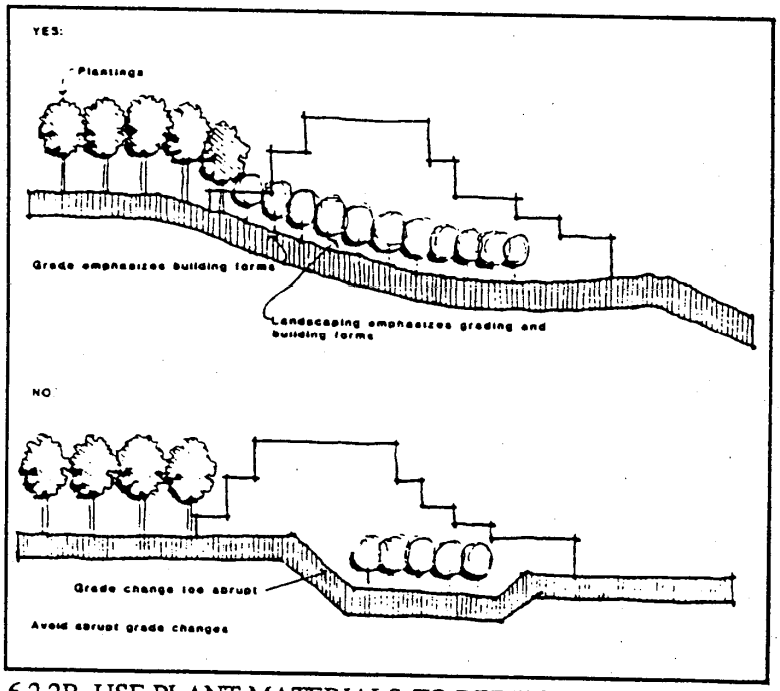


6.1.4 LANDSCAPING AT PARKWAY AND SECONDARY ROADWAY INTERSECTIONS.



6.1.5 INTERSECTION AT PARKWAY AND SECONDARY ROADWAYS. LANDSCAPE FOUR SCALES OF HEIGHT.

6.2.3 WATERWAYS. BOULDER CREEK AND ANCILLARY WATERWAYS ARE PLANNED AS CENTRAL FEATURES IN PARK.



6.2.2B USE PLANT MATERIALS TO REINFORCE THE LAND FORMS.

6.1.4. Landscaping at Parkway and Secondary Roadway Intersections

a. Provide clusters of plant materials on four scales of height: evergreen trees, ornamental trees, shrubs, and ground covers. Incorporate berming as a backdrop when feasible.

b. Plant the clusters so that they appear as a cohesive visual element and complement the overall landscape theme and palette.

c. When feasible, incorporate rasied planter beds, planted with perennials and annuals for color and interest.

6.1.5 Landscaping of entry drives to each parcel:

a. Provide three levels of scale: ornamental trees, shrubs, and ground covers.

b. Plant the clusters so that they appear as a cohesive visual element and complement the overall landscape theme and palette.

c. Integrate the plant design with the entry sign. Plantings should frame or provide a visual base for the signs.

6.1.6 Landscaping of Drop-Off areas: Introduce color at the drop-off areas in the form of perennial and annual plantings.

6.2 LANDSCAPE GUIDELINES FOR INDIVIDUAL BUILDING PARCELS

Policy:

Cordinated landscape design of individual building parcels is essential in creating the character of the Research Park. A cohesive landscape design will serve to unify the various buildings and strengthen the feeling of a unique research park. The landscape treatment for each parcel must complement the roadway landscapes, create a distinctive setting for the building and help to reinforce the open space system.

Guidelines:

6.2.1 Existing Vegetation

a. Preserve any existing tree 4" (or larger) caliper tree located more than 20' from a building, if the tree is healthy and of a desirable species.

b. Use tree wells or retaining walls if necessary to protect existing trees.

6.2.2 Grading and Erosion Control

Policy:

The grading of each building parcel should be designed as part of the overall landscape design. Grading should be used to integrate buildings into the landscape, to accomplish energy conservation (as in earth sheltered designs), to screen unwanted views and parking areas and to assist in environmentally-sensitive storm water control.

Guidelines:

a. In general, limit slopes to 3:1 or less. Four-to-one (4:1) slopes or gentler are encouraged whenever possible.

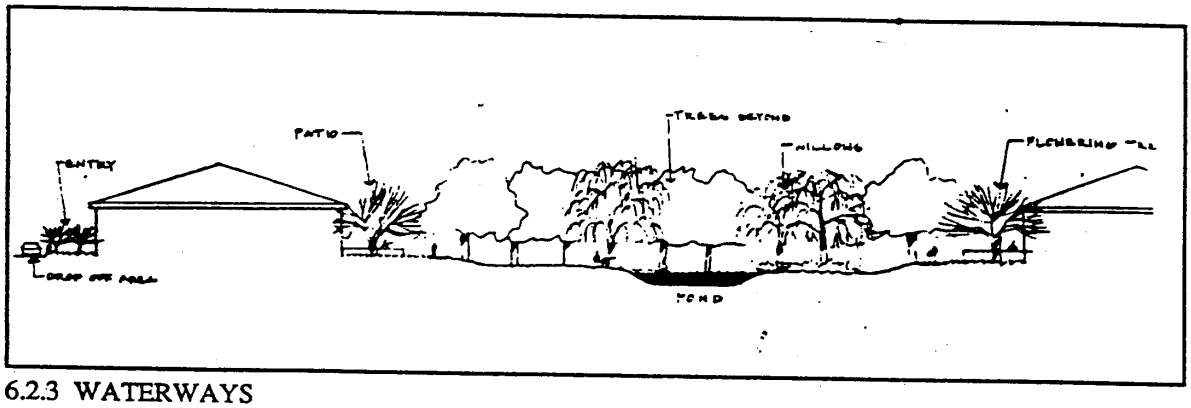
b. In general, transition grades between old and new elevations should be rolling rather than one continuous slope.

c. In general, avoid using retaining walls in excess of 3 feet in height. Where taller retaining walls are required, provide safety protection in the form of railings, fences or hedges or create a terrace with two shorter walls.

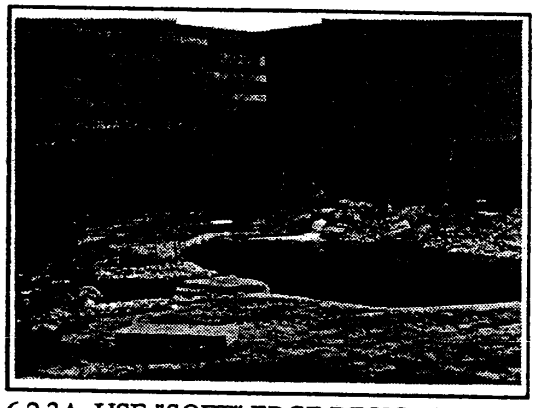
d. Plant all disturbed soil and slopes with an approved grass mixture or ground cover. Prepare the soil prior to seeding

e. Provide berms where feasible for screening, to create interest, to direct views, and to provide spatial separation.

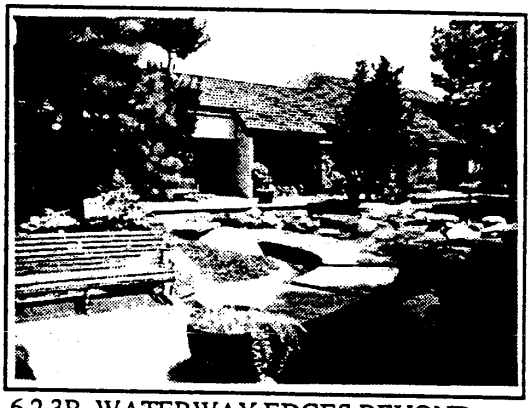
f. Grassed storm water swales are required. Design all grassed swales in accordance with UD& FCD criteria.



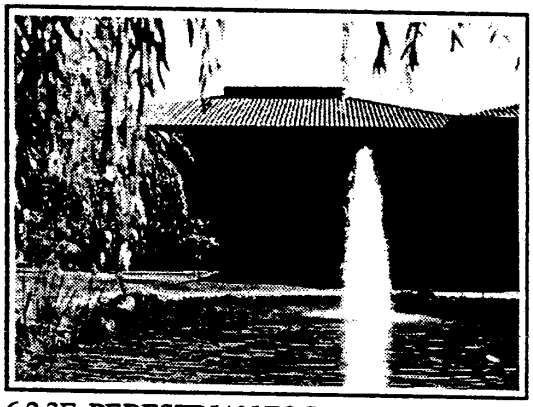
6.2.3 WATERWAYS



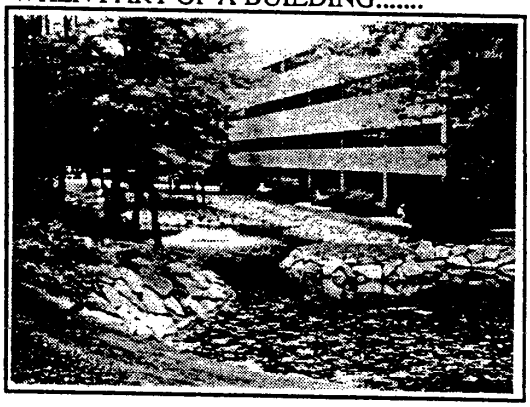
6.2.3A USE "SOFT" EDGE DESIGNS FOR POND EDGES.



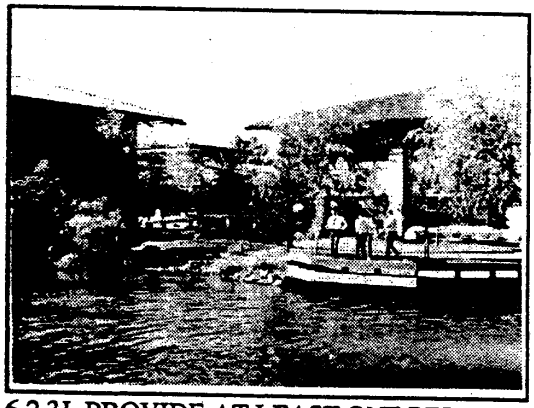
6.2.3B WATERWAY EDGES BEYOND DEFINED CHANNEL MAY BE "HARD" WHEN PART OF A BUILDING.....



6.2.3F PEDESTRIAN FOCAL POINTS.....



6.2.3H LOCATE TREES AT WATER EDGE TO FRAME VIEWS OF BUILDINGS AND THE WATER.



6.2.3J PROVIDE AT LEAST ONE PEDESTRIAN OVERLOOK OR CROSSING AT EACH BUILDING

6.2.3 Waterways

Policy:

The Boulder Creek and ancillary waterways are planned as the central features of the Park and these waterways will be major features of the parcels adjacent to the open space system. Generally, a combination of the natural and "man-made" image is desired; the "man-made", formal edge associated with buildings and plazas and the natural edge associated with open space.

Guidelines:

a. Waterway edges are to be "soft" (earth bank). Plant waters edge with Riparian vegetation where feasible.

b. Waterway edges beyond the defined channel may be "hard" when a part of a building, plaza or pedestrian way is at the waterway edge.

c. Building is permitted at the waters edge within designated areas only.

d. Where designated on the MSDP, provide a continuous pedestrian way along the water edge. Materials used may vary, but should be complementary, such as brick, stone and textured concrete.

e. Provide pedestrian connections to the water for those buildings not adjacent to the waterway but within a pod that abuts the water edge.

f. Consider the establishment of major pedestrian focal points along the waters edge such as: fountain, bridge, overlook, seating, gazebo, etc.

g. Roof-top drainage may be directly diverted to the wetlands up stream of ponds or the waterways.

h. Locate trees at the waters edge to frame views of buildings and the water. Use water- loving trees native to the area.

i. Locate parking lots away from the water's edge, except where they are to serve as detention structures. Where parking must be close to the water, use earth berms and plants to screen views of the parking.

j. Provide at least one pedestrian overlook or crossing at each building parcel adjacent to a waterway.

k. Use plant materials to reinforce and strengthen the edge of the open space/waterway.

l. See also Section 2, Stormwater Management/Drainage Design Guidelines.

6.2.4 Retaining Walls

Policy:

Retaining walls should be aesthetically pleasing structures in the landscape. Retaining walls offer many possibilities for uses aside from their main function. Stepped, tiered, or terraced retaining walls for instance, can also serve as seating, planting beds or bases for signs.

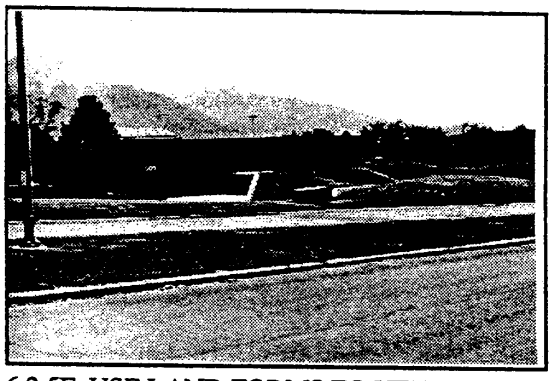
Guidelines:

a. Construct retaining walls of **materials that harmonize** with the surroundings in the area where they are built.

b. Textured concrete or rock-faced walls are encouraged. Brick may be considered.

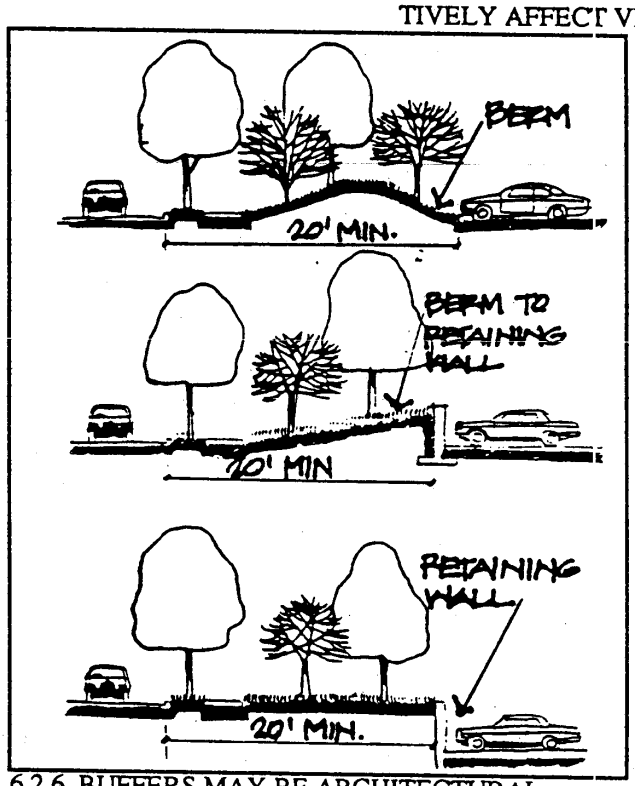
c. **Railroad ties and other wood materials are not allowed.**

d. See also Section 1.7.2, for retaining wall setbacks.

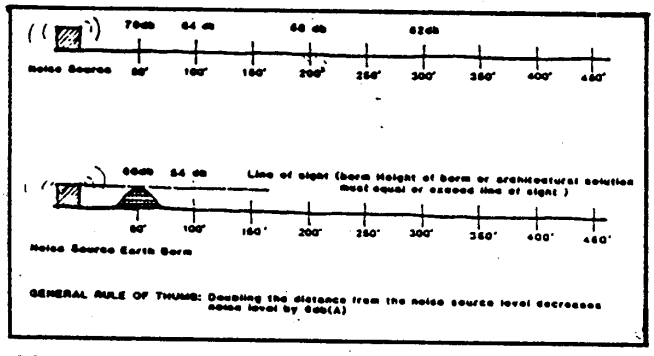


6.2.5F USE LAND FORMS TO UTILIZE EARTH.

6.2.6 VISUAL BUFFERS ARE TO BE USED WHERE PARKING AND SERVICE NEGATIVELY AFFECT VIEWS.



6.2.6 BUFFERS MAY BE ARCHITECTURAL, SUCH AS WALLS, FENCES, OR MAY BE COMPOSED OF EARTH BERMS.



6.2.7 SOUND BUFFERS.

6.2.5 Landforms

Policy:

New land forms should visually complement the image of the Park and integrate with overall site drainage while also meeting individual functional needs.

Guidelines:

a. Create grade separations: slopes, banks and berms should be utilized to create separations between various site components, i.e., to separate the roads from parking and buildings from floodways. See also Site Barriers, Section 4.9.4.

b. Create screens and buffers: The mounding of earth into small hills should be undertaken where a barrier is desired between unwanted sights or sounds. The planting of vertical elements in the berm will raise its height to more effectively block views and absorb noise. Small leafed or needled coniferous species work best to absorb sound enrgy. Although the heights of berms may vary, slopes should not exceed 3 to 1. **The use of plant material, mulching, and rock as a covering for berms should be considered over sod in steep slope conditions only. The latter becomes difficult to mow on steep hillsides and does not hold water adequately.**

c. Create positive drainage away from all buildings. Slope all surfaces at a minimum of 3% for lawn areas, and 1.5% for paved surfaces.

d. Use horizontal lines or lines parallel to the building in the physical design of the landforms.

e. Use plant materials to reinforce the landform.

f. Use land forms to utilize earth-sheltering concepts for energy conservation.

6.2.6 Visual Buffers

Policy:

Visual buffers are to be used where parking and service areas negatively affect views. Buffers may be architectural, such as walls or fences, or may be composed of earth berms and plantings.

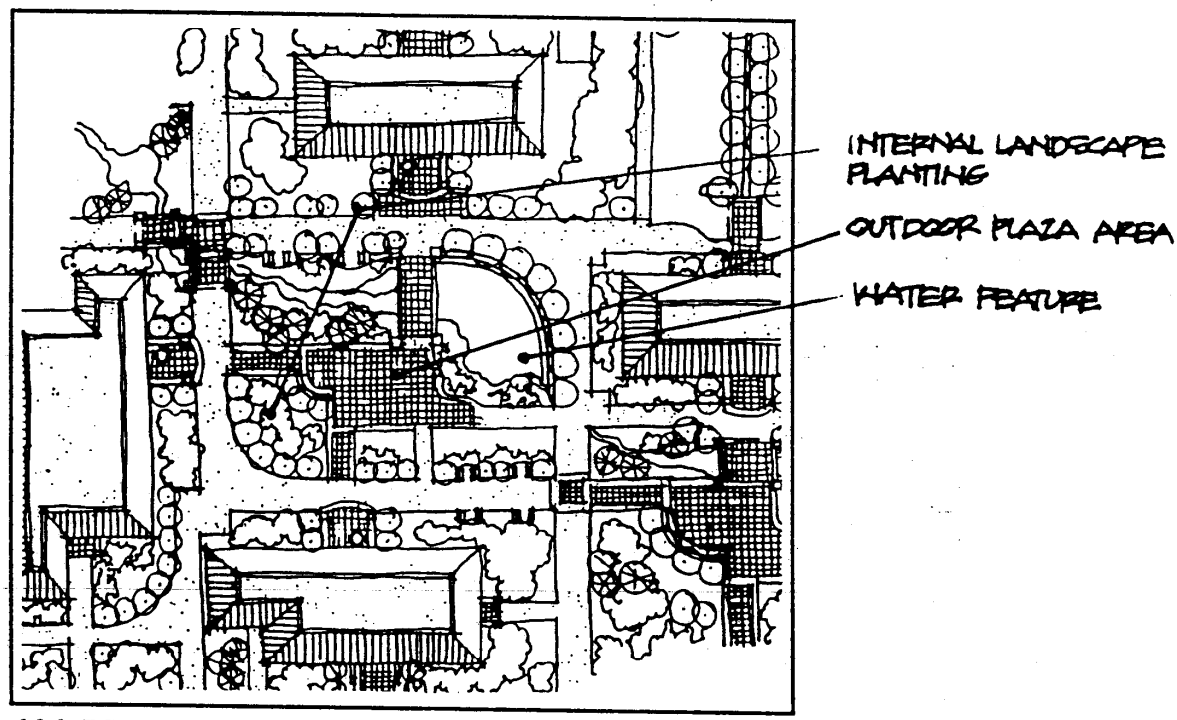
Guidelines:

a. Use earth berms and/or recessed parking lots where possible for screening. Low retaining walls (3.0' maximum height) are also appropriate. See the Section on Grading for further information.

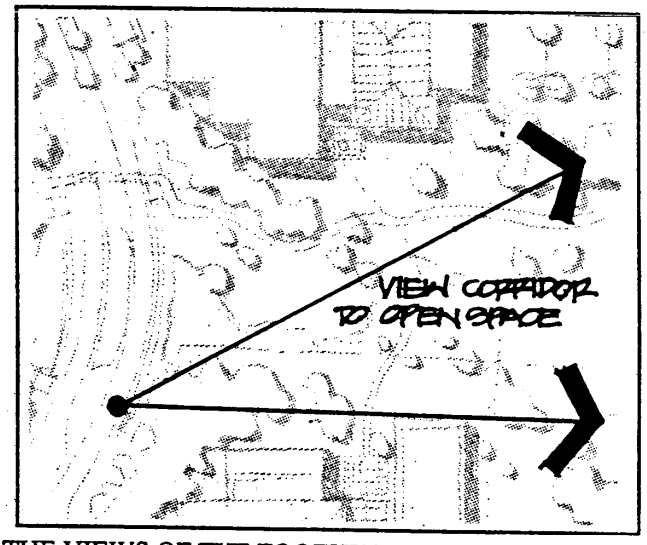
b. Where a separation in grade is not possible, or when screening a service area, incorporate a hedge, fence, or wall. Trees and shrubs may be used separately or together to form an intensive plant screen.

c. Use evergreen or deciduous shrubs to create hedges or screens. Deciduous shrubs should have a dense branching structure that begins close to the ground. Do not alternate evergreen and deciduous shrubs in a hedge. For hedges, space plants a maximum of 3.0' on center and a minimum of 1.5' on center. For an informal shrub mass, use plants that have a wider spread and plant at distances that are appropriate for their mature size. Use 5 gallon container plants wherever possible. Set back plant materials a minimum of 4.0' from the back of the curb, and from walkways.

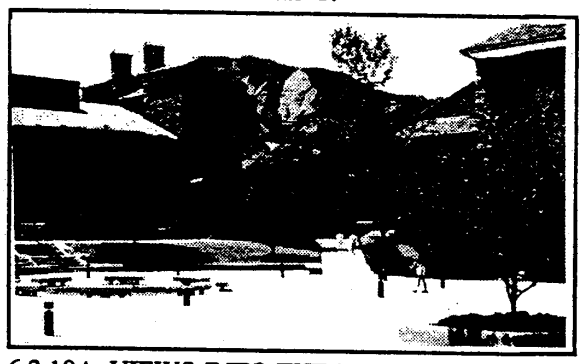
d. For screening, trees may be used in clusters (minimum of 5 trees, 6.0' apart) or in rows (12.0' maximum separation) or in combination with shrubs to screen views from above. Plant trees at least 4.0' away from back of curb and outside of utility easements.



6.2.9 INTENSIVE CARE GARDENS



6.2.10 THE VIEWS OF THE FOOTHILLS AND NATURAL LANDMARKS ARE IMPORTANT TO RETAIN IN NEW DEVELOPMENT.



6.2.10A VIEWS INTO THE BUILDING SITE FROM PERIMETER ROADWAYS.

6.2.7 Sound buffers.

Policy: Sound buffers should be used where sound control and climatic manipulation is desired, especially along the perimeter border of the Research Park.

Guidelines:

a. Sound buffers may be appropriate for sites abutting highways, and for transformers and power substations located on individual parcels.
b. Use earthforms and architectural solutions to mitigate unwanted sound.
c. The height required for buffers will depend on the specific noise source and the distance between the source and the building.
d. Plant materials alone will not be considered as sufficient noise buffers.
e. Maintain a maximum 55dB(A) noise level at the building line.

6.2.8 Tree Grates

Use grates to prevent excessive soil compaction and to give added interest to the pavement. The grates should be fabricated of a strong non-rusting steel, capable of supporting maintenance vehicles. In some areas which receive heavy use by people, tree guards may be appropriate to give added protection to young trees.

6.2.9 Intensive Care Gardens

Policy:

Certain unique areas in the Park may be designated as sites for special gardens that require special care. These should be used as accents in the Park landscape to highlight areas of high public visibility.

Guidelines:

a. **Intensive Care Gardens** may include medians at Park entrances or pod entries or at major building entrances, around principle signs that identify the Research Park, at corners of major auto and pedestrian entry points, and planting areas in and around major pedestrian courts and malls.
b. Use of perennials is strongly encouraged to bring color and interest to those highly visible areas..

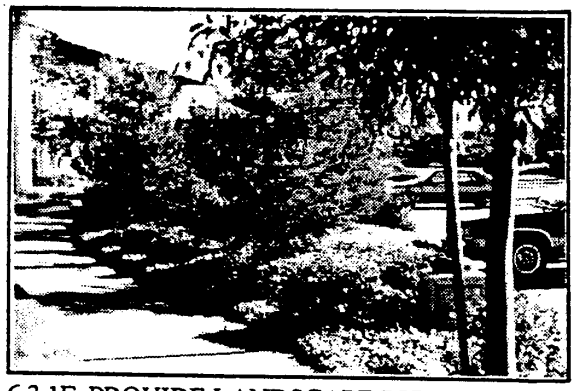
6.2.10 Views

Policy:

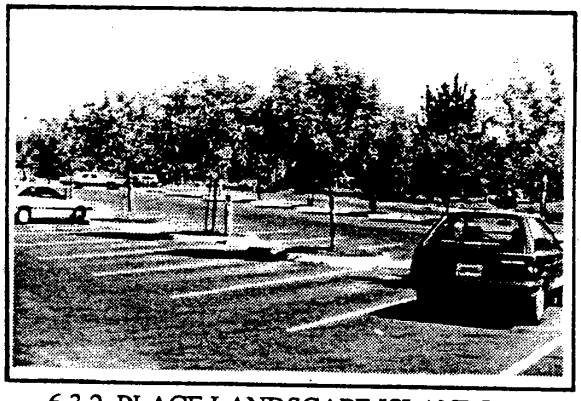
The views of thefoothills and natural landmarks are important to retain in new development. The appearance of buildings and roadways must be integrated with the landscape and sited to enhance the perceived views to these features. Views into and out of each building site must be considered individually as well as in the context of the entire Research Park.

Guidelines:

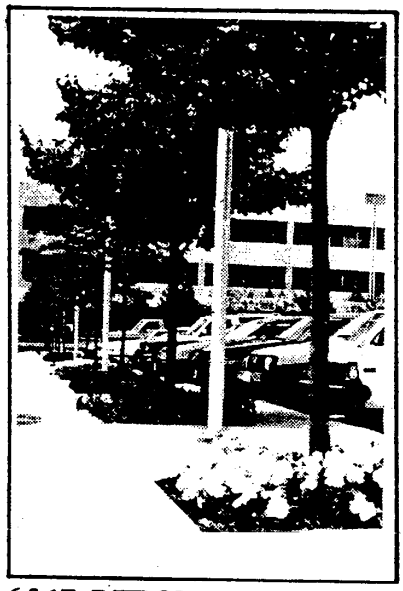
a. **Views into the building site from perimeter roadways**
(1) When proposed buildings and parking will be visible from Foothills Parkway and Colorado Ave., visual simulation (models or computer simulated perspective analysis) of the proposed building may be required.
(2) Use landscape materials to enhance the building forms.
(3) Use plants and grading to blend the building into the landscape.
(4) Use plants as a contrast to building form.
(5) Use plants to frame a view from the highway.



6.3.1F PROVIDE LANDSCAPE BUFFER BETWEEN BUILDINGS AND PARKING LOTS.



6.3.2 PLACE LANDSCAPE ISLANDS BETWEEN EVERY TEN PARKING SPACES.



6.3.1E INTRODUCE COLOR AND INTEREST IN PARKING LOTS WITH THE INCORPORATION OF PERENNIALS.

6.3.3 LANDSCAPE MEDIANS.

b. **Views from within the building site:**
(1) To Boulder Creek, mountains, and interior waterways/open space corridors.
(2) Enhance views to these features with landscape and architectural design.
(3) Provide courtyards and balconies that orient towards these features.
(4) Site buildings to provide view corridors between buildings. Consider the view axis from building entries and windows.
(5) Use plants to frame and direct views and to screen unwanted views. Do not obscure view corridors with plant materials.
(6) Views to the Flatiron Formation the Continental Divide and the rest of the mountain backdrop should be carefully preserved.

c. See also Section 1.4

6.3 PARKING LOT LANDSCAPE GUIDELINES

Policy:
Parking lots are a necessary feature of the building sites that can visually detract from the overall character if not properly designed. Parking lots should be designed to blend with the building site character through the use of landscape plantings and grading.

Guidelines:

6.3.1 General

a. Landscaping of parking areas is organized into two types:
1. Perimeter parking lot landscaping screens the parking from outside the site.
2. Internal landscaping breaks up the parking area and provides shade.

b. Landscape a minimum of eight percent (8%) of the total parking lot area (excluding perimeter landscaping).

c. Provide a minimum 10.0' wide landscape buffer at the perimeter of parking lots.

d. See Section 3, Parking Lots and Structures Design Guidelines.

e. Introduce color and interest in parking lots with the incorporation of perennials.

f. Provide landscape buffer between buildings and parking lots.

6.3.2 Landscape "Islands"

a. Place landscape islands between every ten (10) parking spaces to break up expanses of pavement.

b. Design interior landscape islands to be a minimum of six feet (6.0') wide and plant with one tree, 3 shrubs, and full ground cover for every 115 square feet of island area.

c. Design end islands (at the end of parking bays) to be a minimum of ten feet (10.0') wide and plant with 1 tree, 6 shrubs, and full ground cover for every 115 square feet of island area.

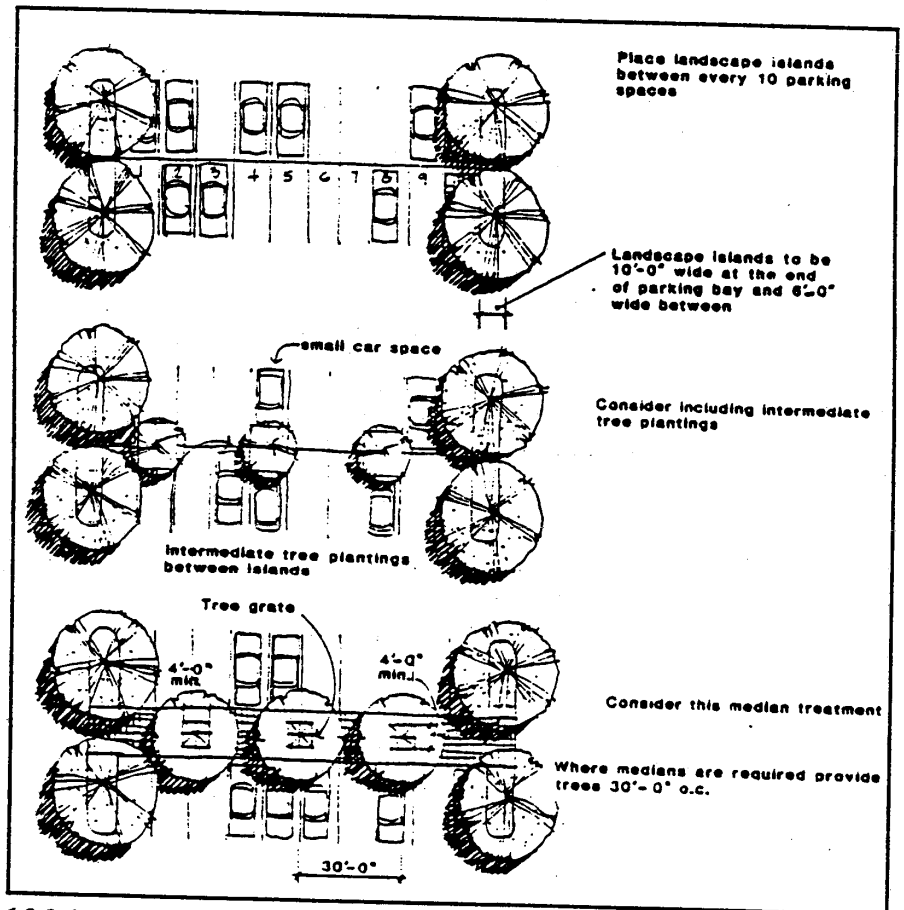
d. Interior landscaped islands are not required in those parking bays with medians.

6.3.3 Landscape Medians

a. Design medians to provide a minimum effective pedestrian walkway width of 4.0' (exclusive of car overhangs) and landscape with shade trees spaced a minimum of 27.0' on center.

b. Place medians every other parking bay in parking lots containing more than 100 cars.

6.5.6 THE UTILIZATION OF XERISCAPE CONCEPTS IS STRONGLY ENCOURAGED, WITHOUT COMPROMISING THE INTENT TO ESTABLISH SIGNIFICANT VISUAL IMPACT THROUGH LANDSCAPING.



6.3.2 & 6.3.3 PARKING LOT LANDSCAPING: ISLANDS AND MEDIANS.

6.4 LANDSCAPE GUIDELINES FOR THE SITE-WIDE PEDESTRIAN AND OPEN SPACE SYSTEM

The guidelines in this section apply to infrastructure development by the University as well as individual parcel development.

Policy:
Open space areas should appear as "natural" as possible. These Common Open Space Areas are defined in the Master Site Plan.

Guidelines:

6.4.1 Design open space areas as links between individual buildings and building clusters.

6.4.2 Maintenance of existing natural open space should be limited to correcting hazardous conditions, such as broken tree limbs, and removing man-made debris. Selective pruning and reforestation with native plant materials should take place when necessary to protect and propoagate existing plant growth. It is anticipated that the sediment level in the wetlands will need to be closely monitored and major cleaning take place every 10 years.

6.4.3 The dumping or storage of fill dirt, gravel, masonry, surplus equipment, transformers, steel barrels, steel sheds, etc. shall be restricted from all designated open space areas.

6.4.4 Organize paths and corridors with "termination points". For example, consider a seating area, directory, or kiosk.

6.5 WATER CONSERVATION MEASURES FOR LANDSCAPING

Policy:
Water is a finite and extremely valuable resource especially in an arid climate such as Colorado. A significant percentage of our water use goes to the irrigation of grasses and plant materials. Every effort should be made to conserve this precious resource. Within the Research Park an independent supply source for irrigation is available which is a combination of the University's share of New Andersen ditch water from Boulder Creek and water from the storm water recovery system.

Guidelines:

6.5.1 The Master Plan designates areas for various landscape treatments that vary in their water and maintenance needs. Each new building or buildings should provide a well-thought-out landscape design that reinforces the Master Plan goals.

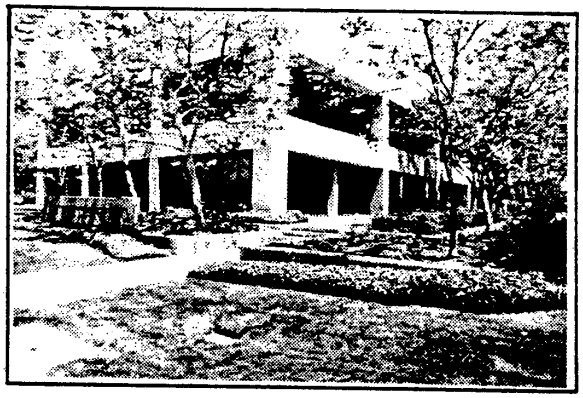
6.5.2 A central control irrigation system is encouraged for the Park.

6.5.3 Design drainage within parcels or pods to drain into retention ponds for use in the landscape irrigation system.

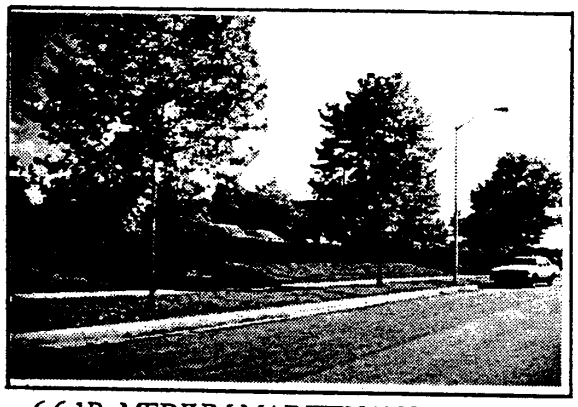
6.5.4 Use of retention pond water will require screened lake intake plus a rapid sand filter (or other acceptable alternative) in order to keep sediment out of irrigation lines.

6.5.5 The irrigation systems within the Park will incorporate water conservation measures. Impulse spray heads are recommended for lawn and ground cover areas, with drip irrigation for shrubs and trees.

6.5.6 The utilization of xeriscape concepts is strongly encouraged, without compromising the intent to establish significant visual impact through landscaping.



6.6.1A HIGH MAINTENANCE (LOCATED VERY CLOSE TO BUILDINGS IN PLAZAS AND ENTRANCES).



6.6.1B MEDIUM MAINTENANCE (LOCATE ALONG PARKWAY AND SECONDARY ROADWAYS).

6.6.1C LOW MAINTENANCE (LOCATED IN ENVIRONMENTALLY SENSITIVE AREAS).

a. Native plants should be used which have minimum watering and pruning requirements.
b. Heavily mulched planting beds will aid in retaining moisture and make planting areas easier to maintain. Prepare soil prior to planting for better water absorption and retention.
c. Similar varieties of native plants that are drought and disease-tolerant should be grouped together.
d. Incorporate a "zoned planting scheme" to reduce water demand.
e. Use native grasses where feasible and limit the use of bluegrass.
f. Incorporate advanced irrigation measures and scheduling.
g. Consider separate irrigation systems on-site, using water from retention ponds.

6.5.7 The East Campus Research Park Irrigation Water Use Mitigation Study prepared as part of the Environmental Impact Study prepared by Wright Water Engineers in June 1987 provides a breakdown of various irrigation water conservation ideas. All building developers are encouraged to read this document.

6.6 SUGGESTED PLANT MATERIALS PALETTE

Policy:
The University has adopted a recommended Plant Palette. Selections should be made from the list (include Appendix "A."). Plants should be used in masses of the same species and rows or clumps of the same trees for a strong visual impact. Random spotting of many different types is not appropriate. Planting should reinforce the Master Plan concepts and complement architectural forms.

Guideline:
6.6.1 Use plant materials included in the plant list provided as an appendix item to this document. Landscape areas are divided into three basic zones:

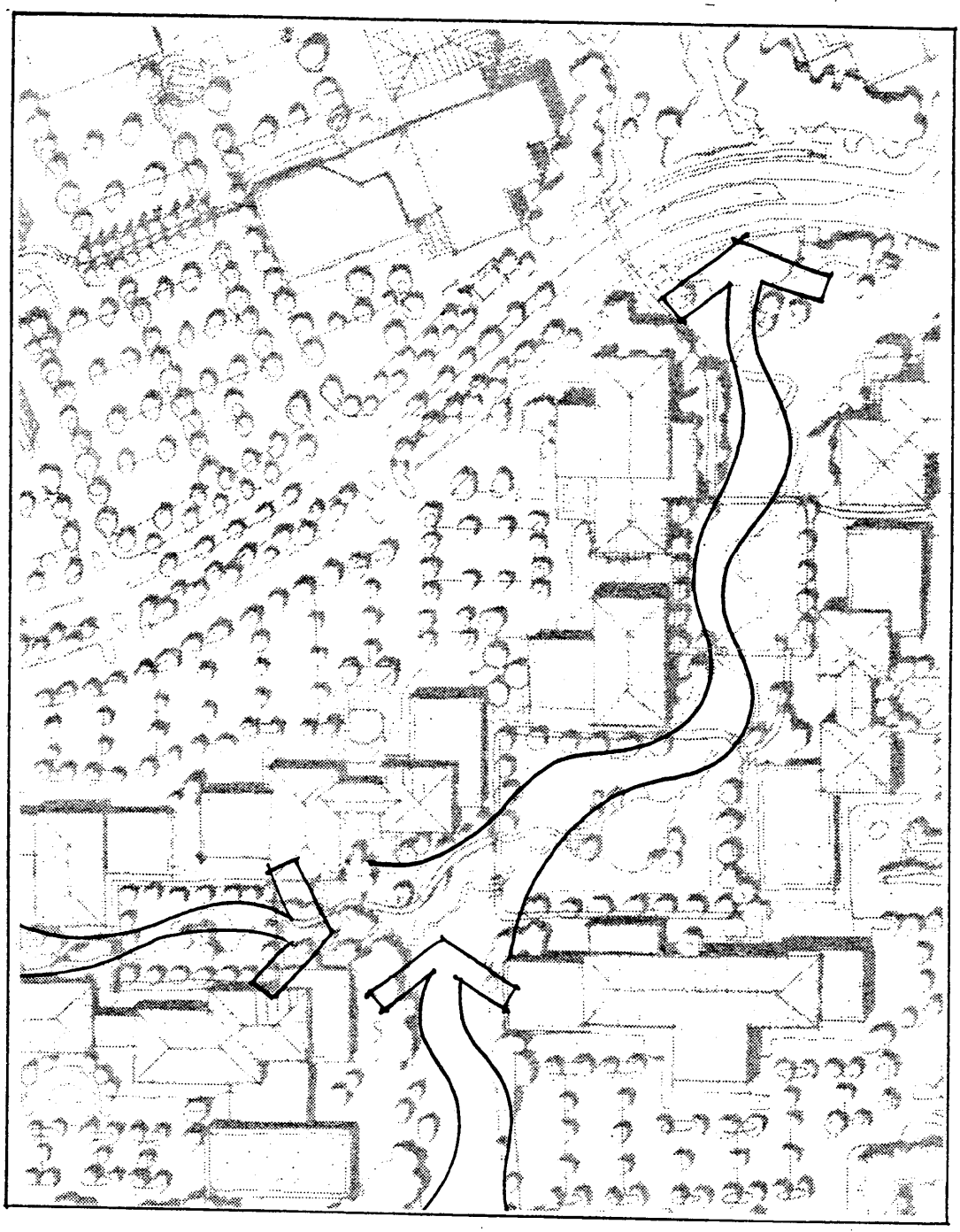
a. High maintenance (located very close to buildings in plazas and entrances and as foundation plantings). This may include:
- Residential type lawns which require weekly mowing
- Formal plantings
- Planters

b. Medium maintenance (located along the Parkway andsecondary roadways and at building entrances - the major public area visible from the road). These may include:
- Grasses which require mowing 2-3 times per month
- Large shrubs
- Large specimen trees

c. Low maintenance (located in environmentally sensitive areas, along waterways and the balance of the site). These may include:
- Natural areas
- Existing vegetation
- Drought resistant plant species
- Meadow-like/open fields
- Wetlands areas.

6.6.2 Base planting schemes on a 4-season plan; select materials which highlight each season:

Spring:	Flowering plants
Summer:	Shade
Fall:	Leaf cover
Winter:	Branch form and texture.



6.7.1 PLACE AND SELECT LANDSCAPE MATERIALS TO REINFORCE EXISTING AIR FLOW MOVEMENT AND MINIMIZE THE POTENTIAL FOR AIR STAGNATION.

6.7 LANDSCAPING AND AIR QUALITY

Policy:
Landscape design should be developed in a way that enhances air quality.

Guidelines:

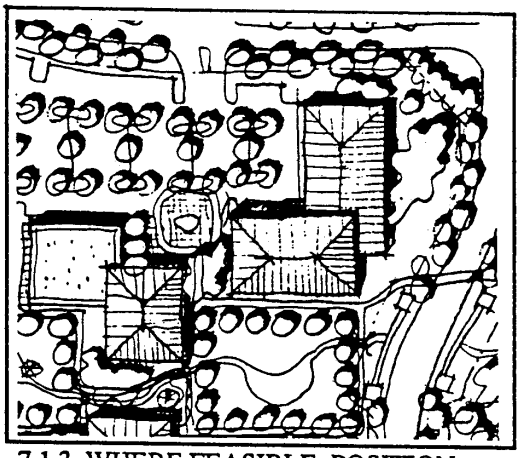
6.7.1 Air Movement

Place and select landscape materials to reinforce existing air flow movement and minimize the potential for air stagnation. The Research Park's Landscape Plan is designed to encourage continuous air movement thereby reducing pollutant build up. The roadways, associated parking lots, and open space transition zones provide a major open space channel through the site, which connects several times to the existing Boulder Creek Corridor and helps create positive air movement. The internalized open space with its waterway lawn and plantings is a secondary north/south air channel which is cooled and "cleaned" by the expanse of planted area. This channel also connects to the Creek.

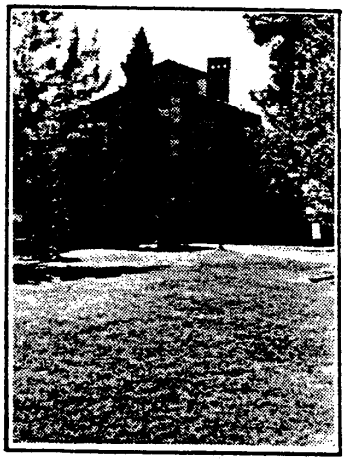
6.7.2 Control of Particulates

Landscape design to control particulates. Trees have high capacity for cleaning dust from the air. Careful selection of vegetation types for planting in the Research Park could assist in reducing the particulate count in the area. Berms and a double row of trees along the Parkway will serve to reduce the movement of dust and particulates. Medians within parking lots and shrub masses along the periphery also help to accomplish this goal.

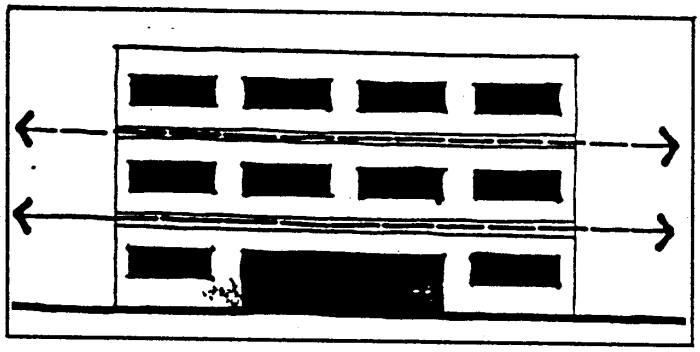
7. ARCHITECTURAL GUIDELINES



7.1.3 WHERE FEASIBLE, POSITION ENTRANCES AND COURTYARDS SO THEY MAY RELATE TO OTHER ADJACENT BUILDINGS.



7.3.1 BUILDINGS SHOULD CONVEY A RELATEDNESS IN THEIR MASSING TO THE OTHER BUILDINGS ON THE MAIN CAMPUS.



7.5.1 EXPRESS THE POSITION OF EACH FLOOR IN THE EXTERNAL SKIN DESIGN.

7. ARCHITECTURAL DESIGN GUIDELINES

These architectural design guidelines apply to all buildings in the Research Park.
The goal of design review is to promote development of high quality architecture and site design that will endure as classic statements of the time. Buildings should convey a sense of state-of-the-art technologies that are housed in the Research Park while avoiding stylistic fads and gimmicks that may quickly become passé. The Park will build out over a number of years, and it is important that structures built early in the project express characteristics that will be shared with sites developed later.

7.1 RELATIONSHIP WITH OTHER BUILDINGS

Policy:
Buildings should visually relate to others in the Research Park.

Guidelines:
7.1.1 Orient buildings so they will not obscure desired views from existing or proposed buildings nearby.

7.1.2 In general, orient buildings orthogonally, along edges of quadrangles, plazas or major pedestrian corridors.

7.1.3 Where feasible, position entrances and courtyards so they may relate to others of adjacent buildings.

7.1.4 Use similar landscape materials for all properties facing major roadways or the same entry plaza area, to establish visual continuity.

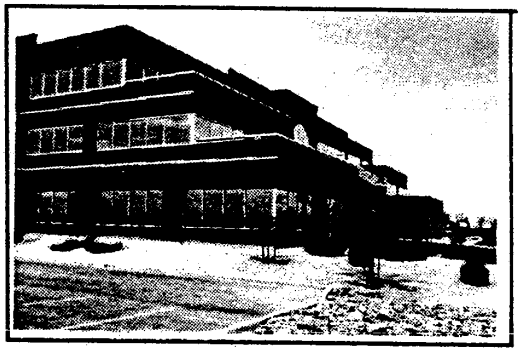
7.2 BUILDING HEIGHTS

Policy:
The overall sense of height of buildings throughout the Research Park should be low in scale. The development should appear closely anchored to the ground. Some contrast in height is expected, however, along the east edge of the site. Specific building scape concepts for individual pods are defined in the Master Plan.

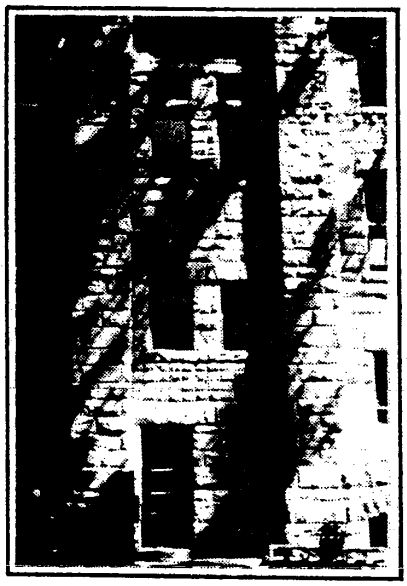
Guideline:
7.2.1 In general builing heights wihin the Research Park shall be as follows:
Pods A, B & C: 1 to 2 story buildings in clusters
Pods D, E, F, & J: 2 to 4 story buildings in clusters or free-standing.
Pods G, H & I: 1 to 3 story multi-user buildings tightly clustered along water course, creating a campus-like character.

7.3 BUILDING MASSING AND FORM

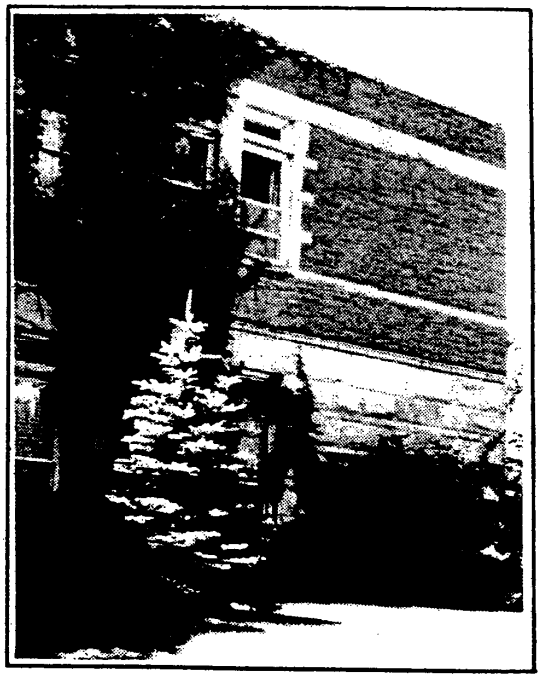
Policy:
Buildings should convey a relatedness in their massing and form with those of the Main Campus. Typically, buildings on the main campus appear to be built up from an aggregation of subordinate volumes. Larger masses are located at the center of the building composition, with smaller forms stepping down from this central volume.



7.3.2 THE USE OF "STEPPED DOWN BUILDINGS" TO BREAK UP LARGER STRUCTURES IS ENCOURAGED.



7.4.2 EXPRESS FADACE COMPONENTS IN WAYS THAT WILL ESTABLISH BUILDING SCALE.



7.5.1 EXPRESS THE POSITION OF EACH FLOOR IN THE EXTERNAL SKIN DESIGN.

Guidelines:

7.3.1 Consider breaking very large buildings into **modules** or sub-parts to reduce perceived scale.

7.3.2 Consider the use of **"stepped down buildings"** to break up larger structures, particularly those over 100,000 square feet or 3 stories and over in height.

7.3.3 Also consider **variations in facade elements** that can reduce perceived scale.

a. Alternatives to step-down buildings are the use of deeply inset windows, inset entrances or step-backs and/or projections in the front line of the building .

b. Variations in color and texture may also be used to reduce perceived mass.

c. Step downs and step backs should follow the terrain and be tiered and reinforced by landscape elements.

d. Variation in roof forms is also encouraged to reduce perceived scale. See Section 7.6.

7.4 BUILDING SCALE

Policy:

Buildings should appear to be in a **"pedestrian scale,"** similar to many buildings on the Main Campus. In general, this is result of the use of familiar forms and elements that can be interpreted in human dimensions.

Guidelines:

7.4.1 On buildings over 60,000 square feet and two to three stories in height, no wall plane may be more than 34.0' feet high without a meaningful use of techniques to break up the perceived building mass.

7.4.2 **Express facade components** in ways that will help to establish building scale.

a. Compositions that emphasize floor lines or that express rhythms and patterns of windows, columns, and other architectural features are encouraged.

7.5 EXTERIOR EXPRESSION OF FLOORS

Policy:

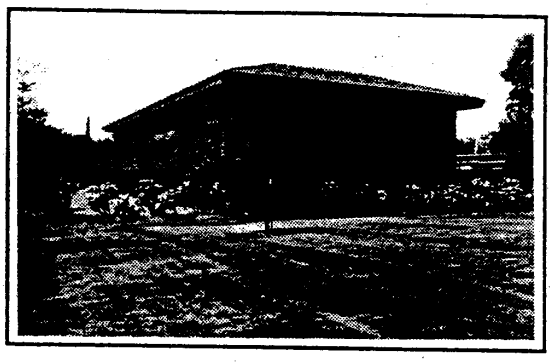
The exterior wall design should help pedestrians establish a sense of scale with relation to each building. The Research Park policy of a campus-like environment requires that efforts be made to prevent the larger buildings from dwarfing the pedestrian. Articulating the number of floors in a building can help to establish a building's scale and break up the bulk of the building.

Guideline:

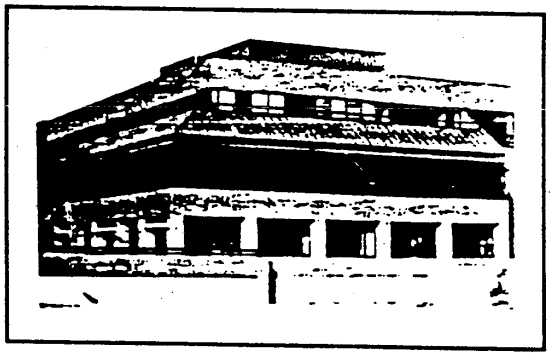
7.5.1 **Express** the position of each floor in the external skin design.

a. Consider terracing, articulated structural elements, or change in materials as methods of defining floors.

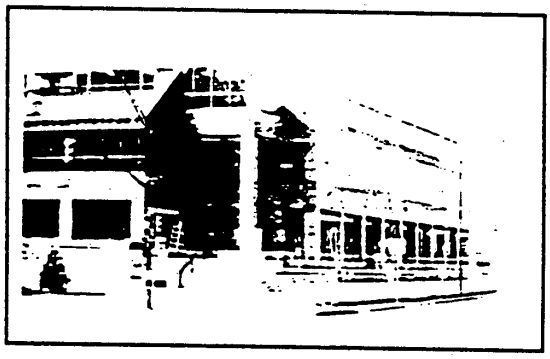
b. Consider using belt courses or other horizontal trim bands, of contrasting color and materials to define floor lines.



7.6.1 INCORPORATE SLOPING ROOF FORMS THAT WILL RELATE TO MAIN CAMPUS.



7.6.2C SLOPING ROOF FORMS ARE ENCOURAGED TO PROVIDE A SENSE OF SCALE AND VISUAL RELATEDNESS TO THE CORE AREA.



7.6.5 LOCATE ALL ROOF TOP EQUIPMENT WITHIN A PENTHOUSE OR SCREENED AREA.

7.6 ROOF TOPS AND ROOF FORMS

Policy:
Roof tops should contribute to the visual continuity of the Research Park, and should be considered as a design element that will be seen from various viewpoints at ground level, from other buildings, and from adjacent perimeter roadways. The sloping, red-tile roofs that are so typical of the Main Campus should be reflected in the Research Park, although dirct imitation of these is not required. What is desired is that the overall texture and form of new roofs in the Park have some of the characteristics of roofs on the Main Campus. Roof forms are predominantly sloping, as seen from the ground level. Gables, hip, and shed roofs are typical. Materials of roofs are strongly textured, especially the tile roofs because of the strong shadow lines they create. Colors of roofs are red earth tones. A mix of roof forms are combined on individual buildings, creating variety in the "roofscape." Roofs are also visually interesting as seen from above, in higher buildings.

Guidelines:

7.6.1 Incorporate **sloping roof forms** that will relate to those on the Main Campus. Consider gable, hipped, or shed roof forms for portions of roof designs.

a. Sloping roof forms that are attached along edges of facades, at parapets, and entraces are especially encouaraged.

7.6.2 Buildings that incorporate a combination of the roof types are encouraged.

a. Use a mix of roof forms to create **variety** in the "roofscape."

b. Roofs should also be visually interesting as seen from above, in higher buildings.

c. Portions of roofs may be **flat**, especially on larger building segments, but some sloping forms shall be visible from major viewpoints.

7.6.3 Roof **color** should be consistent with that found on the Main Campus. Muted red, typical of clay tile, shall be used.

7.6.4 Appropriate **materials** include clay tile, concrete tile, and standing seam metal. Glazed areas developed as greenhouses are also appropriate.

7.6.5 Locate all **rooftop equipment** within a penthouse or screened area. Construct the screen of the same materials as the skin of the building, or of a material similar in color and texture.

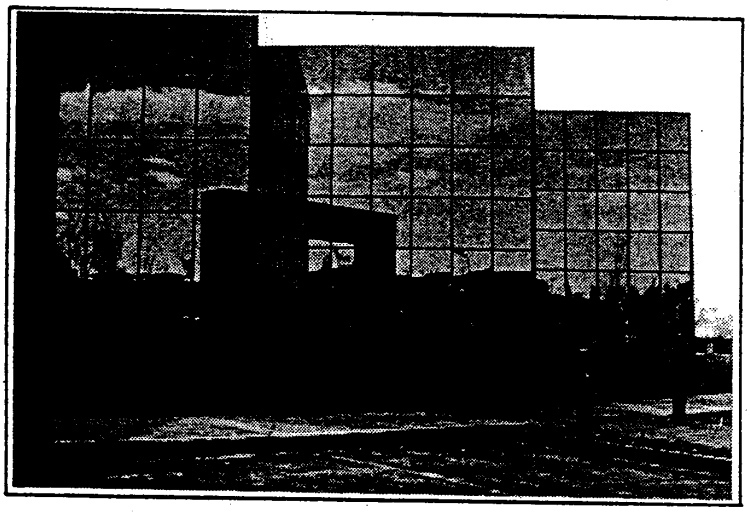
7.6.6 Where feasible, develop roof-tops for **recreation** and open space use.

7.6.7 Landscape all roof tops of buildings that will be visible within designated **view corridors.**

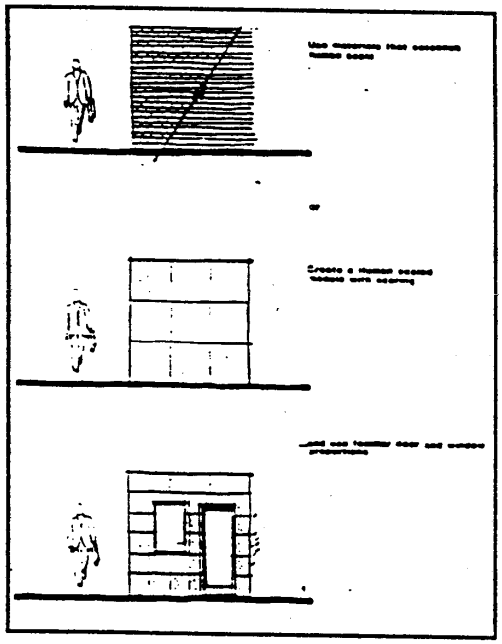
7.6.8 Conceal all **downspouts** from view. Direct downspouts into on-site grass areas where feasible, to minimize run-off

7.7 BUILDING MATERIALS

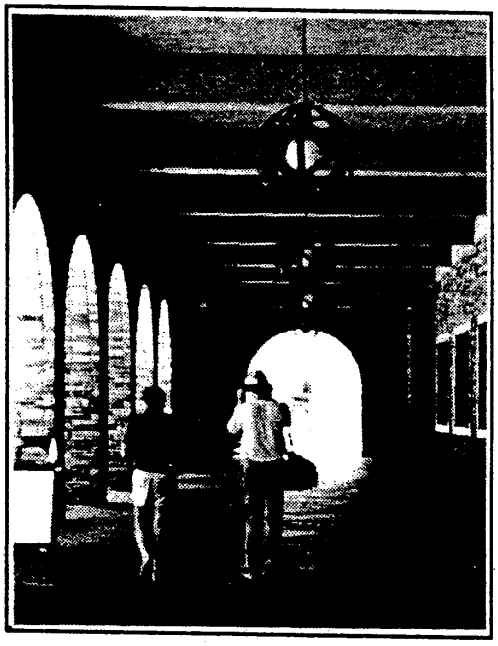
Policy:
Visual continuity in major building materials is desired throughout the Research Park. Materials should be similar in in appearance to those that are prevalent on the Main Campus, especially Lyons sandstone and red brick. Alternative materials that achieve a similar look may be considered.



7.4.3 AVOID USING HIGHLY REFLECTIVE SURFACES.



7.8.1 USE BUILDING MATERIALS THAT ARE FAMILIAR IN THERE DIMENSIONS AND CAN BE REPEATED IN UNDERSTANDABLE MODULES.



9.6.3 COVERED WALKS OR ARCADES ARE ENCOURAGED.

Guidelines:

7.7.1 Basic wall materials should be **muted**. Masonry is strongly preferred.
a. **Matte textures and earth-tone colors**, similar to Lyons sandstone, and red or ochre brick, are encouraged. Textured concrete may also be considered.
b. Wood is inappropriate as a primary material.

7.7.2 Reserve **strongly contrasting materials** and colors for accents, such as at building entrances.
a. Avoid the excessive use of many different facade materials.

7.7.3 Avoid using **highly reflective surfaces** that will generate glare, especially at the pedestrian level.
a. Limit reflective glass to an outside daylight reflective factor of 30% or less. Mirror glass is not allowed except in very limited applications.
b. When allowed, limit reflective glass to no more than 15% of the total surface area of the building.

7.7.4 **High quality**, low-maintenance materials are encouraged.
a. Select building materials that will age with grace.
b. Avoid light colored materials that may streak, fade or generate glare.

7.8 SCALE OF BUILDING MATERIALS

Policy:

Building materials that are manufactured in units **measurable in human proportions** should be used because they help people to interpret the size of a building; brick, tile, and modular stone are examples. Perceiving the scale of the building is important in terms of the pedestrian's ability to relate comfortably to buildings, and to relate to walking distances between buildings, amenities, and parking lots.

Guidelines:

7.8.1 Use building materials that are **familiar in their dimensions** and that can be repeated in understandable modules. This helps to establish a sense of scale. Brick and stone are encouraged.

7.8.2 Combine building materials in **modules** that can be visually measured to gain a sense of scale.
a. **Cast or scored concrete** that gives a sense of proportion may be appropriate as well as conventional modular materials such as brick or stone. Avoid large featureless surfaces.
b. In general, large metal, glass or plastic panels or other **non-modular materials** used in curtain wall construction are inappropriate unless other architectural features can adequately provide a sense of scale.

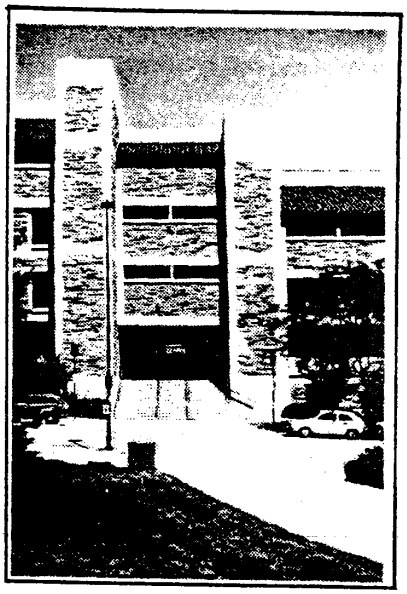
7.9 RELATION OF BUILDING EXTERIOR TO PEDESTRIANS

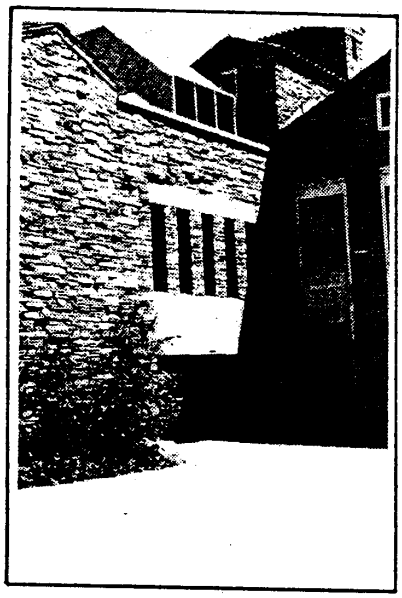
Policy:

Facades with a high level of visual interest both at auto and pedestrian viewpoints, are encouraged. The exterior character of each building should enhance pedestrian activity in the immediate vicinity.

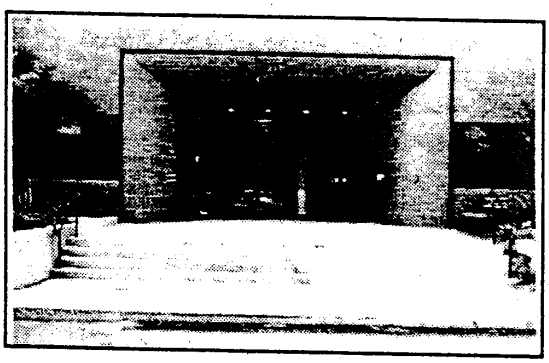
Guidelines:

7.9.1 Design walkways that encourage pedestrian use. Avoid locating walkways where users will be subjected to harsh glare from building materials, or where they will be subjected to harsh environmental conditions.





7.10.1 DEVELOP MAIN ENTRANCES TO BE CLEARLY IDENTIFIABLE FROM PRIMARY DRIVEWAYS AND DROP-OFFS.



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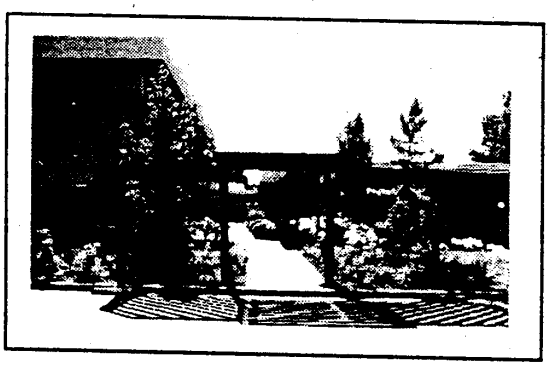


7.10.1 DEVELOP MAIN ENTRACES TO BE CLEARLY IDENTIFIABLE FROM PRIMARY DRIVEWAYS AND DROP-OFFS.

7.10.1 DEVELOP MAIN ENTRANCES TO BE CLEARLY IDENTIFIABLE FROM PRIMARY DRIVEWAYS AND DROP-OFFS.

7.11.2 PROVIDE SEATING THAT IS USEABLE YEAR-ROUND.

7.9.2 Design the **ground floor exterior** of buildings to be "pedestrian-friendly."
a. Decorative wall surfaces and landscape materials are encouraged at this level.
b. Muted, modular materials, such as brick and stone are particularly encouraged at the ground level.
c. Windows that can reveal indoor amenities and activities are encouraged.
d. Avoid large expanses of blank walls or mirror glass at this level.

7.9.3 Covered walks or arcades are encouraged.

7.10 BUILDING ENTRANCES

Policy:
Primary entrances should be easily identifiable and should relate to human scale. Where feasible, entrances should resemble the format established on the Main Campus, in which entrances contrast strongly from their lighter backgrounds.

Guidelines:
7.10.1 Develop **main entrances** to be clearly identifiable from primary driveways and drop-offs.
a. Design building entrances to read as **"dark" areas**, generally black.
b. Consider tinted glass, painted doors, or recessed arrangements that will create a shaded effect.
c. Create a **frame** around doorways, by changing materials from the primary facade material . Consider light grey stone or concrete as a frame.
d. Primary entrances shall be accessible to handicapped users.

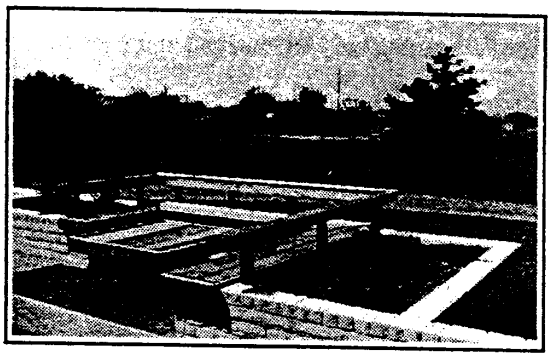
7.10.2 Consider using building entranceways as a **transition** from the building to the ground.
a. Incorporate walls, terraces, grading and plant materials to accomplish a transition from building to ground.
b. Also consider using **terraces or porticos** to define entrances.

7.10.3 Develop **secondary entrances** so they will **connect** to the pedestrian circulation system, and be visible from parking areas.
a. These may be more subdued, and need not follow the characteristics for main entrances.

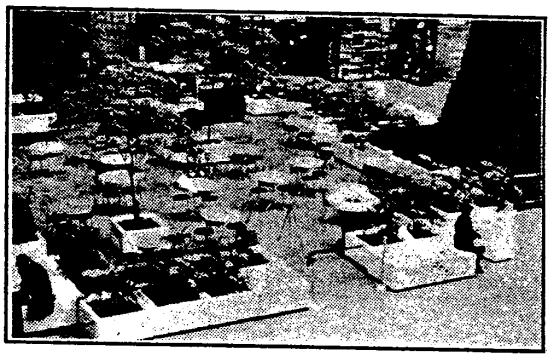
7.10.4 Many buildings will in fact be **"double-fronted,"** in that two facades will look out onto highly visible settings. Buildings that face edges along major exterior roads while also facing into important spaces in the interior of the Park are examples. Although one entrance is dominant, the second entrance is also significant.
a. When two entrances are required for "double-fronted" buildings use the same guidelines for primary entrances.

7.11 OPEN SPACES INCORPORATED IN NEW BUILDINGS

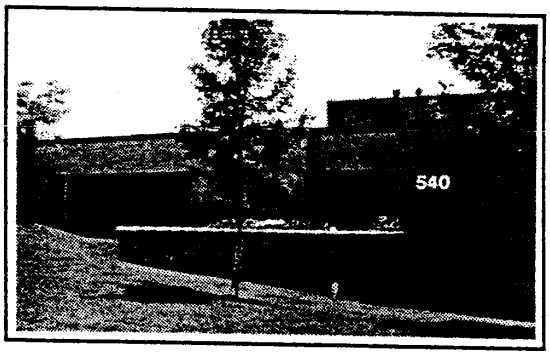
Policy:
Plazas, courtyards, and terraces that are incorporated as public amenities in or between new buildings should be designed to be easily accessible and to be reasonably comfortable for a substantial part of the year.

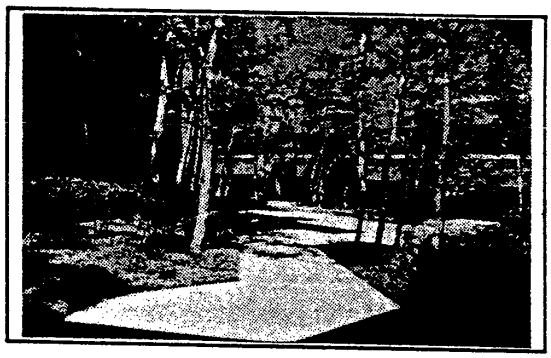


7.11.1 ORIENT OPEN SPACES TO VIEWS OF ACTIVITIES, ARCHITECTURAL LANDMARKS OR NATURAL LAND FORMS THAT ARE VISUAL INTERESTING.



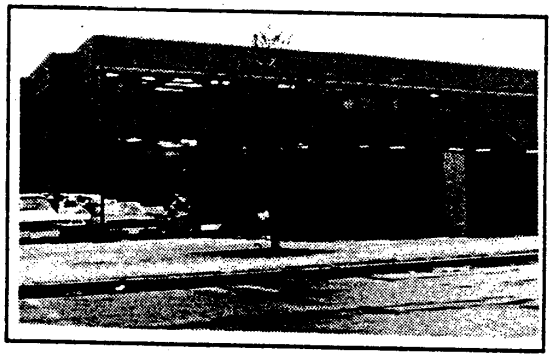
7.11.3 CONNECT OPEN SPACES TO MAJOR ACTIVITIES.





7.11.4 WHERE FEASIBLE, CREATE A SENSE OF CLOSURE FOR OUTDOOR SEATING AREAS.

7.12.1 ORIENT SERVICE ENTRANCES, LOADING DOCKS, WASTE DISPOSAL AREAS AND OTHER SIMILAR USES TOWARD SERVICE ROADS AND AWAY FROM MAJOR STREETS.



7.12.2 SCREEN SERVICE ENTRANCES WITH WALLS OR LANDSCAPING.

Guidelines:

7.11.1 Orient open spaces to views of activities, architectural landmarks or natural land forms that are visually interesting.

a. Consider opportunities to orient open spaces towards designated view corridors.
b. Refer to the Master Site Development Plan for view corridor locations.

7.11.2 Provide seating that is useable year-round.

a. Position seating so it can be buffered from extreme winds, but also take advantage of cooling summer breezes, and warm winter sun.

7.11.3 Connect open spaces to major activities. Consider connections to:

a. Pedestrian circulation routes and outdoor dining areas
b. Recreation areas

7.11.4 Where feasible, create a sense of closure for outdoor seating areas.

7.12 SERVICE ENTRANCES AND LOADING AREAS

Policy:

Service areas should be visually unobtrusive and should be integrated with the site design and the architecture.

Guidelines:

7.12.1 Orient service entrances, loading docks, waste disposal areas and other similar uses toward service roads and away from major streets.

7.12.2 Screen service entrances with walls or landscaping. Use materials similar to others employed on the site.

7.12.3 Coordinate the location of service areas with adjacent developments, so that shared service drives may be feasible.

7.12.4 Avoid placing service areas where they will be visible from adjacent buildings or where they will impact designated view corridors.

7.13 PUBLIC ART

Policy:

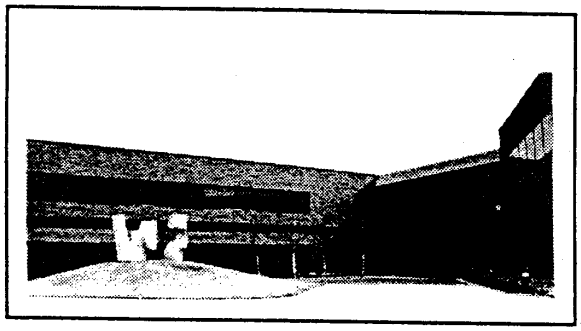
Public art should be encouraged throughout the development. Public art can help to establish a strong visual identity for the Research Park in its entirety, and for individual Pods and buildings within the Research Park. Incentives may bemade available to encourage the use of public art.

Guidelines:

7.13.1 Where feasible, provide public art for buildings larger than 50,000 square feet as a part of the development of each parcel where feasible. Adjacent property owners are encouraged to develop shared artwork (i.e., in shared plaza areas).

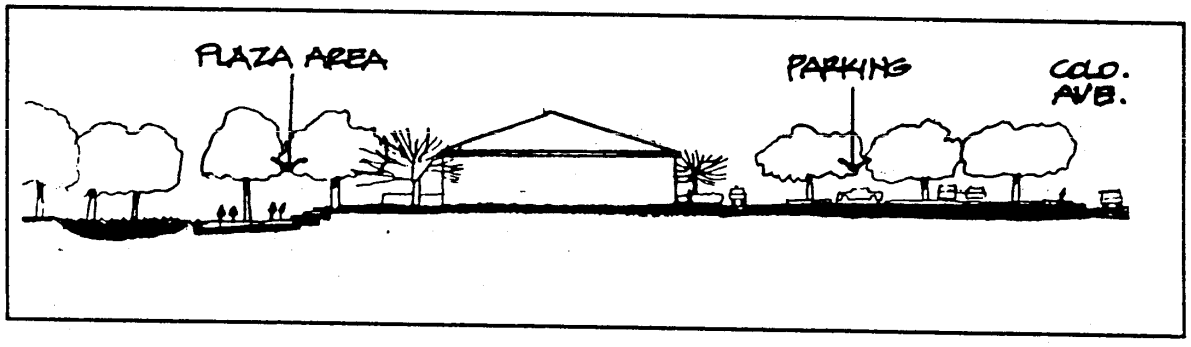
7.13.2 "Art" is defined as any element, sculptural, decorative, or conceptual, that is executed by a professional artist. A "professional artist" is defined as an individual whose primary income is from the execution of art works, or who is recognized in professional artists' associations as a practicing artist.

7.13.3 Locate the artwork so that it is reasonably visible or accessible to the public form a major road, or that is located at the building entrance.

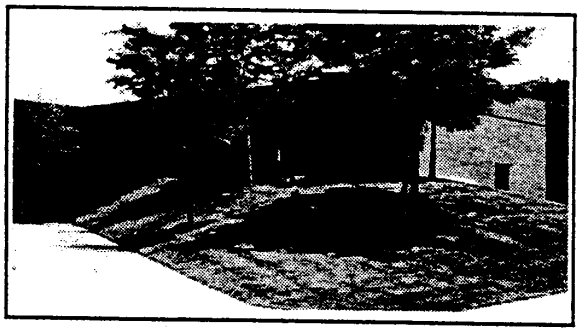


7.13.1 CONSIDER LOCATING PUBLIC ART AT MAJOR BUILDING ENTRANCES.

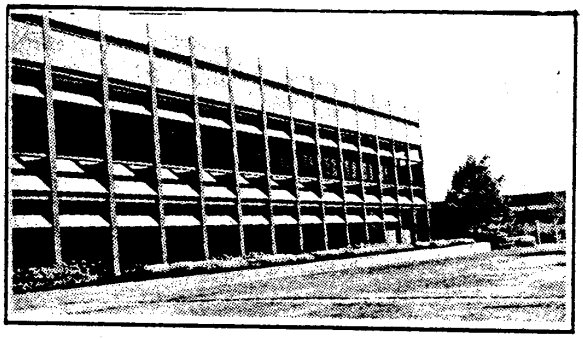
7.13.5 PUBLIC ART THAT INCORPORATES WATER AS AN ELEMENT MAY BE CONSIDERED.



7.16.1 CONSIDER ORIENTING MAJOR BALCONIES, TERRACES AND PLAZAS AWAY FROM THE PARKWAY AND COLORADO AVENUE.



7.14.1 ENERGY CONSERVING CONCEPTS SHOULD BE CONSIDERED.



7.14.1 DAYLIGHTING DESIGNS ARE ENCOUARGED.

7.13.4 The artwork must be on premises for the life of the building, therefore durability of materials should be a consideration. On-going maintenance shall be the responsibility of the building owner.

7.13.5 Public art that incorporates water as an element or responds to air movement will be considered.

7.14 ENERGY CONSERVATION MEASURES

Policy:
Local climatic conditrions give us the opportunity to take significant advantage of passive and active solar energy techniques. Buildings should be positioned and designed to maximize the use of the sun for buiding energy savings considerations, and to respect the solar access requirements of adjacent (existing and proposed) buildings.

Guidelines:
7.14.1 Energy conserving concepts to be considered shall include, b ut are not limited to the following:
- a. Building shape, mass, orientation and placement. Orient buildings to take advantage of prevailing summer winds and to buffer against adverse winter wind conditions.
- b. Building clustering
- c. Types of materials, and their insulation characteristics.
- d. Fenestration, including the placement of all glass and shading devices, and glazing perform ance standards.
- e. Mechanical systems performance standards.
- g. Application of direct solar or photovoltaic energy.
- h. Daylighting.
- i. Earth sheltering with creative land forming.

7.15 WATER CONSERVATION MEASURES

Policy:
Building systems that conserve water should be used where feasible.

Guideline:
7.15.1 Use water conserving fixtures in buildings where feasible. Consider these options:
- a. Restricted flow water outlets.
- b. Lavatory sink flow limiters.
- c. Low flow plumbing fixtures.
- d. Recycling of process and HVAC cooling water.

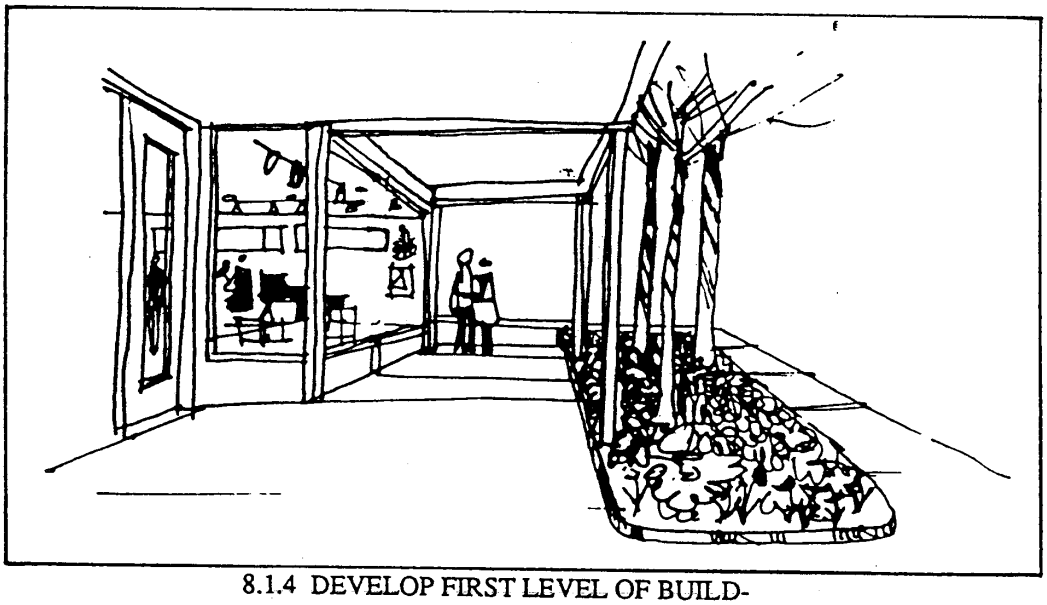
7.16 NOISE INSULATION

Policy:
Buildings along Foothills Parkway should be designed to minimize impacts of road noise on users in buildings and plazas.

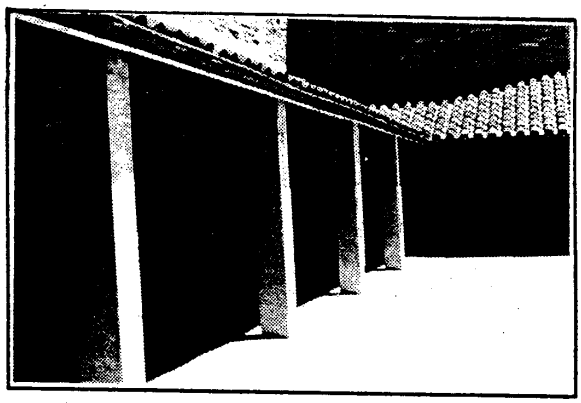
Guidelines:
7.16.1 Consider orienting major balconies, terraces and plazas away from ~~the~~ FOOTHILLS Parkway and Colorado Avenue.

7.16.2 Use wall materials with significant sound transmission coefficient along this edge.

8. SPECIAL DESIGN GUIDELINES FOR INDIVIDUAL BUILDING TYPES



8.1.4 DEVELOP FIRST LEVEL OF BUILDING TO PROVIDE VISUAL INTEREST TO PEDESTRIANS.



8.1.8 USE BUILDING FORMS TO CREATE COURTYARDS THAT MAY BE USED FOR PEDESTRIAN ACTIVITY.

8. SPECIAL BUILDING DESIGN GUIDELINES

These guidelines address unique building types and special sites that require special consideration. They apply in addition to those in Section 7.

8.1 GUIDELINES FOR THE CONFERENCE CENTER AND RETAIL

A conference facility may be developed as a part of the Research Park. The uses in such a facility mandate some design elements that will be different from most other buildings in the Park.

Policy:
Landscape and architectural designs should encourage walking and outdoor activities in conjunction with the Conference Center.

Guidelines:

8.1.1 Intensify the use of decorative paving at entrances to this facility.

8.1.2 Provide easy pedestrian access from parking to ancillary retail services through the layout of parking areas.

8.1.3 Provide clear visibility of entrances and displays from parking areas.

Policy:
The development of the first floor level as an area that is interesting to pedestrians is a primary objective, therefore a "retail orientation" of the first level is required.

Guidelines:

8.1.4 Develop the first level of buildings to provide visual interest to pedestrians.

8.1.5 Consider developing this area as a storefront display, or as some other visually interesting activity or design element. Display cases, dining areas, or decorative wall panels are options.

8.1.6 Avoid large expanses of blank walls that discourage pedestrian window shopping activity.

8.1.7 Pedestrian-oriented ornament and detail are encouraged to enhance retail interest.

8.1.8 Building Form

Policy:
Greater variety of form is appropriate in the Conference Center because of the pedestrian orientation. Because of the retail emphasis, buildings should clearly relate to human scale.

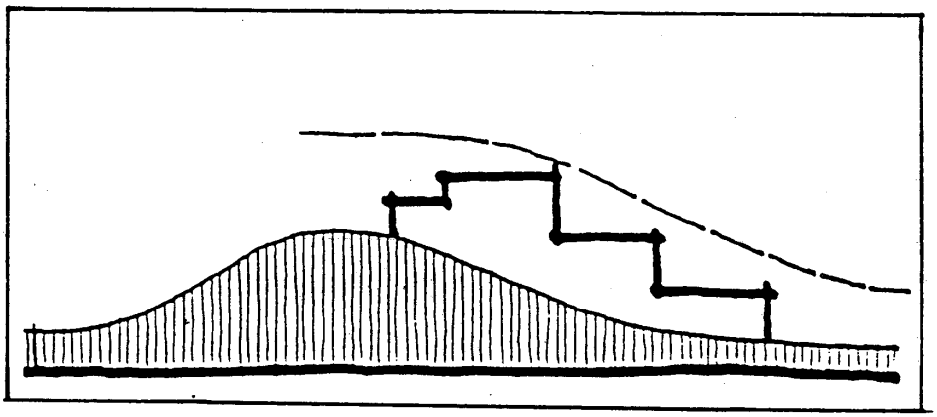
Guidelines:

a. Use building forms that step down in scale along pedestrian routes and at building entrances.
b. Use building forms to create courtyards that may be used for pedestrian activity.

8.2 SPECIAL DESIGN GUIDELINES FOR PODS A, B, C & D

Policy:

Building sites located adjacent to the Boulder Creek Corridor and Open Space should pay special attention to the visual impact created from buildings and parking lots in these areas.



8.4.1 DEVELOP BUILDING FORMS THAT COMPLIMENT EXISTING LAND FORMS.

Guidelines:

8.2.1 Provide landscape buffers and appropriate transitions from building sites to the Boulder Creek open space cooridor. See MSDP for details.

8.3 SPECIAL DESIGN GUIDELINES FOR PODS "D, E, F, G, H, & I"

Policy:

Building sites adjacent to the Foothills Parkway and Colorado Avenue should pay special consideration to the added visibility these sites offer, and to views to the Flatirons and the mountains that are available, both from within these sites and outside.

Guidelines:

8.3.1 Develop "double-front" designs that orient to both roads. Both the Foothills Parkway facade and the primary side facing into the Research Park should appear as a major architectural image.

8.3.2 Orient the primary entrance to the main parking lot.

a. Provide a second "major-entrance" to face the other public side.

8.3.3 Where parking lots occur adjacent to Foothils Parkway, provide landscaping in excess of the general requirement to soften their visual impact from perimeter roads.

a. Landscape a minimum of 15% of the interior parking lot area. See Section 6 for details.
b. Use of decorative paving for visitor parking stalls is encouraged.
c. Define pedestrian walkways within parking lots with decorative paving and low scale lighting.

8.3.4 Provide noise and visual buffers along Foothills Parkway R.O.W. in accordance with the MSDP.

8.4 SPECIAL DESIGN GUIDELINES FOR POD "F"

Policy:

Buildings should reinforce the perception of significant land forms where they exist. Where feasible, building massing and siting should accentuate these forms.

Guidelines:

8.4.1 Respect significant land forms in building designs. Consider these options:

a. Terracing portions of the site to create a stepped effect
b. Cutting buildings into sides of hills
c. Stepping building forms down to reflect hill profiles.

8.4.2 Orient building(s) to maintain views from the Foothills Parkway into the Research Park.

8.4.3 Make those buildings located in Pod F within the view corridor low in profile to maintain views.

8.4.4 See also Section 8.3.

8.5 SPECIAL DESIGN GUIDELINES FOR POD "I"

Policy:

Building sites adjacent to Smiley Court Housing must pay careful attention to the relationship to this residential use.

Guidelines:

8.5.1 Provide a connection from the Smiley Court open space to the pedestrian open space system within the Research Park.

8.5.2 Set back buildings from the property line 1 foot/1 foot of building height.

8.6 SPECIAL DESIGN GUIDELINES FOR SECONDARY BUILDINGS

Policy:

Secondary structures are anticipated on many sites. These should visually relate to the main buildings and should in general contribute to the sense of continuity of the site. The term "Secondary buildings" applies to maintenance sheds, isolated work buildings, guard houses, sewage pump stations, power substations and all other buildings that serve subordinate services to the primary building or buildings on a site. All secondary buildings shall be approved by the Design Review Board.

Guidelines:

8.6.1 Materials shall be similar to those of the primary building.

8.6.2 Integrate secondary buildings into the landscape and circulation plans of the site.

a. Use muted color schemes that tie in with site furnishings.

b. Use plant materials to form buffers or transitions from secondary buildings to other landscaped areas.

c. Locate secondary service structures away from major pedestrian routes.

8.6.3 Sloping roof forms are encouraged.

8.7 SPECIAL DESIGN GUIDELINES FOR HIGH SECURITY BUILDINGS

Policy:

Security buildings are anticipated where access to buildings and sites is restricted. These structures should appear to relate visually to the main building and to the surrounding landscape concept.

Guidelines:

8.7.1 Security Measures

a. For fence guidelines, see Section 11.1.

b. For lighting requirements see Section 9, Exterior Lighting Design Guidelines.

8.7.2 Security Buildings

a. When designing guard houses, repeat the materials and style of the primary buildings.

b. Design security buildings as permanent structures.

c. Where feasible, integrate guard houses into gateway designs that incorporate decorative plantings and landforms.

d. Use muted colors that blend with the landscape.

e. Roofs shall include sloped portions. Roofing materials shall be similar in color to the red roofs of the Main Campus.

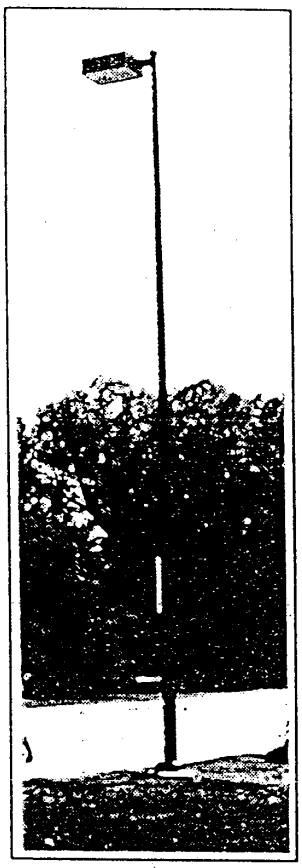
8.7.3 Sense of Building Scale

a. Since window areas are anticipated to be proportionately less than conventional office buildings, it is particularly important that other architectural elements be considered as means of articulating the facade into components that can be interpreted to human scale.

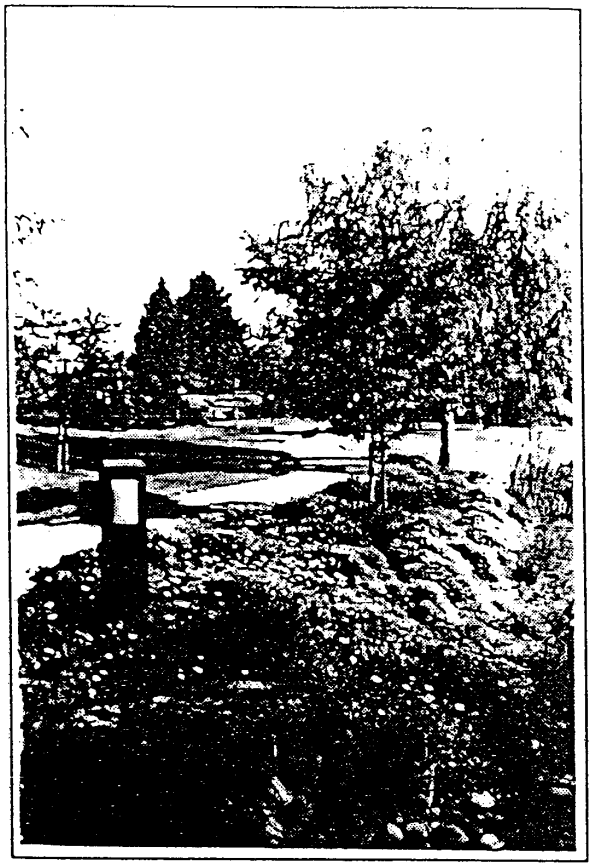
8.7.4 Telecommunications

a. Secured, private telecommunciations equipment may be required for these buildings. If satellite dishes are not screened from view, they must be strongly integrated into the design of the building as a purposeful architectural statement.

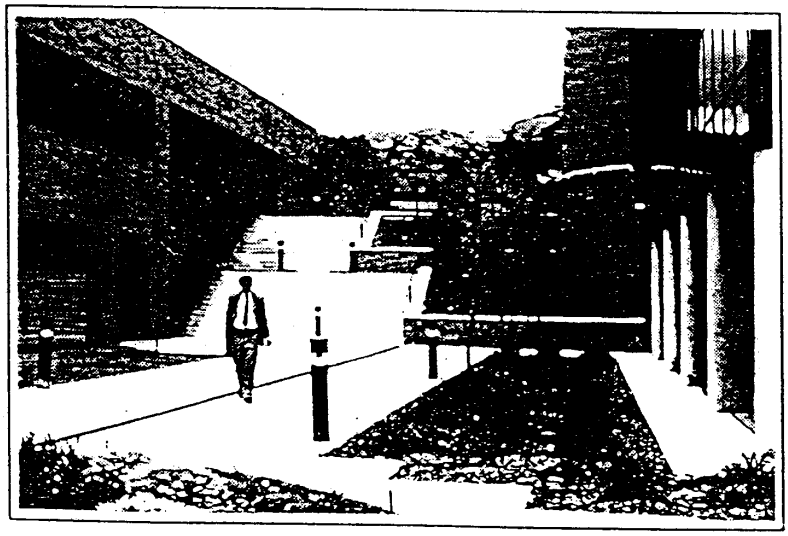
9. EXTERIOR LIGHTING DESIGN GUIDELINES



9.1.1 ILLUMINATE ROADS WITH METAL HALIDE LIGHTING.



9.2.1 USE OF LIGHTED BOLLARDS IS ENCOURAGED TO IDENTIFY PEDESTRIAN WALKWAYS AND DROP-OFF AREAS AT ENTRANCES OF BUILDINGS.



9.2.3 ILLUMINATE ALL PRIMARY WALKWAYS, STEPS OR RAMPS ALONG PEDESTRIAN ROUTES DURING HOURS OF DARKNESS.

9. EXTERIOR LIGHTING DESIGN GUIDELINES

9.1 FIXTURES (LUMINAIRES)

Policy:
Lighting should contribute to the visual continuity of the development and be used in a consistent manner throughout the parcel. The University has adopted a black finish round standard and rectangular luminaire with metal halide lamps for general lighting on the main campus. This system should be continued at the Research Park. Refer to the University of Colorado Boulder Campus Open Space Development Plan for details.

Guidelines:
9.1.1 Illuminate **roads** with metal halide lighting (as defined in the Plan). Make the luminaires stand a maximum of 24.0' in height, have a 250 watt intensity and be located 100' on center on alternating sides of the street.

9.1.2 Illuminate shared **parcel entrances** and along driveways with the same black metal standard and metal halide lamp system. A maximum 18.0' in height and maximum 175 watt light.

9.1.3 For parking areas select metal halide lighting with a **concealed light source** of the "cut-off" variety to prevent glare or "spill-over" onto adjacent buildings.

9.1.4 Glare shields should be installed in new and old fixtures to minimize the amount of light thrown into the sky.

9.2 PEDESTRIAN AND BICYCLE PATHWAY LIGHTING

Policy:
Walkway lighting should be scaled to the pedestrian and should provide for safe use of pathways. Walks should be lighted for the **safe passage** of pedestrians, as should areas which are dangerous if unlit, such as stairs, ramps, intersections, and underpasses.

Guidelines:
9.2.1 Use of lighted bollards is encouraged to identify pedestrian walkways and drop-off areas at entrances to buildings.

9.2.2 Emphasize pedestrian-to-vehicular intersections with appropriately scaled light fixtures.

9.2.3 Illuminate all primary walkways, steps or ramps along pedestrian routes during hours of darkness.

9.2.4 Incandescent or metal halide lamps may be used.

9.2.5 Use building mounted fixtures for walkways or plazas near buildings.

9.3 SITE SECURITY LIGHTING

Policy:
Security lighting is anticipated in some sites, but it should not negatively impact adjacent users.

Guideline:
9.3.1 No light source (bulb) shall be directly visible from adjacent parcels.

9.4 PARKING LOT LIGHTING

Policy:
Parking lot lighting should be unobtrusive, and should not attract attention to itself, but rather provide safe light for orderly functions

Guidelines:
9.4.1 Make all parking lot light fixtures similar in design for all surface parking areas within each cluster of parcels. Rectangular luminaires shall be used on a round standard.

9.4.2 Provide a minimum overall illumination level of 1.5 footcandles within the parking area at 4.0 to 5.0' above ground.

9.4.3 Emphasize pedestrian ways through parking lots with lighting.

9.4.4 Light standards within parking areas shall be a maximum of 18.0' in height.

9.5 PARKING GARAGE LIGHTING

Policy:
Parking garage lighting should provide security and safe maneuvering without creating harsh glare to areas outside the structure.

Guidelines:
9.5.1 A uniformly distributed light level 10 foot candles is recommended for the inside of parking garages.

9.5.2 Design lighting to prevent glare sources when seen from inside or outside the parking structure.

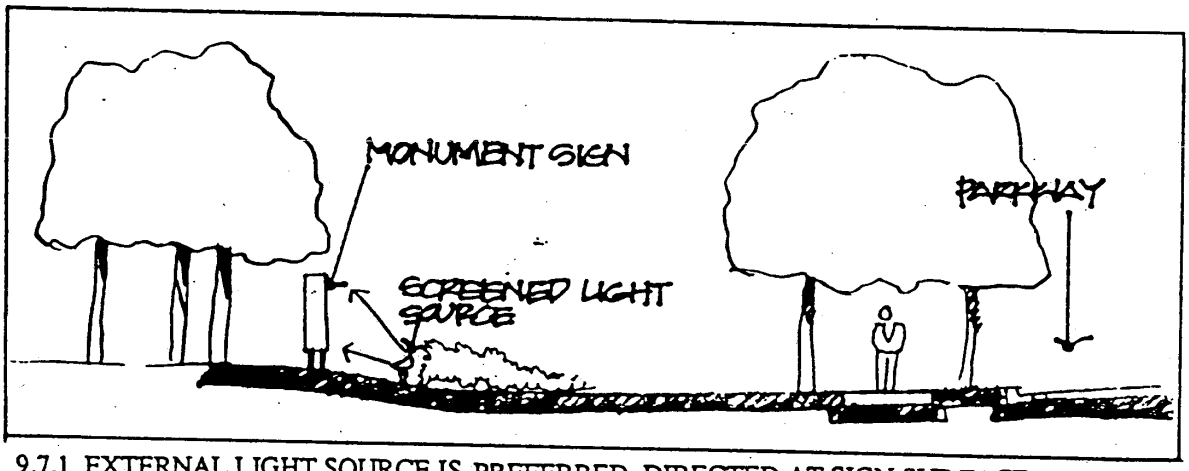
9.6 DECORATIVE ARCHITECTURAL LIGHTING

Policy:
Special lighting that accents building features and creates visual interest should be encouraged, provided that overall continuity is maintained among buildings.

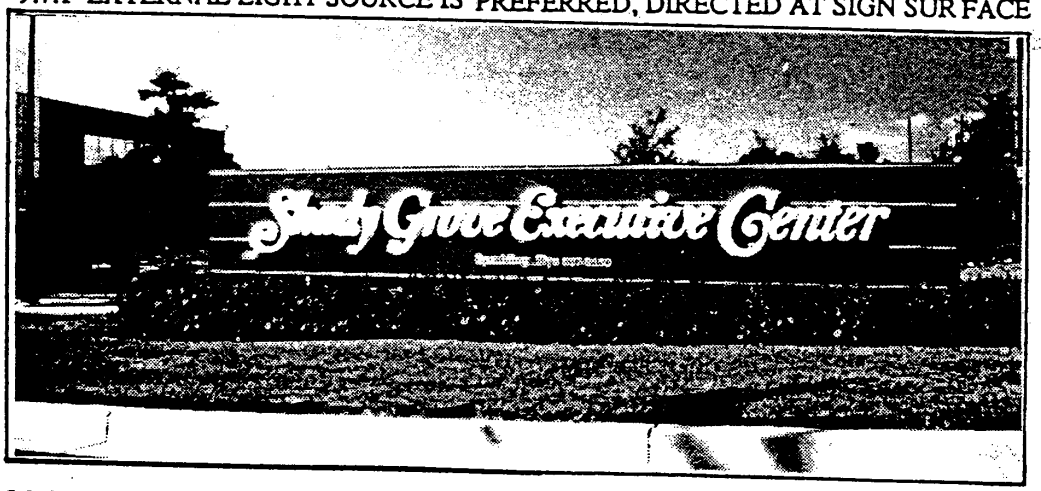
Guidelines:
9.6.1 Design exterior building lighting to reinforce architectural features that help establish scale or provide visual interest.

9.6.2 Consider highlighting entrances, art, terraces, and landscaping.

9.6.1 DESIGN EXTERIOR BUILDING LIGHTING TO REINFORCE ARCHITECTURAL FEATURES.



9.7.1 EXTERNAL LIGHT SOURCE IS PREFERRED, DIRECTED AT SIGN SURFACE



9.7.2 USE INTERNAL LIGHT SOURCE WHERE INDIVIDUAL LETTERS ARE ILLUMINATED.

9.7 SIGN LIGHTING

Policy:
Sign illumination should complement, not overpower, the image of the building and its immediate landscaping.

Guidelines:

9.7.1 External light sources are preferred, directed at the sign surface.
- a. Conceal the light source.

9.7.2 Use internal light sources only where individual letters are illuminated.
- a. Internally lit sign backgrounds are prohibited.

9.8 LIGHT INTENSITY

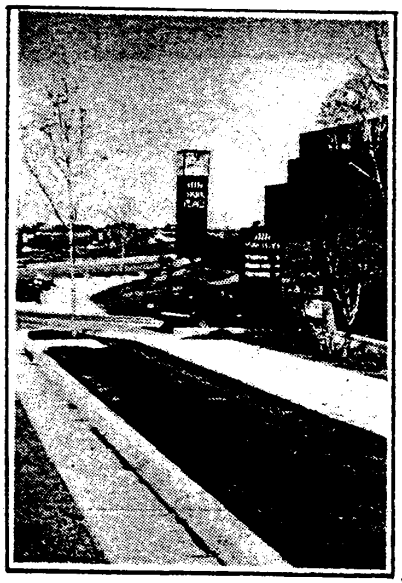
Policy:
The light intensity levels around the Park should vary in response to people-use and potential hazards. The following levels of illumination should be maintained for each of the specific locations:

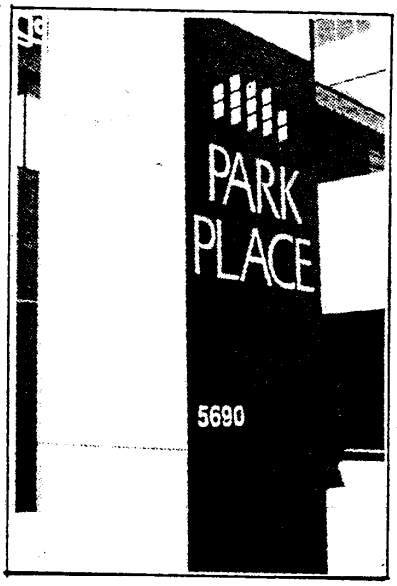
Building Entrances	5.0*
Sidewalks	2.0
Bikeways	1.0
Courts/Plazas/Terraces	1.5
Ramps	5.0
Stairways	5.0
Underpasses	5.0
Waiting Areas	1.0
Parking Lots	1.0
Roadways	1.5

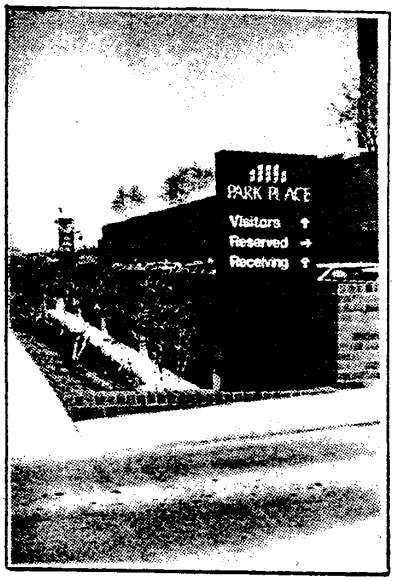
*Values given are in minimum average maintained horizontal footcandles which are measured at the average point of illumination between brightest and darkest areas. 4'-5' above the ground surface. (IES Lighting Handbook - 4th Edition) (Campus Lighting Master Plan, 1973).

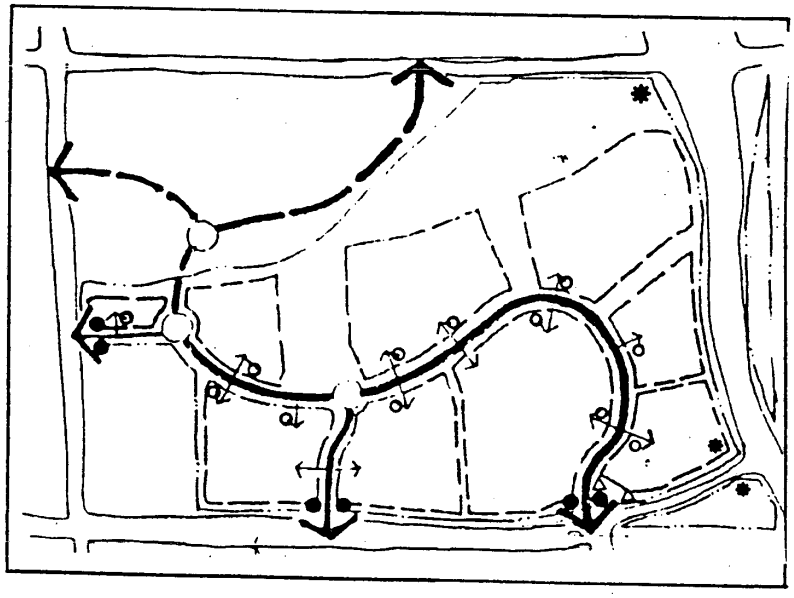
10. SIGN DESIGN GUIDELINES

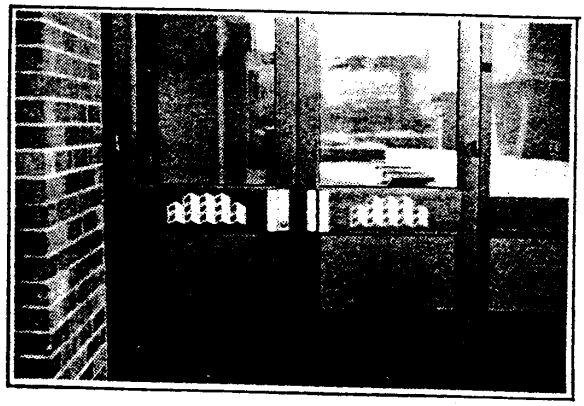
COORINATE GRAPHICS THROUGHOUT THE PARCEL:











KEY

- * - GATEWAY
- ● - RESEARCH PARK IDENTIFICATION
- ○ - PRIMARY POD I.D.
- △ - DIRECTORIES

10. SIGN DESIGN GUIDELINES

These guidelines apply to all exterior signs seen from a public way, including all signs outside of buildings.

Policy:
Signs should contribute to the visual continuity of the entire Research Park, but should be subordinate to architectural and landscape elements. Signs are intended to serve as labels, identifying address and location of businesses and activities. Information that is needed for the visitor to understand the location of business and activities should be presented in a hierarchy.

10.1 HIERARCHY OF INFORMATION

Policy:
Sign systems should be designed that lead the user from arterial and collector roadways to feeder drives, to drop-off and parking areas, and then to major building entry points. This hierarchy shall include the following types of signs (locations are indicated on the facing diagram):

Guidelines:

10.1.1 Gateway

a. The University shall provide primary "University of Colorado" indentification at both the intersection of Arapahoe Avenue and Colorado Avenue with Foothills Parkway. The sign at Foothills and Arapahoe shall be a monument sign. The identification at Foothills and Colorado shall be in the form of a low stone wall.

10.1.2 Research Park Identification

a. The University shall provide project identification at both primary and secondary entries to the Research Park. These shall be monument signs. Secondary entry signs shall be a scaled-down version of primary entry signs.
b. The entry sign shall include the name of the Research Park, along with its logo.
c. No identification of individual building owners, tenants or businesses shall be included.

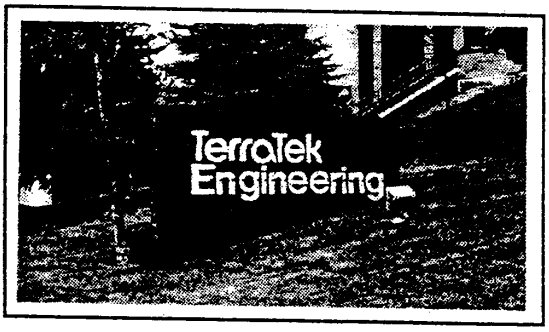
10.1.3 Primary Pod or Building Identification (at entries off Parkway and Secondary Roadways)

a. Locate a special sign for street addresses at the intersection of each driveway with a street.
b. Combine building addresses on a single sign where more than one building or address is accessible from one drive.
c. The design of all Building Address signs shall be uniform, and shall include the logo of the Research Park (the design to be provided by the University).
d. The sign shall be a monument type.
e. No individual business names may be included on these signs, except where there is a single user at a building address, or where a building name is to be used. In either case, the type size of the name shall be subordinate to the building address numbering.
f. Provide building addresses at the primary entrance of each building.
g. Exceptions to this will be evaluated on a case-by-case basis by the Design Review Board.
h. **The Campus Facilities Identification System** shall be employed to determine building address numbers. See Appendix C.

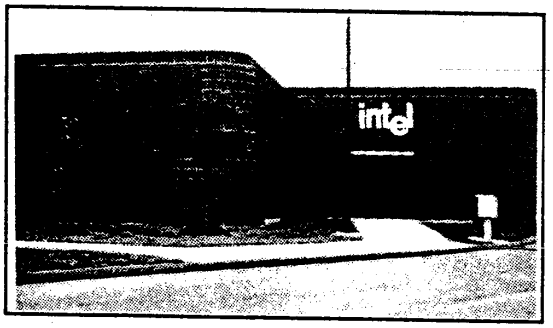
10.1.4 Secondary Building Name Identification

a. Provide building name identification at the entrance to a private drive serving only that building or provide it at the drop-off area of the building.
b. The sign shall be a monument type sign.
c. Where the driveway serves a single user this information may be combined with a building address sign, at the intersection with the street.

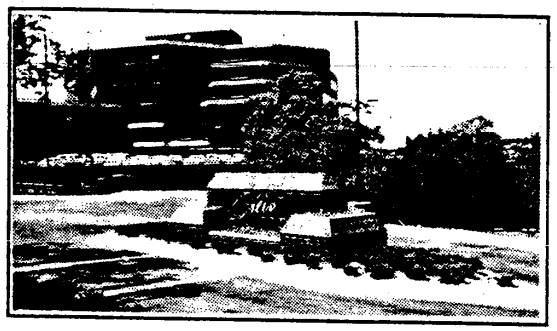
10.1.3 PRIMARY POD OR BUILDING IDENTIFICATION.



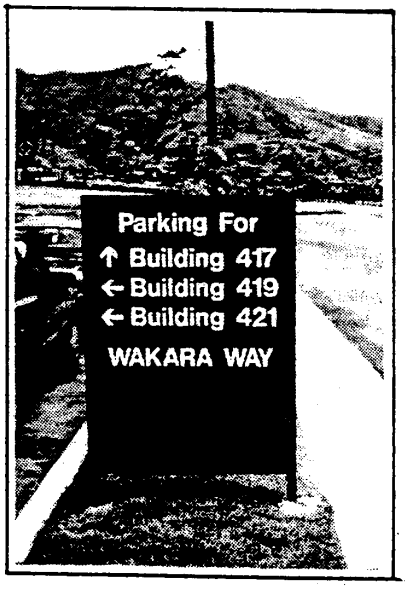
10.1.5 PROVIDE BUSINES IDENTIFICATION.



10.1.4 PROVIDE SECONDARY BUILDING NAME IDENTIFICATION.



10.2.1 USE MONUMENT SIGNS TO IDENTIFY BUILDINGS AT STREET OR DROP-OFF AREAS.



10.1.6 DESIGN FOR TRAFFIC REGULATION AND INFORMATION SIGNS SHALL BE COORINDATED.

d. A symbol or logo associated with the building name is encouraged.
e. Building name identification may also be provided at the main entrance to the building.

10.1.5 Business Identification

a. Provide business identification in a monument sign at the drop-off, or in a flush-mounted sign on the building.
b. Business identification may be combined with building name identification when the building name is located at the drop-off area.
c. Where more than one business occupies a building, identify those businesses in a combined directory.

10.1.6 Traffic Regulation and Information

a. These shall include all traffic regulation signs for street direction, parking restrictions, and service access areas.
b. The design shall be coordinated throughout each cluster of parcels.
c. The design of all traffic regulation signs along the Parkway and secondary roadways shall be provided by the University.

10.1.7 University and Building Directories

a. Include maps and listings of all buildings within the Research Park in special directories.
b. The directory design shall be provided by the University.
c. The locations of the Project Directories are identified in the MSDP.

10.1.8 General

a. Provide signs along pedestrian and bicycle pathways which provide directions to common destinations.

10.2 TYPES OF SIGNS ALLOWED

Policy:
In general, the type of sign used should reinforce the urban campus-like setting of the Research Park.

Guidelines:

10.2.1 Monument Sign

a. Use monument signs to identify buildings at the street or drop-off areas.
b. Afix monument signs to the ground in a continuous connection.
c. Integrate monument signs into landforms or landscaping.
d. Monument signs are required for building identity signs at roadway entrances.
e. Monument signs may not exceed 5 feet in height (measured from grade).
f. Letters on monument signs may not exceed 1 foot in height and must be at least 2 feet above grade.

10.2.2 Pole-mounted Sign

a. Pole-mounted signs are permitted only as traffic regulation signs and may not exceed 7 feet in height.

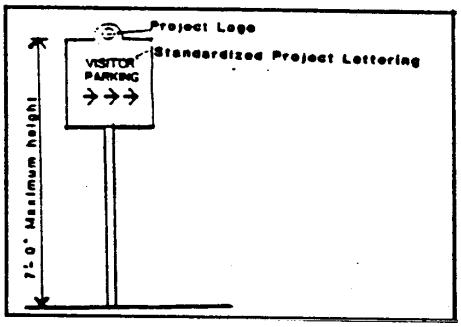
10.2.3 Flush-mounted Signs on Building

a. Flush-mounted signs may be at the first floor only.
b. Maximum area is 8 square feet.

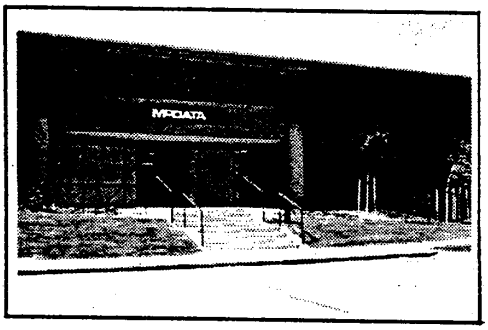
10.2.4 Projecting from Building

a. Signs that project from a building are allowed for ancillary retail uses.
b. Projecting signs may not exceed 4 square feet in area and must be mounted above 7 feet from grade.

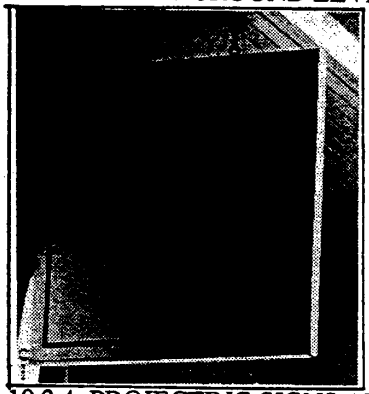
10.2.1 MONUMENT SIGNS ARE AFFIXED TO THE GROUND IN A CONTINUOUS CONNECTION.



10.2.2 POLE MOUNTED SIGNS ARE PERMITTED ONLY AS TRAFFIC REGULATION SIGNS.



10.2.3 FLUSH MOUNTED SIGNS MAY BE USED AT THE GROUND LEVEL.



10.2.4 PROJECTING SIGNS ARE ALLOWED IN THE COMMERCIAL CORE.

10.2.5 Temporary Signs

a. Temporary signs, including construction signs, may be approved on a case-by-case basis, depending on the duration of use.
b. Use materials durable enough to last the expected duration.
c. In general the standards for permanent signs apply.
d. Limit dimensions of temporary construction signs to 4.0' x 8.0'.
e. Maximum of one (1) construction sign per construction site.

10.2.6 Provide **emergency access route signs** in accordance with the City of Boulder requirements.

10.2.7 **Flashing or moving signs** are not permitted anywhere within the Research Park.

10.3 SIGN MATERIALS

Policy:
In general, sign materials should be consistent throughout the parcel.

Guideline:
10.3.1 Stone is preferred as a background material.

a. Stone is the required material for the base of all monument signs.
b. Other masonry materials are also appropriate for monument signs.
c. Information panels of signs shall be painted metal.
d. Wood panels for signs are not permitted.

10.4 SIGN SHAPES AND SIZES

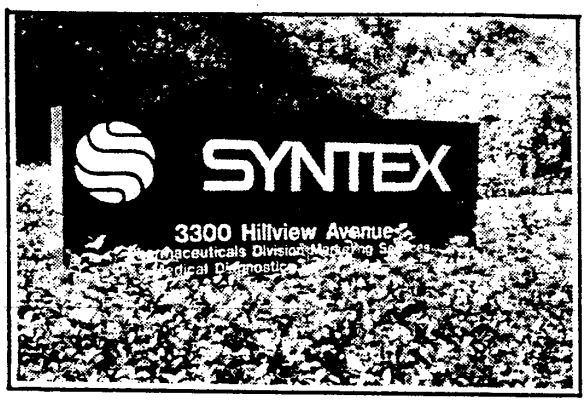
Policy:
Sign forms should be simple and sizes should be modest such that they act as subordinate elements in the landscape.

Guidelines:
10.4.1 Use simple, straight-forward shapes that convey the message clearly. Signs as symbols are encouraged because they are easily read and enhance pedestrian interest.

10.4.2 Corporate logos within the sign are encouraged.

10.5 LETTER STYLES

Policy:
Information of similar nature within the sign hierarchy should in general be in similar style to assist users in negotiating the Park. These should conform to the styles selected for the Main Campus. Individual corporate mark, logos, or identifying typefaces should be encouraged, however, where their familiarity will help users locate buildings and tenants.



10.4.2 CORPORATE LOGOS ARE ENCOURAGED.

10.4.1 USE SIMPLE, STRAIGHT-FORWARD SHAPES THAT CONVEY THE MESSAGE CLEARLY.

Guidelines:

10.5.1 Use Clarendon Standard for building name identification.

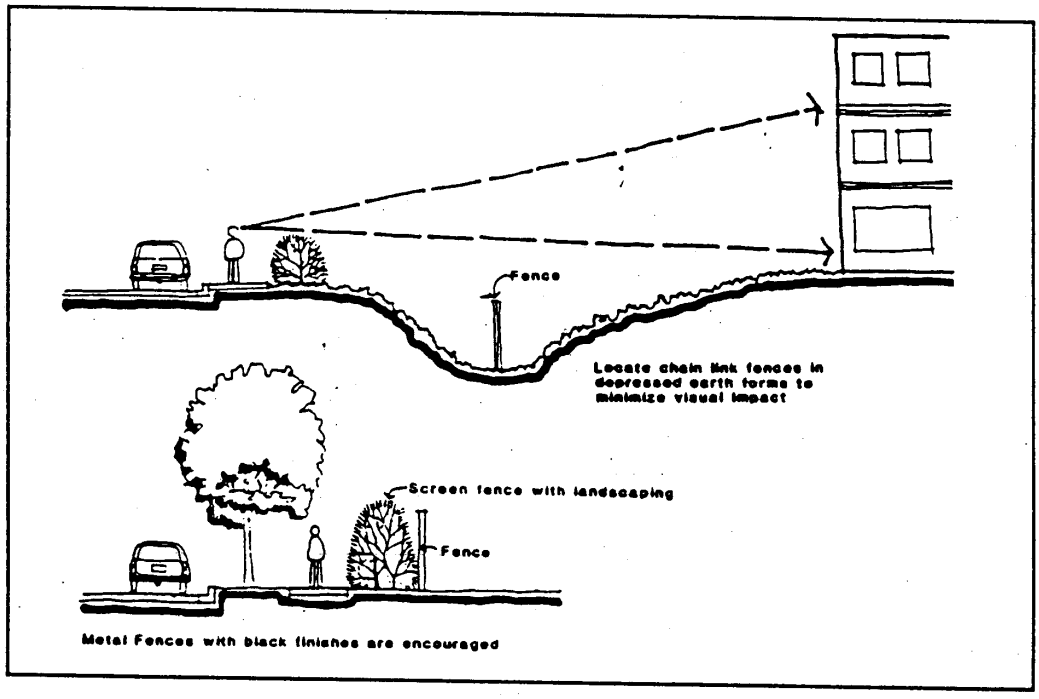
10.5.2 Use Clarendon Standard for kiosk and directory names.

10.5.3 Use Helvetica Medium for traffic regulation signs. The University standard graphic design for traffic regulation shall be used.

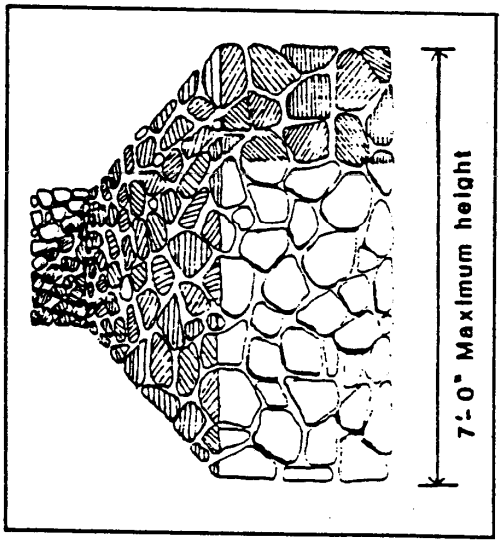
10.5.4 Use Helvetica Standard for headlines in all directories.

10.5.5 Letter styles adopted as part of a corporate image are allowed, however letter styles that are simple and easy to read are especially encouraged.

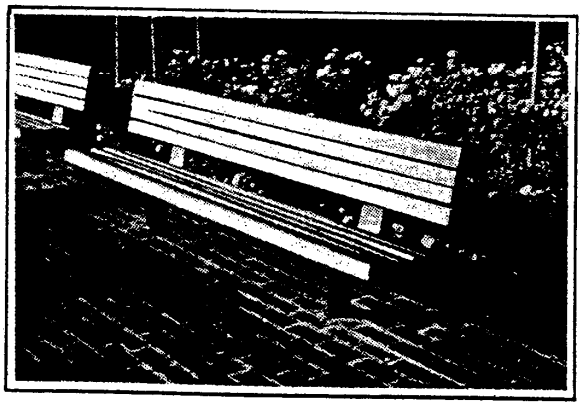
11. SITE FURNISHINGS DESIGN GUIDELINES



11.1 FENCES SHOULD CONTRIBUTE TO THE VISUAL QUALITY OF THE SITE.



11.2 THE USE OF STONE WALLS IS ENCOURAGED.



11.3 LOCATE BENCHES IN AREAS THAT RECEIVE DIRECT SUNLIGHT.

11. SITE FURNISHINGS DESIGN GUIDELINES

Policy:
Major site furnishings include fences, walls, light poles, benches, waste receptacles and planters. In general, a visual continuity of these elements is desired throughout the Research Park. Variation from the norm is welcomed in some areas to provide accents. These tend to be in areas of special character, such as in conjunction with plazas or terraces attached to individual buildings.

Guidelines:

11.1 FENCES

Fences shall be decorative elements that contribute to the visual quality of the site.

a. Metal fences with black finish, similar to wrought iron, are encouraged.
b. In special security areas only, chain link fences may be allowed.
   (1) Vinyl coat all chain link fences in a green, black or brown color.
   (2) Where feasible locate chain link fences in depressed earth forms to minimize visual impact.
   (3) Visually buffer chain link fences with plantings.
   (4) Do not use slats or fabric strung through mesh.
   (5) Use walls for areas that require visual privacy.
   (6) Break up long expanses with periodic columns, insets, or changes in materials.
   (7) Construct fences and walls to withstand storm winds that can exceed 100 mph (161 kph).

11.2 WALLS

a. The use of stone walls is encouraged. See those used on the Main Campus as models.
b. Concrete walls are permitted if faced with stone or scored or textured.
c. In general, wall heights should not exceed 7.0'.

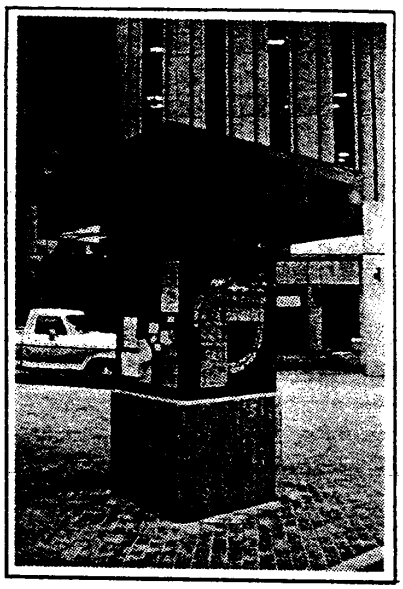
11.3 SEATING

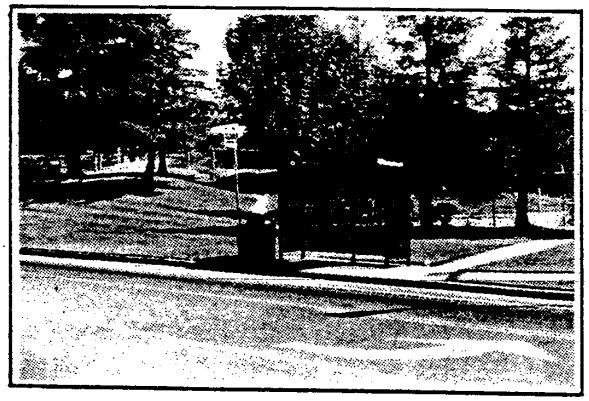
Policy:
Outdoor seating should be constructed of materials which are durable and easy to maintain in order to stand up to the elements as well as vandalism.

Guidelines:
11.3.1 Locate benches in areas that receive direct sunlight in the winter and are sheltered from the winds. Benches should also be located at entry drop-off areas and courtyards.

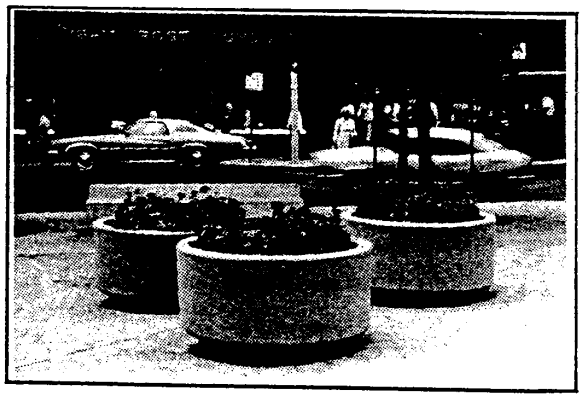
11.3.2 **Bench Construction**

a. Incorporate wood slats in benches for the seat area. Make frames and supports black metal.
b. Provide a comfortable backrest for benches.
c. Allow for drainage between bench slats. Locate benches in areas that receive direct sunlight in winter and are sheltered from winds. Benches should also be located at entry drop-off areas and courtyards.

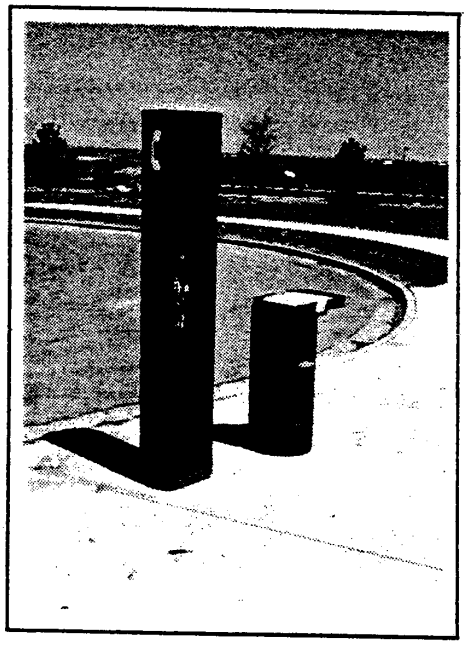




11.4 LOCATE KIOSKS IN AREAS OF INTENSE PEDESTRIAN ACTIVITY.



11.5 DESIGN PLANTERS AND WASTE RECEPTACLES TO COORDINATE WITH OTHER STREET FURNITURE.



11.6.1 PUBLIC TELEPHONE STATIONS SHOULD BE LOCATED IN WELL LIT AREAS NEAR HIGH ACTIVITY CENTERS.

11.4. SHELTERS AND KIOSKS

a. Locate shelters and kiosks in areas of intense pedestrian activity.
b. Materials should be similar to benches.
c. Use sloping roof forms.

11.5 PLANTERS AND WASTE RECEPTACLES

a. Design planters and waste receptacles to coordinate with other street furniture.
b. Materials and colors should be similar to those used for benches.

11.6 OTHER SITE FEATURES

Policy:
Other site features should be coordinated with other major landscape features.

Guidelines:

11.6.1 Telephones
Public telephone stations should be located in well lit areas near high activity centers, such as drop-offs and transit stops.

11.6.2 Trash Dumpsters

a. Trash Dumpsters should be located near the service entrance to each building, and they should be accessible to trucks by means of concrete pavement at least eight feet in width.
b. All dumpsters shall be painted the standard sandy beige used by the University and, when located in primarily public spaces (e.g.,. along major pedestrian walkways), they should be screened by landscaping or walls.
c. Locate in clusters, to be shared by users, where feasible.

11.6.3 Vending Machines

a. **Group** newspaper vending machines in pedestal mounted racks.
b. Select **locations** near activity centers and principal entry points to campus.
c. All pedestal or wall mounted items that project into circulation spaces must not be installed higher than 27" above grade. Projections above this height cannot be "seen" by white cane users and become a hazard to these persons.
d. Screen side and rear panels with hedges or walls.

12. ENVIRONMENTAL PERFORMANCE STANDARDS

12. ENVIRONMENTAL PERFORMANCE STANDARDS

Policy:

Research and related activities shall be established and maintained to provide that each user shall be a good neighbor to adjoining properties by the control of noise, odor, glare, vibration, smoke, dust, liquid wastes, radiation, radioactivity, toxic materials, and any other factors considered to be offensive or safety hazards.

All City, State, County and Federal regulations and laws must be followed.

13. DESIGN GUIDELINES FOR CONSTRUCTION SITES AND TEMPORARY FACILITIES

13. DESIGN GUIDELINES FOR CONSTRUCTION SITES AND TEMPORARY FACILITIES

These guidelines apply to construction sites and to temporary facilities that may be installed by building users. All temporary structures must be approved by the Design Review Board.

13.1 SITING OF CONSTRUCTION STAGING AREAS

Policy:
Construction sites should be sited to minimize impacts on adjacent properties and circulation systems.

Guidelines:

13.1.1 Locate construction staging areas away from view of Parkway and secondary roadways as much as possible.

a. Set back the edges of fenced staging areas a minimum of 40 feet from these roadway curbs.

13.1.2 Locate staging areas away from major pedestrian routes where feasible.

a. Set back the edges of fenced staging areas a minimum of 30 feet from these routes.
b. Screen edges that abut pedestrian routes where feasible.

13.2 STORMWATER MANAGEMENT AND DRAINAGE

Policy:
Construction work can create temporary drainage conditions with the potential of introducing debris and dirt into ponds and streams. Temporary drainage control methods should be used to minimize these negative impacts.

Guidelines:

13.2.1 Design all construction areas to minimize impact on water quality of ponds and drainage ways on or adjacent to the site.

13.2.2 Along temporary drainage ways, use hay bales to trap sediment prior to its entering a natural drainageway.

13.2.3 Control erosion from stockpiled fill dirt by using filter fabric or mulches.

13.2.4 Revegetate bare soil promptly.

13.2.5 Fence edges of riparian zones to prevent potential intrusion by heavy machinery.

13.2.6 Both site and erosion control plans must be consistent with DRCOG and approved prior to construction.

13.3 VEHICULAR ACCESS TO CONSTRUCTION SITES

Policy:

Construction-related traffic should be planned to minimize disruptions to general public site circulation systems.

Guidelines:

13.3.1 Locate access drives to construction sites as close to external roads as possible, to minimize the amount of construction-related traffic internal to the Park.

13.3.2 Avoid locating access drives in areas where significant numbers of turning movements by public traffic is anticipated, or where stacking lanes for turning and queuing lanes for security check points are planned.

13.4 PEDESTRIAN AND BIKE WAY SYSTEM IMPACTS

Policy:

Construction sites and traffic should not cause disruption of pedestrian and circulation systems that connect parcels within the Park. Hazardous conditions, such as crossing of traffic, or obscuring sight lines at intersections should be avoided.

Guidelines:

13.4.1 Fence edges of pedestrian routes and bike ways to prevent potential intrusion by heavy machinery.

13.4.2 Avoid locating staging areas and access drives where they will block established pedestrian routes and bike ways.

13.5 CONSTRUCTION PARKING

Guidelines:

13.5.1 Locate construction parking away from view of primary and secondary roads.

13.5.2 Identify construction parking with signs in conformance with Section 10.15.

13.5.3 Avoid locating driveway entrances into construction parking where it will conflict with turning movements into parking or drop-off areas of adjacent users.

13.6 LANDSCAPING

Guidelines:

13.6.1 Where extended construction periods are anticipated, consider installing plant materials along fenced edges of staging areas. Select plant materials that may later be relocated for permanent use on the site.

1.3.7 TEMPORARY STRUCTURES

Guidelines:

13.7.1 Construction trailers and related buildings shall appear in well-maintained condition at all times.

13.7.2 Muted earth-tone colors shall be used on all temporary structures.

13.8 LIGHTING

Policy:

Lighting for construction and storage areas should not generate spill-over glare onto adjacent sites.

Guidelines:

13.8.1 Use cut-off or light shielding devices.

13.8.2 Focus lights so they do not shine onto adjacent buildings or open space areas.

13.9 SIGNS

Policy:

Temporary construction signs should be graphically coordinated through a site and present an orderly impression at all times.

Guidelines:

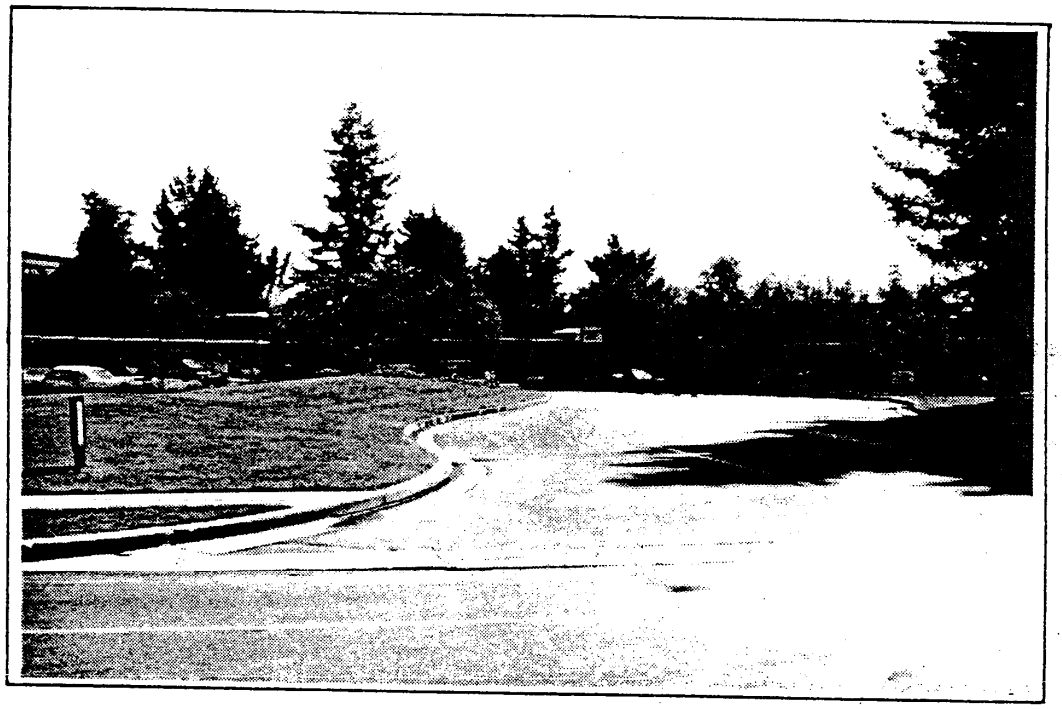
13.9.1 The general guidelines for signs in Section 9 also apply to construction signs, with these exceptions:

a. Wood may be used for construction sign panels.

b. Signs located within controlled storage and staging areas that provide instructions to construction workers may vary from the size limits defined in Section 9.

13.9.2 Construction signs shall be well-maintained at all times.

13.9.3 Uniform graphics and color schemes shall be used for all construction-related signs within an individual construction site.



13.10 SECURITY DEVICES

Policy:
Providing security for construction materials stored on-site is expected to be an on-going need throughout the Park during early build-out. Barriers to restrict access to dangerous construction conditions are also expected. Although it may not be feasible to completely visually mitigate these measures, every effort should be made to minimize the visual disruptions that temporary fences and screens may create.

13.10.1 Where feasible, use solid panels in fences or walls to screen stored construction materials. Chain link fences may be considered, however.

a. Where feasible, buffer fences with plant materials.
b. Locate storage sites out of view of major roads and drives.

13.11 UTILITIES

Guideline:
13.11.1 Temporary power and telephone lines may be pole-mounted.

a. Overhead lines may remain in place for a maximum of 9 months, during construction of related buildings and facilities.
b. At the earliest feasible time, underground lines should be activated.

13.12 SERVICING AND DELIVERIES

Policy:
Construction deliveries should be planned to minimize disruption to surrounding users.

Guidelines:
13.12.1 Schedule major construction materials deliveries at times that do not conflict with typical morning and evening rush hours.

13.12.2 Locate unloading areas where they will not block traffic on drives and streets.

13.13 TREE PROTECTION

Policy:
Existing trees on construction sites and on adjacent areas, except those to be removed, shall be protected from injury.

13.1 Fence or barricade at the drip line those trees to remain in the work area.

13.2 Maintain natural cover of duff around root systems. Stockpile duff or replacement, if necessary.

13.3 Place stockpiles for topsoil and excavated material so that there will be no slough-off onto root systems of adjoining trees.

13.4 Locate stockpiles, temporary buildings, or other obstructions outside drip line of trees to remain.

13.5 Dispose of solvents, oils, and other materials which may be harmful to plant life in containers and remove from site. Remove and replace contaminated soil with good soil, at no expense to owner, on completion of work.

13.6 Trees shall be watered at intervals of not more than 14 days during the entire construction period by forming suitable dikes and/or soaking devices at the drip line and applying approximately 6 inches of water each time, and as directed. Water frequency during winter rain season may be reduced upon approval of the campus landscape architect.

13.7 Roots greater than 1 inch in diameter shall not be cut without advance notice to the campus landscape architect.

13.8 Trees shall not be pruned except by specific instructions of the campus landscape architect and only then by qualified tree-pruning personnel.

13.9 No diesel or gasoline engine equipment shall be left running or parked under trees within the drip line.

13.10 Protect existing trees against unnecessary cutting, breaking or skinning of the roots, skinning and bruising of the bark, smothering of trees by stockpiling building materials or excavated materials within the drip line, excess foot or vehicular traffic, and parking of vehicles within the drop line. Tree branches extending over a roadway which will be in the way of construction shall be trimmed only with the approval of the campus landscape architect and under the direction of the campus landscape architect's representative. Trees to be so trimmed shall be cut close to the boles in a manner such that the tree will present a balanced appearance. Scares resulting from the removal of branches over 1" in diameter shall be treated with a heavy coat of an approved tree paint.

13.11 The campus landscape architect will tag all trees to be removed. Trees shall be felled in such a manner as not to injure standing trees, plants, and improvements which are to be preserved. Removal includes new and old stumps of trees and their roots.

13.12 Contractor will be held responsible for care and preservation of existing trees and other plant material that are marked for protection. He shall repair, replace, or clean at own expense and to the campus landscape architect's satisfaction, parts of them injured, damaged or disturbed because of his work.

University of Colorado

Boulder | Colorado Springs | Denver | Anschutz Medical Campus

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DESIGN REVIEW BOARD PROCESSES AND PROCEDURES

AUGUST 5, 2015

Message from the President

The University of Colorado Design Review Board (DRB) is the second-oldest established academic and higher education review board in the United States. The history and legacy of the past Design Review Board members speak volumes about its national prestige and importance to the University of Colorado. Hideo Sasaki, Pietro Belluschi, Bill Muchow, Dwayne Nuzum, Eldon Beck, John Prosser, Jerry Seracuse, and several other noted architects and landscape architects have served as members of the Design Review Board since the 1960s.

The DRB guides the planning and design of all four campuses according to their respective master plans, planning and design guidelines, and the specific development program. I entrust to the members of the DRB the challenge of preserving our rich history of thoughtful planning and design in such a manner that each new site and building is in context with the campus and a tribute to our academic heritage. Their task is twofold as guardians of our principles in campus planning and architecture, and as advocates who actively encourage and provoke remarkable and sustainable design that is functional and inspirational. The members of the DRB act on my behalf in providing faculty, administration, students and outside consultant groups with advisory expertise that adds value to all four campuses. I value and trust each DRB member to represent the highest and best planning and design standards for our university projects.

While the funding, financing and method of construction continue to be accelerated to meet our fiscal and contractual obligations, I want to underscore my commitment to thoughtful, meaningful and appropriate planning and design. Although construction project schedules may be more aggressive, the quality of planning and design shall never be compromised. The DRB Processes and Procedures reflect these practical realities while they also encourage and require exceptional planning and design requirements for all CU projects.

To this end, the members of the University of Colorado DRB are my appointed stewards and guardians of all that has been planned and designed with a distinguished history and legacy. They are my trusted associates in encouraging purposeful and outstanding planning and design for many generations. To this, I am deeply committed.

Bruce D. Benson, President
University of Colorado

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I. INTRODUCTION

The University of Colorado Design Review Board (DRB) is composed of uniquely experienced professional architects, landscape architects and planners appointed by the university president. Its mission is to review and advise parties charged with the design and development of proposed capital planning and development projects at all campus properties under the control of the CU Board of Regents. The DRB is charged with helping each campus maintain a commitment to design excellence. The following information is a reference guide for university staff and architectural/engineering (A/E) consultants involved in the design of campus buildings and site development.

A. The DRB is specifically charged with:

- Reviewing and advising appropriate campus officials on the facilities portion of campus master plans and the development of land-use plans, with particular concern for aesthetic, functional and physical characteristics of the individual campus.
- Reviewing and consulting on project design for new construction, major renovations, building additions and all aspects of the built environment to ensure consistency with the campus master plan and design guidelines.
- If requested by the campus architect, serving on each campus's architect selection committee.
- Being sensitive to the complicated nature of providing architectural services and seeking appropriate ways to work with project architects in expediting reviews and design input early in the process.
- Other charges assigned by University of Colorado Administrative Policy Statement 3002, *Capital Construction Planning and Projects, Appendix 3.*

II. SCOPE OF DRB REVIEW

The DRB examines all site development and exterior architectural components for projects on the university's campuses. The DRB is actively involved from the initial stages of pre-design through design development. Below are the specific project-related items the DRB shall review and evaluate:

- General campus character consistency and continuity
- Building siting, massing, urban design, expansion, materials selection, and architectural design and character
- Campus landscapes, including design, plant selection and location
- Vehicular circulation routes, patterns, parking lot locations and parking ratios
- Pedestrian circulation routes, patterns, amenities and materials
- Campus site furnishings, lighting and signage design, location and quantity
- General campus infrastructure systems (not utilities)
- Building performance, and sustainable and integrated design methods and materials as they relate to the above



III. ADMINISTRATION

A. Management

The vice president for budget and finance, or his/her designee at the CU system office (ex officio DRB membership), is responsible for the administration and management of the DRB and reports directly to the president of the university on all DRB matters.

B. The Role of the DRB Chairperson

The chair of the DRB is appointed directly by the president of the University of Colorado. The chair oversees all DRB meetings, formal and informal, and strives to set a constructive tone for all members. The chair meets regularly with the vice president for budget and finance (or his/her designee) and on occasion with the president to refine and resolve project design as defined by scope and budget. The chair reviews agendas, meeting records, DRB meeting schedules and, as needed, any board-related documents before issuance to project teams or to the public. The chair will appoint a member of the DRB as acting chair in the event of his/her absence. The chair guides and mediates the actions of the DRB with respect to university Administrative Policy Statement 3002.

C. The Roles of the Campus Liaison and the DRB Project Representative

Each campus has an appointed and designated campus liaison to the DRB, who shall be the campus architect or facilities director. The campus liaison is responsible for selecting a DRB project representative for all major capital improvement projects, coordinating DRB review with the CU system office and submitting to the DRB the planning and design submittal work products that demonstrate project conformance with campus master plans, design guidelines and other DRB requirements necessary to accomplish the DRB evaluation. Each campus shall develop procedures to meet both the needs of the DRB and internal campus requirements.

To ensure continuity and appropriate communications between the DRB and the university staff and administration, the following DRB review procedures have been instituted. For each major campus capital improvement project, the campus liaison may appoint a qualified campus DRB project representative. The designated project representative shall inform and communicate project issues and concerns directly with DRB members. The DRB project representative shall be responsible for attending and participating in all DRB meetings and review sessions for the assigned campus project. The campus liaison or DRB project representative may participate as an active and voting member of the DRB throughout the review and approval process for the proposed campus project, from pre-design through design development.

The campus liaison also may request a DRB member, in coordination and collaboration with the DRB chair, participate in the review and selection of an architectural and engineering (A/E) firm for major campus projects. The purpose of including a voting DRB member in the selection process is to offer advice to the selection committee and inform the DRB of the proposed project background and history, previous studies and conditions, programming, budgets and proposed project schedule. The selected DRB representative is obligated to inform the remaining DRB members of the project context and A/E selection process.

The administrative procedures described above are intended to facilitate improved and more efficient communications with the DRB, university and A/E project management throughout the planning and design process.

IV. PROCESS

A. Meetings

The DRB meets monthly on the second Thursday (all day) and Friday (in the morning) on various campuses. The campus liaison is responsible for scheduling the project review and coordinating document submittals with the CU system office. The DRB meeting record is posted on the DRB website and distributed to campus architects.

The DRB chair, in consultation with the campus liaison, may eliminate design steps typically necessary for project review. Should the DRB feel the planning or design of a project is progressing in a direction inconsistent with the intent of the campus master plan and/or design guidelines, it may request additional meetings, information or studies to further demonstrate conformance.

B. Process for Consideration of Different Project Types

Depending on the size of the project, DRB review will proceed according to one of the two following processes:

1. Small Projects - Minor exterior renovations or minor landscape projects, which do not change the function of the site or impact the aesthetic value of the campus, can be reviewed and approved at one meeting through a consent agenda item. DRB recommendations may be delegated to the campus liaison for implementation. The campus liaison may determine that a minor project does not warrant DRB review but shall transmit electronic files of small projects to the DRB for its acceptance of their placement on the DRB's consent agenda. Staff also may place responses to previous actions taken by the DRB on minor projects on the DRB's consent agenda. The collective impact of minor projects upon the overall campus form and function shall be considered.
2. Major Renovations and New Buildings - For campus projects proposing new buildings or major exterior renovations, DRB review typically occurs at the four phases of design: pre-design, conceptual design, schematic design and design development. Phases may be combined or additional meetings requested at the discretion of the campus liaison in coordination with the DRB chair.

IV. PROCESS (CONT.)

C. DRB Session Format

The format of the DRB session is as follows:

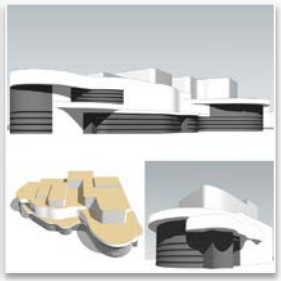
- Generally, a DRB session is approximately 1½ hours in length and consists of four parts. The individual times are approximate, and may vary because of the nature and complexity of the project. Before each project review the DRB liaison shall brief the DRB members on the status of the proposed project in terms of current planning and design issues and schedule.
- The A/E team presents the proposed project to the DRB.
- The A/E team is excused, allowing the DRB board to recess.
- The DRB reconvenes and communicates its summary critique and recommendations to the A/E team.

D. DRB Action and Documentation

There are four DRB submittals required for major renovations and new buildings for the university. Namely:

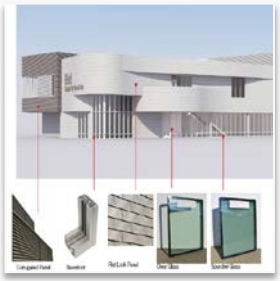
- Pre-design
- Concept design
- Schematic design
- Design development

Pre-Design



Concept

Schematic



Design Development

IV. PROCESS (CONT.)

Based on the A/E presentation of pre-design, the DRB shall provide written comments and recommendations to the campus liaison, DRB project representative and A/E firm. These written comments shall be recorded in the monthly DRB meeting record. No formal review and approval shall be required for pre-design.

For concept, schematic and design development, the DRB chair shall make formal recommendations to the president for approval, approval with conditions, denial and/or continuation of hearings. Approval of concept, schematic and design development by the DRB is required for all university projects.

The record of the DRB proceedings shall be used as the formal documentation of recommendations and actions taken by the DRB. The record shall be published and distributed to appropriate campus liaison and project representatives within 14 days of the formal DRB meeting date. The campus liaison and DRB project representative are responsible for the release, communications, clarifications and distribution of the DRB record to appropriate university personnel, A/E consultants and other project-related parties, at their discretion.

E. Appeal Process

If a campus disagrees with a formal DRB action, the campus may appeal that decision to the president through the vice president for budget and finance or his/her designee.

- Before a formal appeal, a chancellor may choose to bring the matter to the attention of the vice president for budget and finance or the president.
- Within 30 days of a DRB decision that a campus wishes to appeal, the campus architect, through the appropriate vice chancellor, shall advise the vice president for budget and finance or his/her designee on design directions that vary from the DRB's recommendations.
- Before resolving such an appeal, the president shall consult with the campus chancellor.
- The president's decision on a campus appeal from a DRB decision shall be final.

V. SUBMITTAL REQUIREMENTS

A. Submittal Process and Procedures

There are no formal submittal requirements for each of the four phases in the DRB review and approval process. The university and DRB assume that the selected A/E firms were selected and retained based on their professional expertise, capabilities and experience. As such, great latitude and discretion is given to the A/E firm to demonstrate exceptional planning and design for the proposed project.

Members of the DRB shall receive each submittal in its entirety four working days before the scheduled DRB meeting. It shall be the sole responsibility of the selected A/E consultant firm to submit electronic documents to the campus liaison and the designated DRB project representative seven working days before the scheduled DRB meeting. This allows the campus liaison and DRB project representative adequate time to review and verify that the A/E submittal meets the DRB submittal requirements. Upon review and approval of the A/E submittal package by the campus liaison, the necessary documents will be transmitted to the CU system office for distribution to the DRB. The campus liaison shall then confirm or modify the final DRB meeting agenda with the CU system office.

The DRB may reject a project from the agenda if one or more of the following conditions exists:

- Receipt of the electronic or hardcopy submittal is received by the DRB in fewer than the four days required.
- The DRB campus project representative determines the submittal materials are inadequate to communicate the design intent.

The DRB review and recommendation (approval, approval with conditions, denial and/or continuation of hearings) shall be based on the project packets and supplemental materials sent to the university. The DRB may refuse to consider in the review and approval process any new, revised or updated materials that the chair determines were not a part of the original submittal.

V. SUBMITTAL REQUIREMENTS

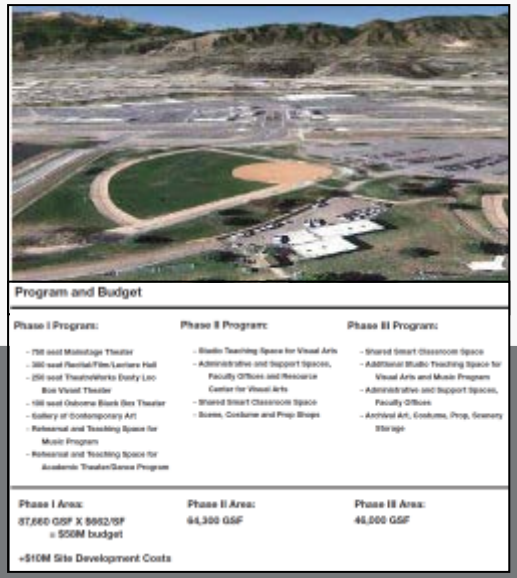
B. Required Submittals

1. Pre-Design

The pre-design phase establishes clear project goals, objectives and priorities for the proposed project. This phase should clearly outline project-related issues, concerns, opportunities and constraints that affect the planning and design process. It is a critical first step in the process because it establishes the goals and objectives of the project. During this phase, the proposed project is fully discussed and reviewed so a clear project understanding is arrived at by all parties, including campus representatives, campus administration, members of the selected A/E firm and other interested parties. The intent of the pre-design phase is to:

- Discuss, clarify and confirm items noted in the DRB briefing packet as provided by the campus liaison to the DRB members (the briefing packet contains information regarding budget history and context)
- Introduce the selected A/E team of consultants and define their project roles and responsibilities
- Describe the proposed project program of improvements, budget, schedule of completion, and all university, governmental or other jurisdictions that may be affected by the project
- Illustrate and describe the historical and current context and setting of the project
- Analyze site and programming conditions and assumptions
- Define project goals and objectives and identify project issues and concerns

Please note that the DRB encourages the A/E firm to clearly and professionally communicate, illustrate and demonstrate the intent of the proposed project in any manner they consider effective, timely and professional. There is no formal action taken by the DRB for the pre-design phase; the DRB shall note concerns, actions and expectations that should be addressed at the concept phase.



V. SUBMITTAL REQUIREMENTS (CONT.)

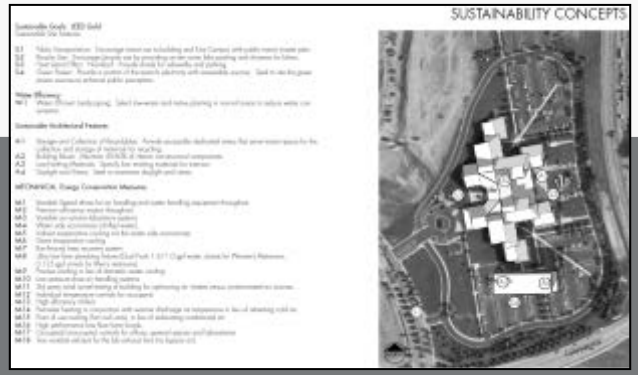
2. Concept Design

The concept design phase should reflect, address and build upon the issue identification, constraints and opportunities discussed and noted in pre-design. The intent of concept design is to apply the goals, objectives, priorities and observations of the project site characteristics and the building program into a preliminary design. This should address outstanding constraints and opportunities and apply this understanding to the proposed design to create a synthesis of site approaches and internal organization. The A/E firm should suggest various alternative site and building design approaches for the project and offer a preferred alternative.

The intent of concept design is to clearly review, clarify and determine the following elements:

- Clarify any pre-design DRB comments and recommendations regarding the proposed project and make certain that the project goals and objectives, program, budget and schedule are clearly understood
- Quantify and qualify all existing and proposed site constraints
- Determine a reasonable site and building development program based on site and budget constraints
- Evaluate alternative site and building concepts and options that achieve the development programming objectives and site constraints
- Explore conceptual site development relationships illustrating how the proposed site development and improvements conceptually relate to the proposed architectural improvements
- Demonstrate and document initial energy, sustainability and low-impact development methods and techniques and best management practices that are being evaluated early in the conceptual design process for the proposed site and building improvements
- Identify and define a preferred concept design direction to be further refined and detailed in the schematic design phase

Review and approval is required by the DRB before the project can move to the next phase – schematic design.



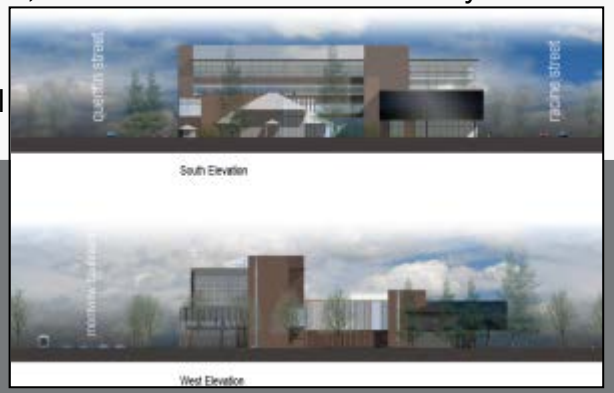
V. SUBMITTAL REQUIREMENTS (CONT.)

3. Schematic Design

Schematic design should be developed from a common and well-defined understanding by the DRB and A/E firm of all site and building issues identified in the concept design review process. The DRB is interested in better understanding the A/E approach to demonstrating a refined resolution for on-site and off-site issues, the development of a preliminary site design, the architectural approach, the development of the sustainability plan and any other special conditions. Specifically, the intent of schematic design is to:

- Establish a strong site plan and building design that further enhances the campus and objectively achieves the development program, budget, schedule and overall project goals
- Refine the site plan and architectural design to achieve greater sustainability, energy efficiency and reduced life-cycle costs
- Demonstrate a higher level of refinement and detail in the site and architectural design that furthers the conceptual design
- Prepare plans and illustrations that clearly convey site development improvements and their relationship to existing and proposed landforms, visual context, pedestrian connections and linkages, vehicular, service and emergency access, and defined hardscape and landscape improvements
- Prepare schematic plans, elevations, perspectives, cross-sections and other three-dimensional illustrations that further support and clarify the design concept

Where applicable, please refer to the most recent American Institute of Architects (AIA) standard criteria for schematic design professional services. At the conclusion of the schematic design presentation, the A/E firm shall be asked to briefly summarize all defined, unresolved and outstanding site, architectural and sustainability issues that were identified through the schematic design process. The DRB will further clarify and assist the A/E firm in understanding schematic design issues and concerns before making a formal action. DRB review and approval is required before proceeding to design development.



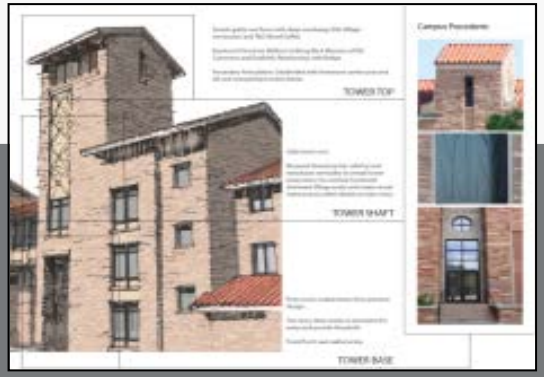
V. SUBMITTAL REQUIREMENTS (CONT.)

4. Design Development

Design development is the final phase of review by the DRB. It is the final opportunity for the DRB to review the specific planning and design details as they relate to the various terms, conditions and recommendations offered by the DRB during the schematic design review. It is the intent of the DRB not to make or suggest substantive or significant changes at the design development phase for practical, cost and scheduling reasons. This notwithstanding, the DRB shall review with care and detail to make certain that the terms, conditions and provisions noted in the schematic design are incorporated into the design development submittal. The intent of design development is to:

- Prepare minor adjustments and modifications to the schematic design submittal packet based on DRB recommendations and comments
- Develop, in detail, the site and building design in a manner that is suitable for the campus
- Demonstrate integration of sustainable strategies in the design of the project
- Prepare a final record set of plans, drawings and support documents that reflects a level of design development for the proposed project

Where applicable, please refer to the most recent AIA standard forms and criteria for design development professional services. At the conclusion of the design development presentation, the A/E firm shall be asked to briefly summarize all defined, unresolved and outstanding site, architectural and sustainability issues that were identified through the design development process. The DRB will further clarify and assist the A/E firm in understanding design development related issues and concerns, if any, before making a formal recommendation.



V. SUBMITTAL REQUIREMENTS (CONT.)

If the design development phase is approved with conditions, the A/E firm shall provide the DRB members a final design document that illustrates and describes the resolution of the conditions leading to final approval. This summary document should reflect, as necessary, the evolution of the planning and design process and reflect the approved final design. The final design packet (electronic) shall be submitted to the DRB within 45 days of final approval.