

PROJECT INTRODUCTION

This professional project is to be used to satisfy the research project requirement for the degree of Master of Science in Community Development.

Project Description

This project consists of the rough drafts for Industrial Design Guidelines, Commercial Design Guidelines, Residential Design Guidelines, Landscaping Design Guidelines, and Sustainability Design Guidelines for Yolo County, California. It reflects the product of one year of collaboration and research to produce design guidelines for Yolo County, where no design guidelines currently exist. The guidelines as they are presented in this document are in draft form, as they have not yet been circulated to the advisory committees or formally adopted by the Planning Commission. They are not intended to be used as reference for any built project in Yolo County; they are only intended to be used to illustrate the product of my work.

Background and Context

The unincorporated areas of Yolo County consist primarily of agricultural land and small towns, while the majority of the population lives in the four incorporated cities of Davis, Winters, Woodland, and West Sacramento. These guidelines are to pertain to county land that does not fall within the boundaries of the four incorporated cities. At the time this project began Yolo County did not have any design guidelines in place and were beginning to revise the General Plan. The goal was to produce design guidelines at the

same time the General Plan was being updated to ensure that the guiding principles of each document supported one another.

Drafting of the Yolo County Design Guidelines began with the formation of a design guidelines sub-committee that included two Yolo County planning staff members, three members of the Yolo County Planning Commission, and a local architect. This sub-committee then advertised for a student intern to assist in the document writing process. I served in this position for approximately one year. During this time I assisted in the drafting of the Industrial, Commercial, Residential, Landscaping, and Sustainability Design Guidelines included in this document.

Methods

The two methods used for the drafting of these guidelines were collaboration and research. These two methods occurred in a repeating cycle, where I would meet with the sub-committee to collaboratively establish the goals and tone of the next portion of the document to be written, and then I would independently research existing planning documents and other pertinent information before I would begin writing. To ensure I captured the goals and tone accurately, the sub-committee would then review the product of my research and writing. This cycle continued for the entire year I worked on these guidelines.

Collaboration

Sub-committee collaboration occurred primarily at meetings. We met approximately once per month for two hours at a time at the Yolo County Department of Planning and Public Works. The meetings included a review of the most recent draft of guidelines,

which were emailed out to the sub-committee prior to the meeting. The group would discuss any recommended changes or additions until we agreed on the final wording. Then we would discuss next steps and establish the major points or headings for the following section to be written.

In addition to the collaborative process discussed above we went on “field trips” previous to starting the Commercial Design Guidelines and the Residential Design Guidelines. These meetings were longer in length (approximately six hours each) and included site visits to places that illustrated design concepts we either wanted to encourage or discourage. Photos from these field trips were used in the design guidelines. The monthly meetings provided guidance for details of the design guidelines, while the field trips provided the big picture that guided the tone of the entire document.

Research

The research sources I used to produce these guidelines included existing design guidelines from other cities and towns, existing Yolo County planning documents, theoretical and practical planning influences discussed during concurrent or previous classes, and the local knowledge of the members of the sub-committee. Existing design guidelines were invaluable for researching format and writing style of planning documents. Design guidelines for the cities of Elk Grove, Fort Collins, Colorado, Lincoln, North Natomas, Paso Robles, Winters, and Woodland, as well as for the counties of Marin and Sutter, were used for these purposes.

Planning documents from Yolo County helped guide the content of the Yolo County Design Guidelines. The Yolo Master Plan, County Code, Parks and Open Space

Master Plan, and Draft Sign Ordinance provided the standards that the guidelines needed to be based upon.

Concurrent and previous classes I had taken at UC Davis provided a theoretical and practical background for how design guidelines could be drafted to meet overarching goals of the county. For example, smart growth, economic development, and agricultural preservation were common themes in a number my classes. I found that I used my background in all three of these areas to determine important goals that the guidelines should speak to. This is illustrated in the final draft of these guidelines; smart growth goals such as walkability, access to community necessities and resources, and mixed housing types are encouraged for the primary purposes of preservation of agricultural land and the creation of vibrant local commercial areas that reflect the local character and generate needed tax revenue for the county. All three themes work together in the document to guide development into compact areas where development already exists, resulting in a more vibrant area, while preserving rich agricultural land for farming.

Finally, the members of the sub-committee were an important source of local knowledge. Their feedback helped me draft a document that is unique to Yolo County and addresses its needs and character. The sub-committee included two Yolo County planners, two farmers, an agricultural specialist, and a local architect. Three of these people were on the planning commission and many had lived in Yolo County for decades. The diverse set of interests and backgrounds they brought to the process helped with the formation of a set of design guidelines that truly reflect the vision they have for the county.

GUIDELINES INTRODUCTION

The Yolo County Design Guidelines expand on the Development Standards in the Yolo County Zoning Code. This document is intended to supplement the Zoning Code with additional illustrations and examples of preferred design elements within the unincorporated areas of Yolo County.

Background

The primary industry in Yolo County is agriculture and the County has some of the highest quality agricultural land in the country. The County is also expected to experience a higher level of growth over the coming years. These two defining characteristics guide the Design Guidelines and lead to the County's promotion of building practices that allow industry and inhabitants to locate in Yolo County without jeopardizing the County's existing strength as an agricultural center. Many guidelines seek to improve water quality, focus development on less prime agricultural land, and improve quality of life for existing and future inhabitants.

Purpose

The overall purpose of these Design Guidelines is to establish clear and comprehensive design recommendations for all development in the unincorporated areas of Yolo County without limiting creative design solutions. The Guidelines are intended to be used by County staff, design review boards, developers, property owners, residents, decision makers and other stakeholders. The ultimate goal is to provide all of these people a clear

document that outlines the County's expectations for the planning, design, and review of development proposals. The Design Guidelines are intended to promote the design of innovative projects and should not hinder creative efforts.

Implementation

All projects should incorporate:

- Environmentally-sensitive site planning principles,
- High quality architectural design,
- Innovative use of resource conserving material,
- Sound construction methods, *and*
- Green building techniques.

In addition, the following guiding principles apply to all projects:

- The natural beauty of the County should be preserved.
- The built environment should respect and preserve the agricultural value of the land.
- The exterior of proposed developments should be compatible with the design scale and context of surrounding properties.

Applicability

These Design Guidelines apply to proposals for new development and remodels. The "Table of Contents" details the guidelines for each type of project that is subject to design review, which are industrial projects, commercial projects, and residential projects. Please read the section that relates to your particular project. Should a question regarding

the Guidelines or Appendices occur, please consult with the information counter at the Yolo County Office of Planning, Resources and Public Works.

Organization and Use

The “Introduction” and “Appendices” sections of the Yolo County Design Guidelines include general information that applies to all built projects. Information relating to the particular type of project is included in a separate document. This is done to allow users to print, read and refer back to a compact and focused document that relates to their particular project. Each section is broken down into subsections that relate to particular aspects of the proposed type of project. When appropriate, illustrations or photographs will be provided to clarify the design guidelines. The visuals are intended to promote the design of innovative projects and should not hinder creative efforts.

Definitions

Guideline- These provide examples and methods of how the preceding Standard may be satisfied, or they give examples of development methods preferred by Yolo County.

Impervious Surface- Any material that *prevents* absorption of storm water into the ground. Common examples are concrete and building roofs.

Mass- The three-dimensional bulk of a structure: height, width and depth.

Pervious Surface- Any material that *permits* full or partial absorption of storm water into the ground. Common examples are gravel and swales.

Riparian Buffers- A specific and important type of permanent vegetative buffer that exists along waterways and provides animal and plant habitat to support the waterway's ecosystem.

Scale- The spatial relationship between the mass of structures and open areas along a street or block front.

Shall- Refers to concepts or plan content that are mandated by the Zoning Code.

Should- Refers to a design recommendation or an approach in project design that has been generally found as acceptable to the County.

Standard- Mandatory design rules that applicants need to abide by in their project design.

INDUSTRIAL GUIDELINES

INTRODUCTION

A. APPLICABILITY

The design guidelines in this section apply to Limited Industrial (M-L), Light Industrial (M-1), and Heavy Industrial (M-2) zone districts within Yolo County. Projects within a city shall conform to city guidelines. Examples of the types of uses the guidelines are intended to apply to include but are not limited to:

- Research and Testing Facilities
- Light and Heavy Manufacturing Facilities
- Agricultural Industrial Complexes
- Storage Facilities
- Automobile Service and Repair
- Corporation Yards
- Construction Shops and Yards
- Building Materials Sales
- Warehouses
- Canneries
- Trucking Terminals and Garages

B. ORGANIZATION

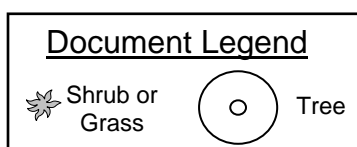
This document separates industrial design into two main categories: site design and building design. Subtopics are addressed within each of these categories. Each subtopic begins with a guiding principle and is supported by design guidelines. Visuals are

provided for clarification and illustration. A short section on how to incorporate industrial specific sustainable building practices is provided at the end of this document.

C. CREATIVE DESIGN

The graphics, examples, and illustrations provided in this document are conceptual and intended to inspire design professionals and promote quality design. In order to provide visually appealing industrial projects in Yolo County, alternative concepts are encouraged so long as they achieve the guiding principles contained in this document. Design elements should be compatible with surrounding development in terms of scale, mass, detailing, and building patterns.

Though these guidelines are advisory, they reflect a strong commitment by the county to create industrial projects that are attractive and people-friendly, and that add to the neighborhoods in which they locate. They are the standard to which projects will be evaluated. We recognize that for many projects not all of these guidelines can be met, whether due to parcel size or configuration, interference with the efficient use of the site for its intended purpose, cost constraints, etc. In such cases, County staff is available to discuss these constraints with project proponents as early in the design process as possible. In this way, the spirit and intent of these guidelines can be met while guaranteeing the most effective use of private and public resources during design, review and approval, construction, and subsequent operations.



SITE DESIGN AND RELATION TO SURROUNDING AREAS

A. GENERAL SITE DESIGN

1. ORIENTATION AND PLACEMENT OF BUILT ELEMENTS: Buildings, parking areas, and industrial accessory areas should be situated and oriented so as to provide for an efficient and functional use of land, while maintaining a relatively uncluttered environment.

I.G.1: Building Placement: Locate buildings adjacent to the sidewalk or roadway where possible, to facilitate access to the buildings and alleviate views of large expanses of paved parking areas seen from the street. (Fig. 1)

I.G.2: Adjacent Parcels: Site design should be coordinated with neighboring parcels of similar uses. This may include shared parking and circulation systems, and shared trash and recycling collection enclosures. (Figs. 1 & 2)

I.G.3: Entrances: Lot entrances should be clearly defined with the use of distinctive landscaping, signage or other prominent features. (Fig. 1)

I.G.4: Unsightly Uses: Loading and storage areas should be located on the side or rear of the site when the project abuts a public right-of-way. (Figs. 1, 7, & 8)

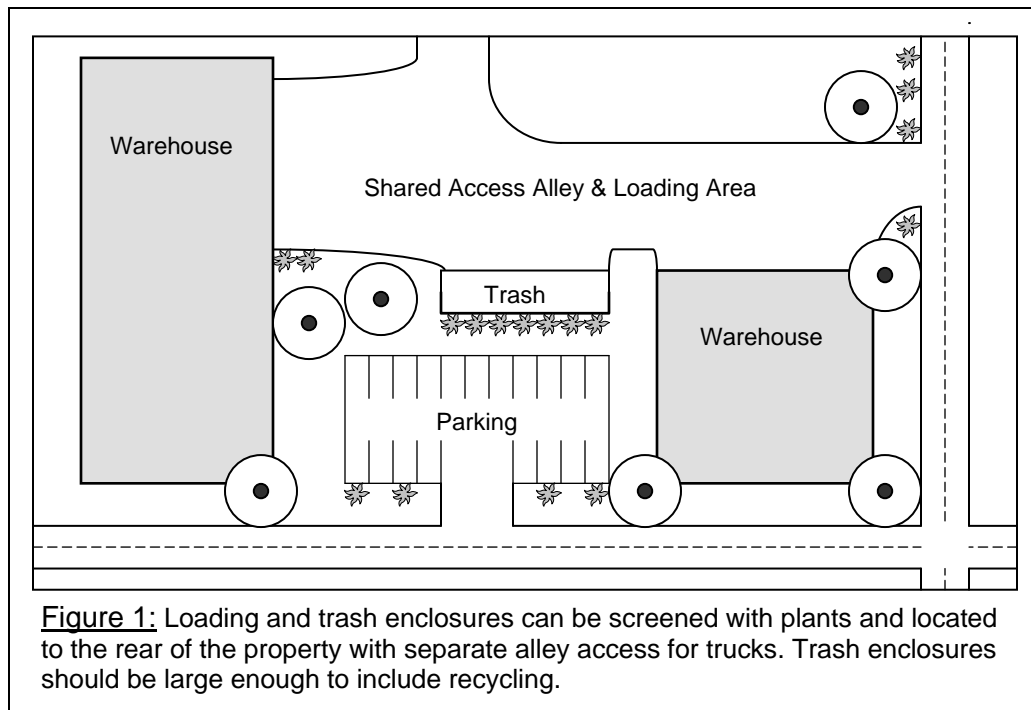
I.G.5: Drive-Through Facilities: Drive-through facilities should not face a public right-of-way.

a. TRASH ENCLOSURES

I.G.6: Collection Areas: Outdoor storage, trash collection and loading areas should be located away from public access routes and should not interfere with circulation routes. (Figs. 1, 7, 8 & 14)

I.G.7: Recycled Materials: Trash collection enclosures should be adequately sized and concealed, and include adequate space for recycled materials containers. (Fig. 1 & 14)

I.G.8: Enclosure Access: Trash and recycling enclosures should be located in an area that is convenient for tenant and employee access. The enclosures should not block parking spaces or interfere with parking lot circulation. (Figs. 1, 7, 8 & 14)



2. PATHS OF TRAVEL AND ACCESS: Safe and efficient access and paths of travel should be provided for all forms of transportation, including pedestrians.

a. NON-MOTORIZED TRANSPORTATION

I.G.9: Transit Access: When a transit stop exists in close proximity to an industrial building or development, a safe walkway should be provided from the transit stop to the place of business. (Fig. 3)

I.G.10: Pedestrian Access: When multiple businesses are located within walking distance of each other, a safe walkway separate from vehicular traffic with clearly defined crosswalks should be provided for pedestrian access between buildings. (Fig. 3)

I.G.11: Safe Access: Walkways should be located in highly visible areas of the site to enhance safety and accessibility. (Fig. 2)

b. MOTORIZED VEHICLES

I.G.12: Non-Residential Street Access: Parking lots for industrial uses should not have access from streets primarily serving residential districts.

I.G.13: Driveway Location: Driveways should be coordinated with existing or planned median openings and located at a reasonable distance from intersections in accordance with County Improvement Standards. (Fig. 1)

I.G.14: Shared Driveway Opportunities: The number of driveways, entrances, and exits should be limited and shared with neighboring properties when possible in order to minimize interference with street traffic. (Fig. 1)

I.G.15: Separate Uses: Heavy equipment traffic should be separate from employee and customer traffic. This can be accomplished by providing separate entrances for heavy equipment and regular vehicular traffic. (Fig. 1)

Figure 2: A pathway through a large parking lot for multiple office buildings provides safe pedestrian access. Parking is shared among all the businesses.



3. PRESERVATION OF NATURAL LANDSCAPE FEATURES: Existing site amenities such as wetlands, waterways, plant and animal habitats, and culturally significant landscapes should be preserved and restored in order to maintain a healthy ecosystem.

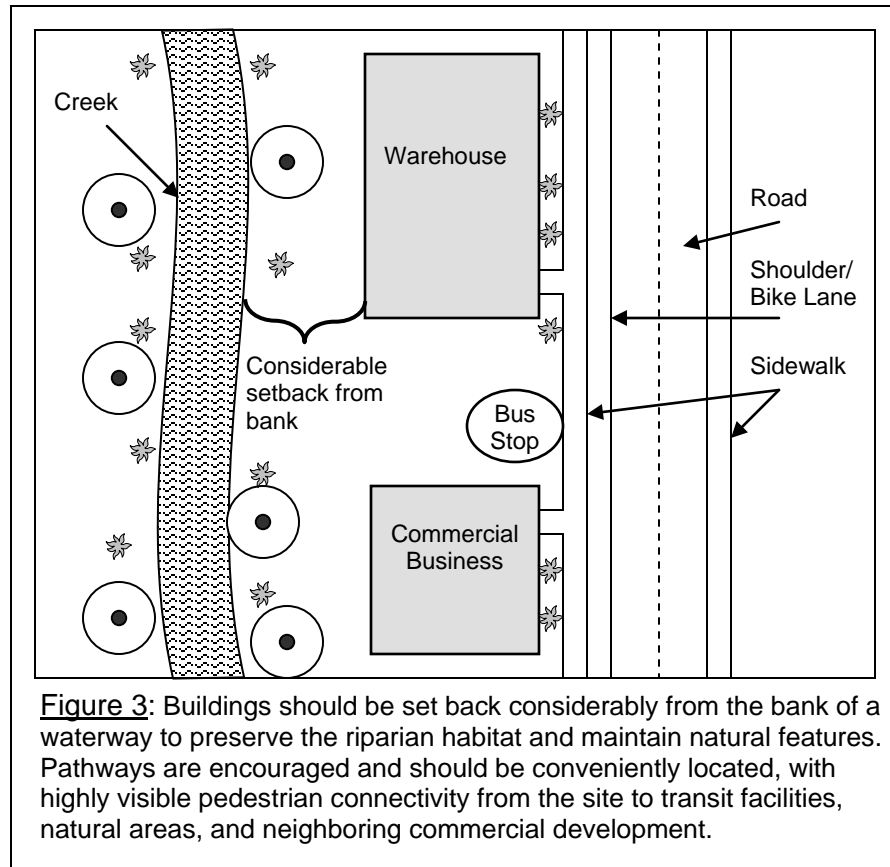
I.G.16: Habitat Preservation: Significant areas of habitat and native vegetation should be preserved in order to maintain the local ecosystem. (Fig. 3)

I.G.17: Character Preservation: Culturally significant landscapes, such as scenic view sheds and landscapes of historical significance, should be preserved in order to maintain the local character of the area. (Fig. 3)

I.G.18: Site Amenity Preservation: Natural site amenities such as pathways, views, mature trees, riparian corridors, and parks should be preserved and/or used to enhance the design of new projects. (Fig. 3)

I.G.19: Riparian Preservation: Site design and orientation should maintain, preserve, and when possible, restore any riparian vegetation and corridor areas. Riparian corridors should be maintained as open space features in any new industrial development. (Fig. 3)

I.G.20: Access to Natural Areas: The design and orientation of parcels should encourage the use of natural areas. (Fig. 3)



B. PARKING

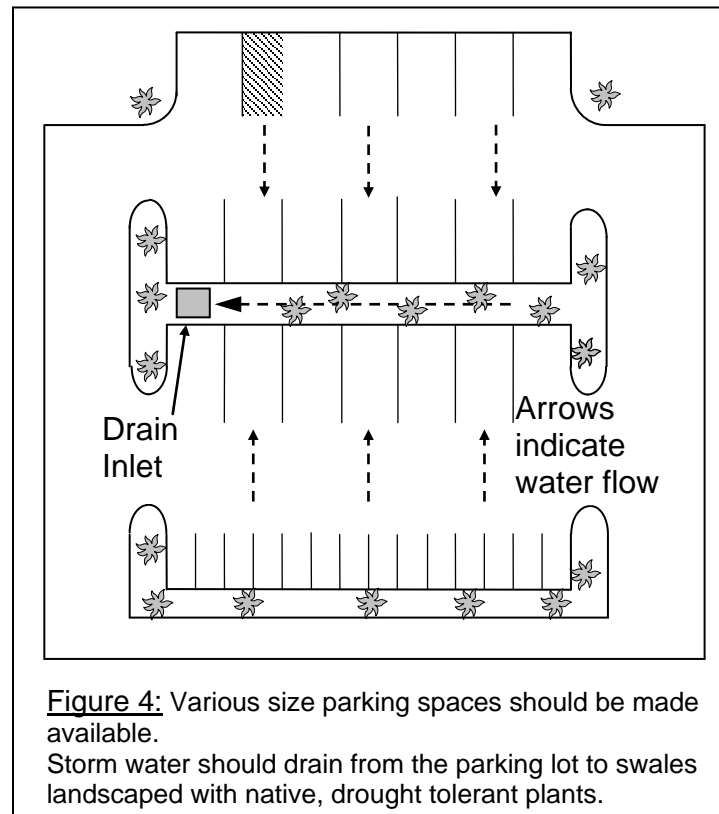
1. LOT ORIENTATION: Parking lots should be designed so that convenient parking and safe pedestrian and vehicular circulation is provided without excessive land consumption.

I.G.21: Vehicle Circulation: Parking lot circulation routes and parking areas should be distinct, with circulation routes having direct access to parking aisles and parking aisles having direct access to parking spaces.

I.G.22: Pedestrian Access: Parking areas should be designed in a manner that accommodates safe pedestrian access. This can be accomplished through the use of separate walkways with textured paving to clearly define crosswalk areas. (Fig. 2)

I.G.23: Shared Parking: Owners of adjoining properties should share parking facilities to reduce the amount of land consumed by parking lots. (Figs. 1, 2 & 8)

I.G.24: Hazardous Materials: Design consideration should be given to staging areas where hazardous materials can be safely loaded and unloaded. (Fig. 1 & 8)



2. PARKING SPACES: Clearly labeled and reasonably sized parking spaces should be provided for any type of vehicle that may use the lot.

I.G.25: Defined Parking: Parking areas should be clearly paint striped to show the planned circulation and parking pattern.

I.G.26: Parking Space Sizes: Various size spaces should be provided to accommodate a variety of automobile sizes and driver needs. These spaces should provide for compact, traditional size, larger work truck, and ADA access. (Fig. 4)

3. DELIVERY AND LOADING AREAS: Adequately sized and safe delivery areas should be provided without using excessive land.

I.G.27: Truck Access: There should be adequate maneuvering space for trucks and heavy equipment. This maneuvering should not encroach on parking spaces or public right-of-way. (Figs. 1, 7 & 8)

I.G.28: Loading Areas: Loading areas should maintain clear access without interfering with pedestrian and vehicular circulation. (Figs. 1, 7 & 8)

I.G.29: Shared Loading Areas: Two or more businesses should utilize common loading areas to reduce excessive paving. (Figs. 1 & 8)

4. SHADE AND LANDSCAPING IN PARKING LOTS: “Heat island effect” should be reduced through the use of shade trees in parking lots.

I.G.30: Minimize Heat: In order to cool large expanses of paved area, parking lots should be landscaped with shade trees or other shading devices and incorporate the use of lighter colored paving materials.

I.G.31: Shade Trees: Parking lots should be landscaped so that within 15 years, 50% of the total parking area will be shaded. Parking lot trees should be evenly spaced and dispersed over the entire parking field, with an irrigation system that is installed and designed for efficient water usage. Each parking lot tree should have a curbed tree well of sufficient depth and overhang distance to prevent tree damage from vehicle bumpers. See Appendix A *General Landscaping Design Guidelines and Plant Selection Grid* for detailed information regarding appropriate species that can be used for shading purposes.

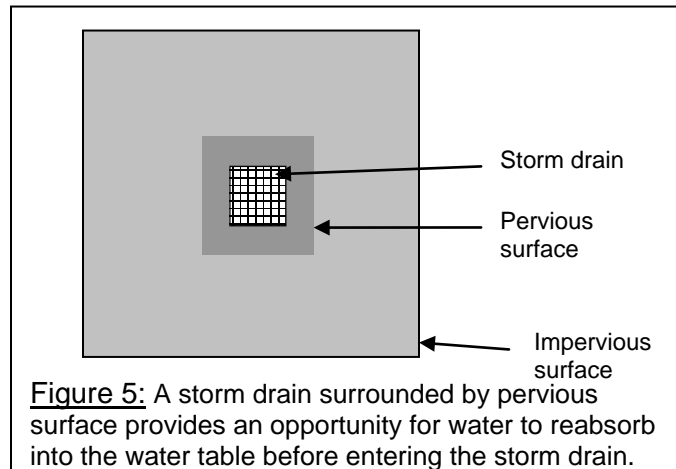
I.G.32: Landscaped Islands: Landscaped islands should be used to create separate “pods” of parking and to provide breaks in the paved area. (Figs. 2 & 4)

5. SURFACE RUNOFF: Site design should mitigate for potentially adverse environmental effects of storm water runoff by minimizing impermeable surfaces and allowing groundwater recharge where feasible.

I.G.33: Parking Lot Swales: Swales and planters should be utilized to capture storm water runoff in strategic locations of the parking lot and other paved areas for re-absorption into the ground. (Fig. 4)

I.G.34: Pervious Materials: Parking lots, walkways, and other paved areas should be constructed of pervious materials, to the maximum extent possible, that allow for storm water infiltration. (Fig. 5)

I.G.35: Roof Runoff: Roof runoff from industrial buildings should drain to a swale or be retained and used for landscape irrigation. (Fig. 4)



C. LANDSCAPING

1. SCREENING: Landscape screening should be used to hide unsightly areas without blocking the line of sight for drivers. See Appendix A for detailed information regarding appropriate species that can be used for screening purposes.

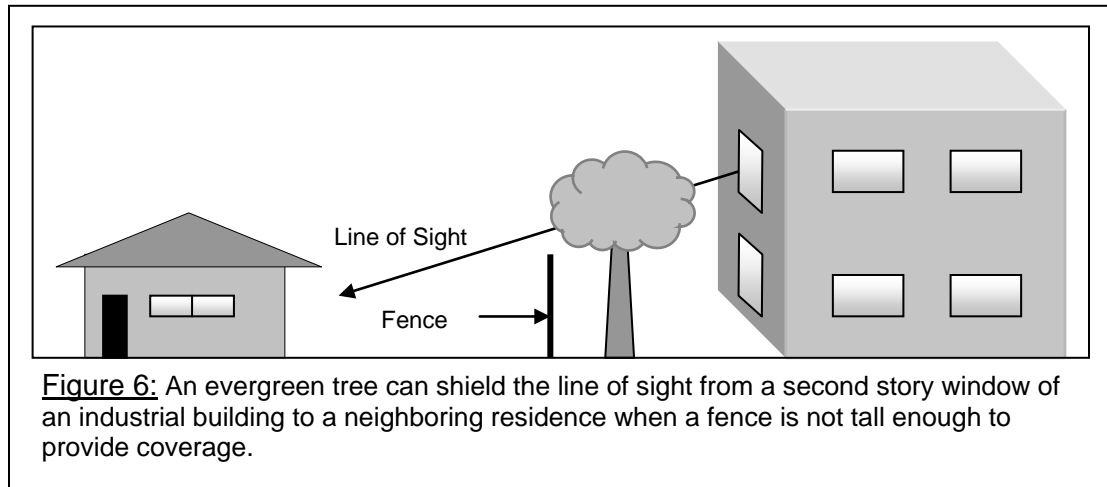
I.G.36: Areas to Screen: Outdoor storage, trash collection areas, loading areas, and utility equipment should be screened and enclosed so they are out of public view. (Figs. 1 & 14)

I.G.37: Plants for Screening: Landscape features such as vines or hedges should be used to hide unsightly areas. (Fig. 1)

I.G.38: Line of Sight: Screening should not be located in areas that would block the line of sight for drivers entering, leaving, or driving through the site.

I.G.39: Drive-Through Facilities: Stacking areas for vehicles in drive through facilities should be screened from public view.

I.G.40: Neighboring Residential: Windows that allow a direct line of sight into neighboring residential areas should be screened with appropriate plants or building materials to ensure the privacy of the neighboring areas. (Fig. 6)



2. INTEGRATION WITH AND IMPROVEMENT OF THE SURROUNDING AREA:

New landscaping should be designed in a way that uses water efficiently while providing aesthetic and environmental benefits.

I.G.41: Trees: Existing large trees should be retained and new drought tolerant, native trees should be planted to improve air quality, provide shade, and create buffers. See Appendix A for detailed information regarding native and drought tolerant species. (Fig. 3)

D. BUFFERING AND INTERFACES

1. **INTERFACES:** Industrial sites should be located and buffered appropriately so they do not create a nuisance with neighboring sites.

I.G.42: Nuisances: Activities generating noise, traffic, dust, odor, or other nuisances should be located adjacent to similar activities. (Figs. 1 & 8)

I.G.43: Natural Buffers: Innovative uses of landscaping and berms should be used in place of sound walls, where feasible, to provide a more natural and aesthetically pleasing environment.

2. INDUSTRIAL BORDERING RESIDENTIAL: Industrial development that borders a residential district should include design elements that mitigate for any potential nuisance the industrial use may impose on the residential zone.

I.G.44: Sound Walls: A minimum six-foot masonry wall should be erected to separate industrial sites from residential uses. Long expanses of wall should be broken up with offsets and/or variations on height and should incorporate accent features such as stone or brick pilasters with caps. (Figs. 7 & 8)

I.G.45: Landscaping: In addition to the use of masonry walls, landscaping, berms, and building orientation should be utilized to buffer industrial areas from residential areas. (Fig. 7)

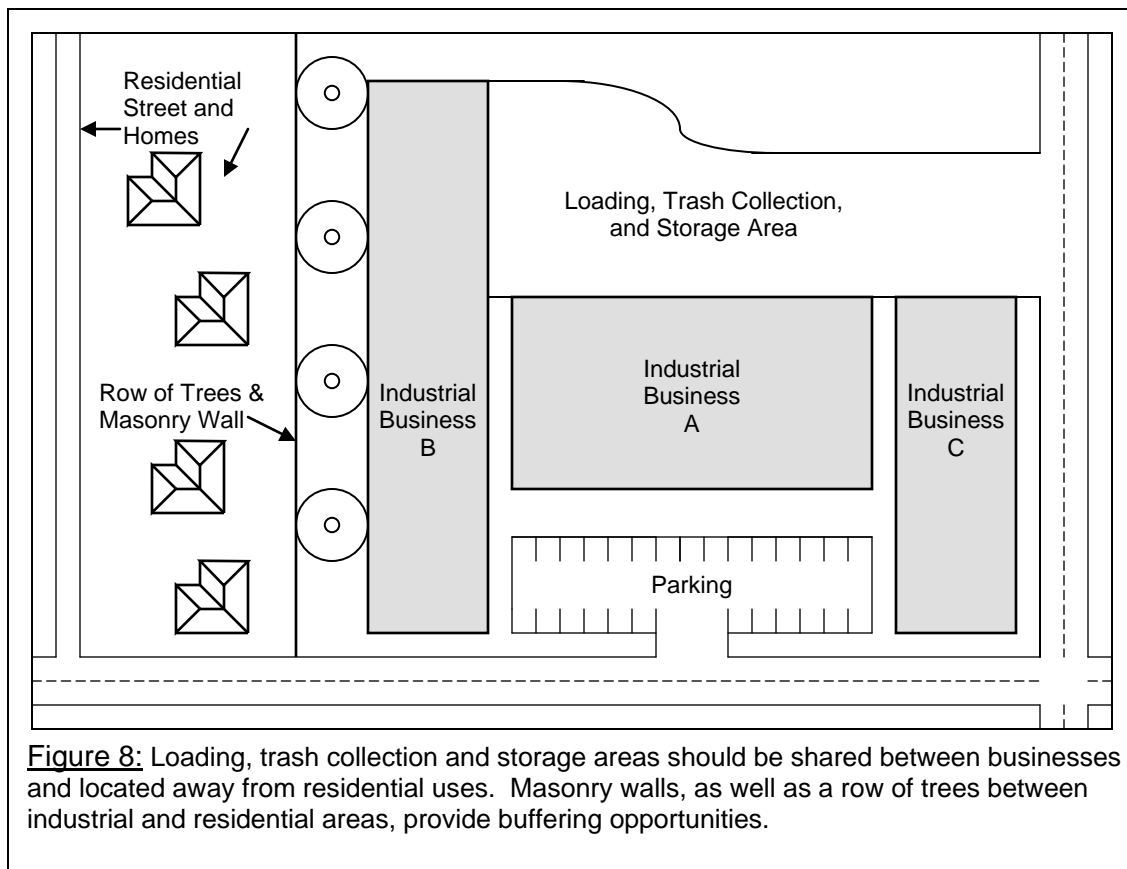
I.G.46: Accessory Facilities: Loading areas, driveways, trash enclosures and storage areas should be located as far as possible from existing residences. (Figs. 1, 7 & 8)



Figure 7: A masonry wall and a row of trees buffer the residential neighborhood from the industrial use. The loading docks and storage area are located away from the residential use.

4. INDUSTRIAL BORDERING COMMERCIAL: Fencing should buffer industrial lots from commercial lots.

I.G.47: Fencing: Fencing should be placed between industrial lots and commercial lots to buffer sound, provide privacy and security, and conceal unsightly storage areas. (Fig. 8)



E. OUTDOOR AND ACCESSORY SPACES

1. FOR EMPLOYEES: Pleasant outdoor break areas should be provided for employees.

I.G.48: Shade: Natural tree canopies or awnings should adequately shade outdoor break areas. (Fig. 9)

I.G.49: Amenity Access: Outdoor break areas should have pedestrian access to any close amenities, such as stores, restaurants, or natural areas. (Fig. 10)

2. SAFETY: Create defensible spaces on the site for safety of pedestrians.

I.G.50: Avoid Seclusion: Avoid creating secluded areas that cannot easily be observed from the parking lot, road, or other easily accessible locations. (Fig. 10)

I.G.51: Line of Sight: Arrange buildings, plants, and design elements in a way that allows for a clear line of sight down all walkways. (Figs. 2 & 10)



Figure 9: Covered picnic tables located between buildings provide a pleasant break area for employees.



Figure 10: The same complex of buildings has a walking and bicycle path that connects to a grocery store, restaurants and a park.

F. SIGNAGE

For specific information on signage and sign regulations, please refer to the County's Sign Ordinance in the County Code (Section 8-2.2406).

1. ALLOWABLE SIGNS: Signs specifically allowed in the Limited Industrial (M-L), Light Industrial (M-1), and Heavy Industrial (M-2) zoning districts include one monument sign at each premise and one non-interior illuminated wall sign per business or tenant on each frontage or building face having a public entrance.

I.G.52: Design: Signs should relate to and compliment the overall design of the building in terms of size, shape, placement, detailing and color.

I.G.53: Placement: Signs should be placed so they emphasize design elements of a building's façade.

I.G.54: Line of Sight: Monument signs should not be placed in areas that could potentially block the line of sight for motorists entering and/or leaving the site.

I.G.55: Prohibited Signs: Refer to County Code Section 8-2.2406 for sign regulations.

Signs that are prohibited include:

- general advertising signs along freeways,
- abandoned signs,
- signs illuminated with neon,
- signs with strobe or flashing lights,
- signs that move or make noise,
- roof signs,
- signs that may mislead or confuse pedestrian or vehicular traffic,

- signs on a natural feature such as a rock or tree,
- portable signs,
- off premise advertising signs, and
- signs for home occupations.

G. LIGHTING

1. **ORIENTATION AND BRIGHTNESS:** Areas should be well lit without shining light on neighboring lots.

I.G.56: Safety: Lighting should be provided in all public spaces, including parking areas, entries and walkways. This lighting should enhance safety of movement for cars and pedestrians.

I.G.57: Color Rendition: Lighting type should allow good color rendition for adequate visual recognition.

I.G.58: Light Pollution: All building and site lighting should be hooded, equipped with appropriate shields, and directed to the intended area of illumination to minimize off-site light spillage onto adjacent public roadways, neighboring parcels, and the night sky.

I.G.59: Placement: Outdoor light fixtures should be low intensity and placed as low as possible to provide adequate light and coverage, but never higher than twenty-five feet (25').

BUILDING DESIGN

A. BUILDING MASS AND SCALE

1. **MASS:** Building height, width and depth create visual building mass. Building mass should be designed to visually blend with surrounding buildings.

I.G.60: Visual Reduction of Mass: Building mass should be managed using one or more methods, including landscape features that soften edges or create interesting lines; recessing a second floor over the first floor; using horizontal or vertical offsets in wall surfaces; varying facades on long expanses of building; strategic placement of large potted plants; and/or articulating design details around doors and windows. (Figs. 11, 12 & 13)

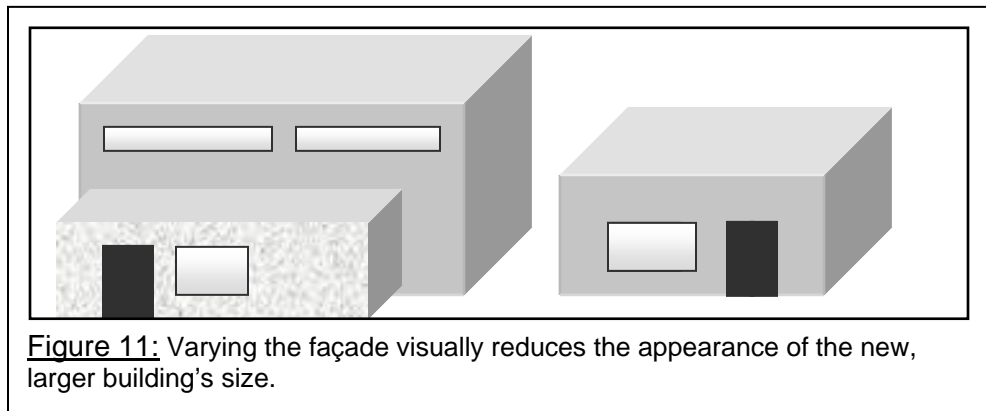
I.G.61: Rooftop Equipment: Rooftop equipment should be concealed through the use of parapets or other means. (Figs. 12 & 13)

2. **SCALE:** The proportion of a new building's features should be relative to the surrounding buildings' features to create balance.

I.G.62: Size: The size of new buildings should not abruptly differ from existing adjacent buildings.

I.G.63: Landscaping: Use of trees is encouraged to soften size differences between buildings.

I.G.64: Facades: Building facades should be articulated and varied to reduce the scale and uniformity of large industrial buildings. (Figs. 11, 12 & 13)



B. ARCHITECTURAL FEATURES

1. BUILDING DESIGN, MATERIALS, AND FINISHES: The design, materials and finishes of the building's façade, entryway and roofline should provide character to the building and surrounding area and maintain a durable appearance.

I.G.65: Character: Architectural features such as overhangs, projections, reveals and covered pedestrian walkways are encouraged to add character and provide shading.

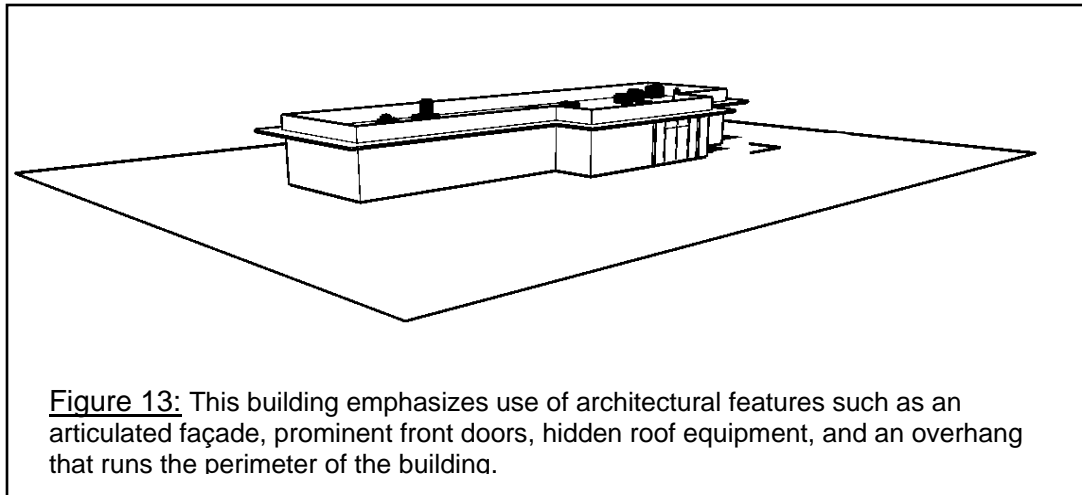
(Figs. 9, 12 & 13)

I.G.66: Rooflines: Variations in rooflines should be used to provide visual relief to large industrial buildings. Roof designs should be integral with the architectural design of the development and not detract from that design. Roof elements such as parapet caps, projecting cornices, and corner details can be used to define a roof. (Figs. 12 & 13)

I.G.67: Materials: Exterior materials should include masonry, plaster, stucco, textured block, metal and brick. Metal should only be used as an exterior material when it fits in with the surrounding buildings and where other metal buildings previously exist. (Figs. 12 & 13)

I.G.68: Colors: Large areas of bright, intense colors are discouraged. Brighter accent colors should be used for trim, windows, doors, and key architectural elements.

I.G.69: Logos: Colors or logos identified with an individual company should not be incorporated as a primary architectural feature, but may be used as an accent feature to enhance the overall architectural theme.



2. CONSISTENCY OF DESIGN: Building forms should respond to the natural environment or other existing developments so they enhance and enliven the surroundings.

I.G.70: Outbuildings: Outbuildings, such as trash enclosures and storage areas, should be architecturally compatible with the primary building (same type of materials and colors).

(Fig. 14)

I.G.71: Service Station Islands: Service station islands should be architecturally integrated so that design character is compatible with the main building.



Figure 14: This trash collection and recycling enclosure uses similar building materials and colors to blend in with the primary buildings.

SUSTAINABILITY

Buildings should be designed in ways that promote energy efficiency and conservation of resources. Appendix C *Green Building Checklist* has information on sustainability and green building that relates to all built projects. In addition to the general measures listed in Appendix C, Industrial buildings should:

- Be designed in a way that utilizes passive solar heating and cooling in order to reduce energy cost and consumption. This is especially important for industrial buildings due to their size.
- Possess a light colored roof to reflect a large percentage of solar radiation in order to reduce HVAC loads and energy consumption.
- Use ceiling mounted fans to reduce heat stratification and provide air movement.
- Use low-flow plumbing fixtures, energy efficient fixtures, systems and appliances, wherever feasible.
- Utilize natural sunlight through skylights and energy efficient light fixtures to reduce energy consumption due to lighting.

COMMERCIAL GUIDELINES

INTRODUCTION

A. APPLICABILITY

The design guidelines in this section apply to Neighborhood Commercial (C-1), Community Commercial (C-2), General Commercial (C-3), and Highway Service Commercial (C-H) zone districts. Projects within a city shall conform to city guidelines. Examples of the types of uses the guidelines are intended to apply to include, but are not limited to:

- Retail/Mercantile
- Hotels
- Business, Professional, and Medical Offices
- Restaurants and Food Services
- Personal Services
- Grocery Stores
- Movie Theatres
- Big Box Retail

B. ORGANIZATION

This document separates commercial design into two main categories: site design and building design. Subtopics are addressed within each of these categories. Each subtopic begins with a guiding principle and is supported by design guidelines. Visuals are provided for clarification and illustration. A short section on how to incorporate

commercial specific sustainable building practices is provided at the end of this document.

C. CREATIVE DESIGN

The graphics, examples, and illustrations provided in this document are conceptual and intended to inspire design professionals and promote quality design. In order to provide visually appealing commercial projects in Yolo County, which allow for a variety of uses and create economic vitality, innovative design concepts are encouraged. Design elements should compliment and enhance surrounding development in terms of scale, mass, detailing, and building patterns. New development should respond to the traditional development and architectural patterns of the region.

Though these guidelines are advisory, they reflect a strong commitment by the county to create commercial projects that are attractive and people-friendly, and that add to the communities in which they locate. They are the standard to which projects will be evaluated. We recognize that for many projects not all of these guidelines can be met, whether due to parcel size or configuration, interference with the efficient use of the site for its intended purpose, cost constraints, etc. In such cases, County staff is available to discuss these constraints with project proponents as early in the design process as possible. In this way, the spirit and intent of these guidelines can be met while guaranteeing the most effective use of private and public resources during design, review and approval, construction, and subsequent operations.

SITE DESIGN AND RELATION TO SURROUNDING AREAS

A. GENERAL SITE DESIGN

1. **ORIENTATION AND PLACEMENT OF BUILT ELEMENTS:** Buildings, parking areas, and commercial accessory areas should be situated and oriented so as to provide for a pleasant pedestrian environment, while maintaining a functional use of land that promotes economic vitality.

a. COORDINATION AND ACCESS

C.G.1: Coordination with Neighbors: Site design should be coordinated with neighboring parcels to increase the overall connectivity of the area. This includes shared parking and circulation systems; shared bicycle, pedestrian and vehicle access points; and shared trash collection, recycling, and delivery areas. (Figs. 3 & 5)

C.G.2: Pedestrian Access: Shopping center design should encourage walking by providing pedestrian access points that do not exist for cars. (Figs. 1 & 4)

C.G.3: On-Site Access: New buildings should be oriented in a manner that promote pedestrian access between neighboring businesses and retain attractive grounds and/or outdoor spaces. (Figs. 4 & 5)

b. BUILDING PLACEMENT

C.G.4: Building Placement: Buildings should align to the public right-of-way to provide a storefront character to the street. Primary entrances should face the street, with clearly defined pedestrian zones that will enhance the vibrancy of the commercial area, facilitate access to other buildings, slow traffic down, and alleviate views of large expanses of paved parking areas. (Figs. 1 & 5).

C.G.5: Passive Solar: Buildings should be oriented in a manner that utilize passive solar energy to reduce heating and cooling loads.

C.G.6: Unsightly Uses: Loading and storage areas should be located on the side or rear of the site when the project abuts a public right-of-way. (Figs. 5, 12 & 14)

C.G.7: Drive-Through Facilities: Drive-through facilities should not face a public right-of-way.



Figure 1: This building fronts the public right-of-way and places parking behind the building.



Figure 2: A wide buffer which includes a berm, bike/walk pathway, and landscaping can be used to conceal parking areas that abut a public right-of-way.

c. PARKING AREAS

C.G.8: Parking Entrances: Parking lot location should be clearly indicated to motorists with clearly defined entrances through the use of distinctive landscaping, signage or other prominent features.

C.G.9: Parking Lots: Parking lots should be hidden from view of the public right-of-way and oriented to the rear or center of the development. (Figs. 1, 3 & 5)

C.G.10: Parking Buffers: Where parking abuts a public right-of-way there should be a visual buffer, at least 30' wide, that includes features such as sidewalks, bicycle lanes,

landscaping, and/or berms. Landscape screening for surface parking areas is strongly recommended. (Fig. 2)

d. TRASH ENCLOSURES

C.G.11: Collection Areas: Outdoor storage, trash collection and loading areas should be located away from public access areas without interference of circulation routes. (Figs. 5 & 14)

C.G.12: Recycled Materials: Trash collection enclosures should include adequate space for recycled materials containers. (Figs. 5 & 26)

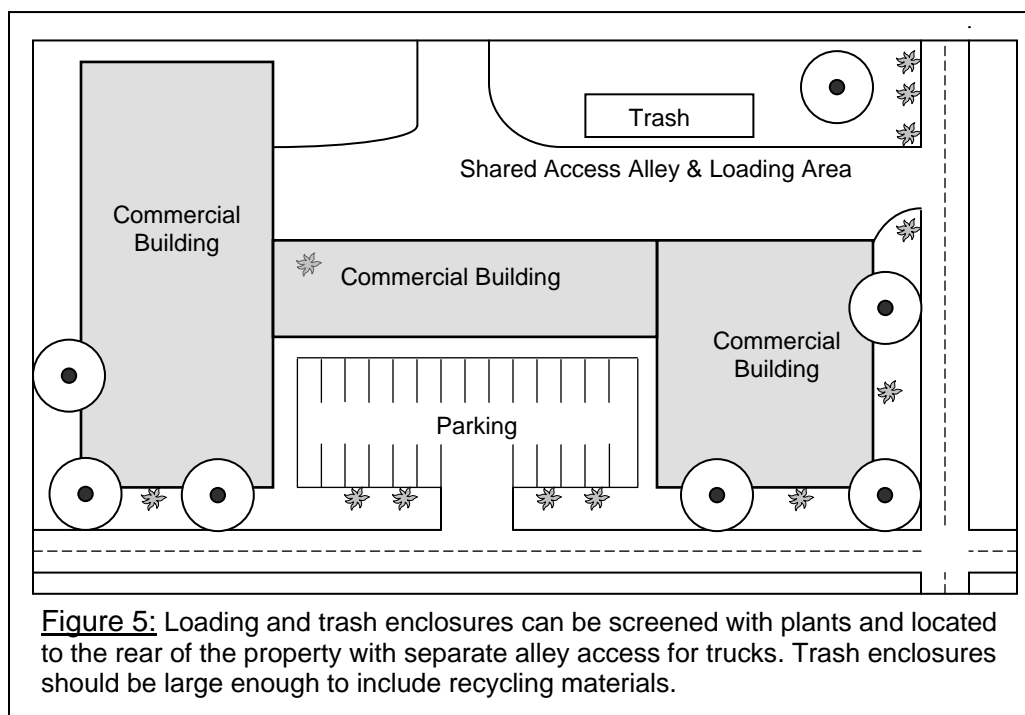
C.G.13: Enclosure Access: Trash and recycling enclosures should be adequately sized and concealed, and located in an area that is convenient for tenant and employee access. The enclosures should not block parking spaces or interfere with parking lot circulation. (Figs. 5, 14 & 26)



Figure 3: This parking lot is located behind the shopping center in Figure 4. The pedestrian crossing pavement is lighter and of a different texture than the asphalt.



Figure 4: The pathway leading from this shopping center extends to a heavily trafficked street with additional commercial businesses. The path makes it easier for shoppers to walk to nearby businesses. The pathway is made of pervious material, allowing water to reabsorb into the water table.



2. **EXTERIOR SCALE:** Exterior areas should be scaled in such a way as to invite pedestrian traffic.

C.G.14: Vibrant Outdoor Areas: Outdoor features such as plazas, courtyards, fountains, outdoor vendors, public art displays, and restaurants with outdoor seating are encouraged in order to draw people to the area. (Figs. 6, 7, 8, & 9)

C.G.15: Gathering Places: Use of street furniture and pedestrian scaled building elements are encouraged to provide informal gathering places for socializing, resting, and enjoying the community's commercial areas. (Figs. 7, 8, 9 & 10)

C.G.16: Windows: Stores should have large windows that allow a full view into the store to provide a more open and inviting feel. These windows should cover 40-80% of the wall fronting the predominant public view. (Fig. 10)

C.G.17: Central Areas: Large shopping areas or complexes should be designed to draw pedestrians to the center by using design elements such as large pathways or courtyards leading to the center, with view corridors allowing people to see inner shops. (Fig. 6)



Figure 6: The fountain at the end of the corridor makes it inviting for people to enter the area.



Figure 7: This fountain and seating area create an inviting feel. The shade structure, vines, and umbrellas provide protection from sun and rain.



Figure 8: Street furniture in this plaza provides a place for people to eat or relax.



Figure 9: The water feature and outdoor seating area provide a comfortable place for shoppers to relax and a space for casual social interaction.



Figure 10: Large windows on this storefront provide an open and inviting feel. Pedestrian scaled design elements, such as planters and canopies, make the building pedestrian friendly.

3. PATHS OF TRAVEL AND ACCESS: Safe, efficient and inviting paths of travel and access should be provided for all forms of transportation, including pedestrians.

a. NON-MOTORIZED TRANSPORTATION

C.G.18: Pedestrian Pathways: Commercial buildings should be clustered along pedestrian paths to encourage foot traffic between businesses. The pedestrian paths should be safe and inviting with clearly defined crosswalks. (Figs. 4, 6 & 10)

C.G.19: Pathway Width: Pathways should be a minimum of 5 feet wide with additional landscaped space on one or more sides to allow for easy passage. (Figs. 1, 2 & 4)

C.G.20: Visibility: Pathways should be located in highly visible areas of the site to enhance safety and accessibility. (Figs. 3 & 4)

C.G.21: Paving Treatments: Sidewalks with special paving treatments such as pavers or stamped, colored concrete are encouraged to invite pedestrian activity. (Figs. 3 & 11)

C.G.22: Transit Access: When a transit stop exists in close proximity to a new commercial building or development, a safe walkway should be provided from the transit stop to the place of business. (Fig. 11)

C.G.23: Vehicle to Building Access: Pedestrians should be able to walk a direct route from their vehicle to a commercial establishment without traversing the parking lot. (Fig. 5)

C.G.24: ADA Access: The primary building entrance for ADA access should be located within proximity to ADA accessible parking and the sidewalk.



Figure 11:
This pedestrian pathway is wide and located in a highly visible area for safety. The pathway uses different paving colors and textures. A bus stop is conveniently located on the street near this safe pedestrian crossing.

b. MOTORIZED VEHICLES

C.G.25: Driveway Location: Driveways should be coordinated with existing or planned median openings and located at a reasonable distance from intersections in accordance with County Improvement Standards. (Fig. 5)

C.G.26: Shared Driveways: The number of driveways, entrances, and exits should be limited and shared with neighboring properties when possible. (Fig. 5)

4. COMPATIBILITY WITH RESIDENTIAL ZONES: Commercial areas that border residential areas should include design elements that mitigate for any potential nuisance the commercial area may impose on the residential area.

C.G.27: Buffers: Landscaping, berms, and building orientation should be utilized to buffer commercial areas from residential areas. (Figs. 12, 13 & 14)

C.G.28: Collection Areas: Loading areas, driveways, trash enclosures and storage areas should be located as far as possible from existing residences. (Figs. 12 & 14)



Figure 12: A masonry wall and a row of trees buffer the residential neighborhood from the large commercial building. The loading docks and storage area are located away from the residential use.

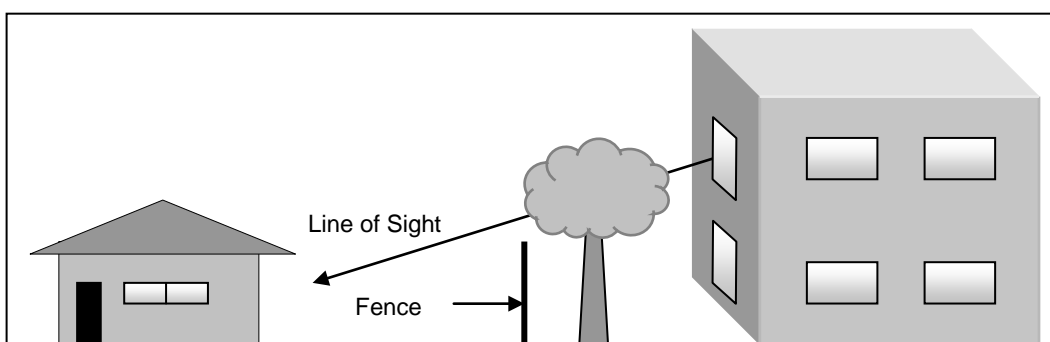
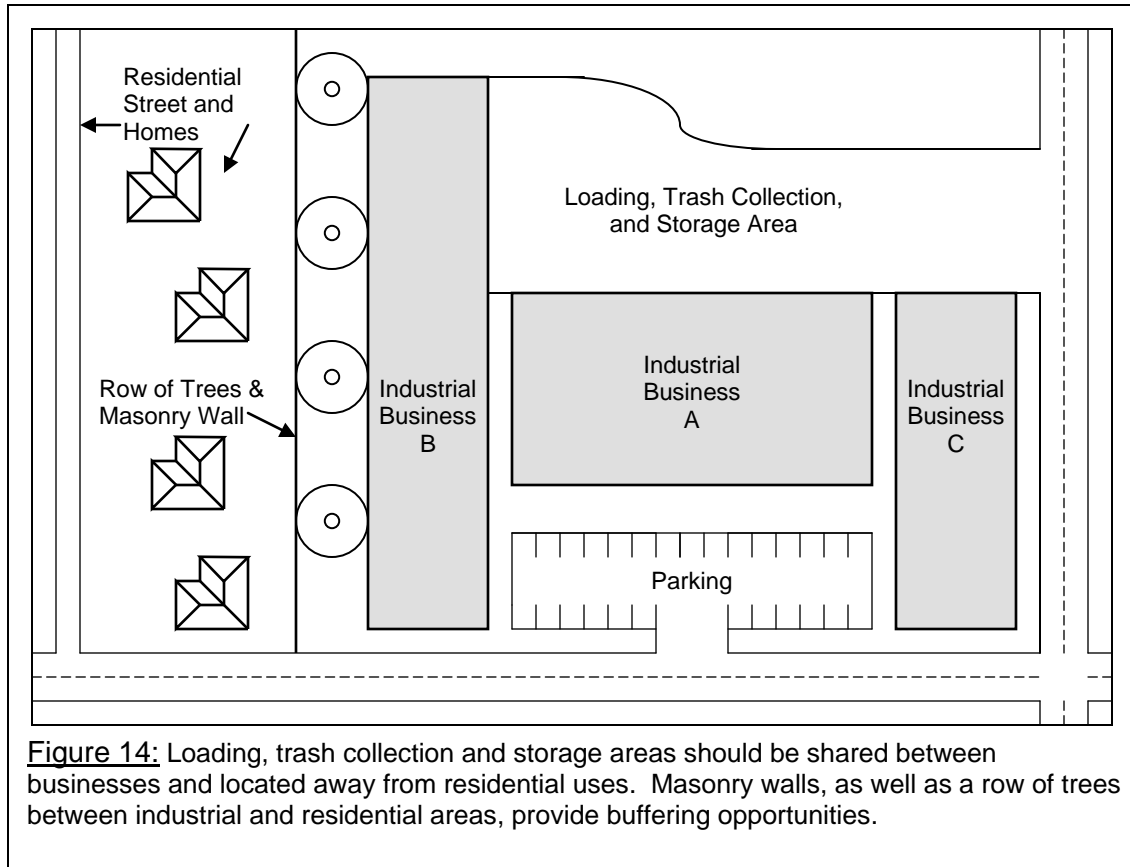


Figure 13: An evergreen tree can shield the line of sight from a second story window of an industrial building to a neighboring residence when a fence is not tall enough to provide coverage.



5. PRESERVATION OF NATURAL LANDSCAPE FEATURES: Existing site amenities such as wetlands, waterways, plant and animal habitats, and culturally significant landscapes should be preserved and restored in order to maintain a healthy ecosystem.

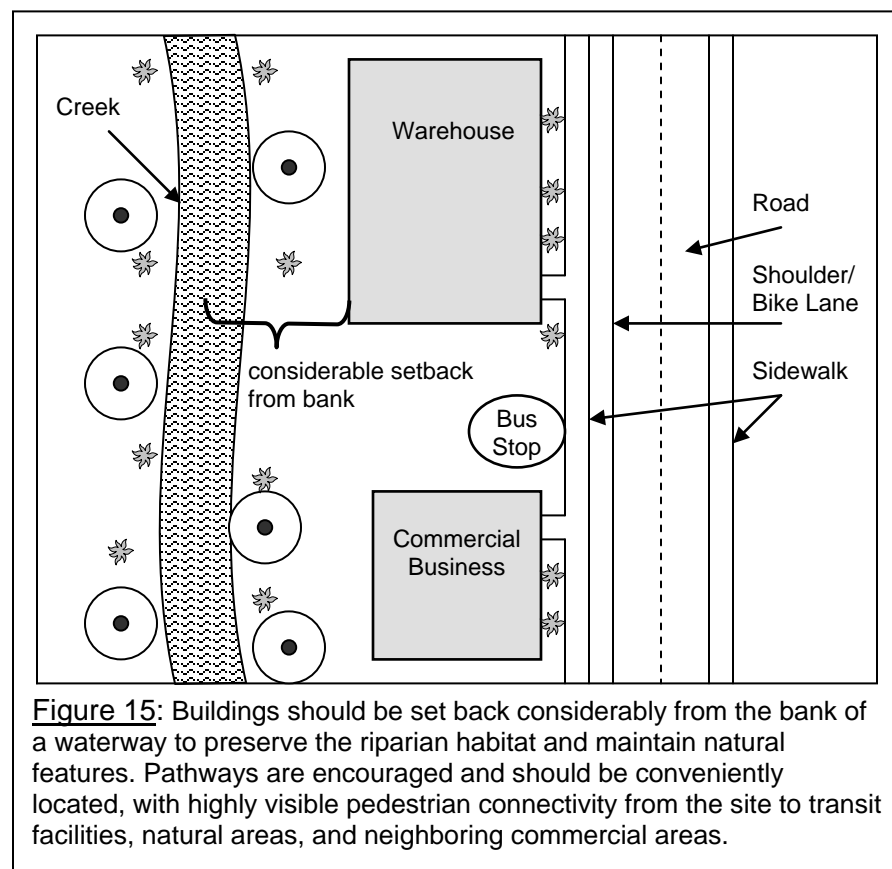
C.G.29: Habitat Preservation: Significant areas of habitat and native vegetation should be preserved in order to maintain the local ecosystem. (Fig. 15)

C.G.30: Character Preservation: Culturally significant landscapes, such as scenic view sheds and landscapes of historical significance should be preserved in order to maintain the local character of the area. (Fig. 15)

C.G.31: Site Amenity Preservation: Natural site amenities such as pathways, views, mature trees, riparian corridors, and parks should be preserved and/or used to enhance the design of new projects. (Fig. 15)

C.G.32: Riparian Preservation: Site design and orientation should maintain, preserve, and when possible, restore any riparian vegetation and corridor areas. Riparian corridors should be maintained as open space features in any new commercial development. (Fig. 15)

C.G.33: Access to Natural Areas: The design and orientation of parcels should encourage the use of natural areas. (Fig. 15)



B. PARKING

1. **LOT ORIENTATION:** Parking lots should be designed so that convenient parking and safe pedestrian and vehicular circulation is provided without excessive land consumption. Pedestrians should be able to move safely from their vehicles to the building.

C.G.34: Location: Off-street parking should be located behind frontage buildings whenever possible. (Fig. 3)

C.G.35: Lot Sharing: Owners of adjoining properties should share parking facilities to reduce the amount of land consumed by parking lots. (Figs. 3, 5 & 14)

C.G.36: Traffic Dispersal: Parking lots should have more than one entrance and be designed in a manner that disperses automotive traffic throughout the site.

C.G.37: Circulation: Parking lot circulation routes and parking areas should be distinct, with circulation routes having direct access to parking aisles and parking aisles having direct access to parking spaces. (Fig. 3)

C.G.38: Pedestrian Access: Parking areas should be designed in a manner that accommodates safe pedestrian access between buildings, between public right-of-ways and building entrances, and between parking lots and building entrances. Pedestrian pathways can be defined by use of distinctive paving colors or patterns, or textured paving that is different from vehicle drive aisles. (Figs. 3 & 11)

C.G.39: Visual Obstructions: Large objects should be strategically placed so they do not impair the driver's line of sight within a parking lot or at connections to the street, such as drive up ATM buildings and wide pillars or trellises.

C.G.40: Driveway Landscaping: Parking lot entrances/exits should have low landscaping on both sides to provide a clear line of sight. (Fig. 16)

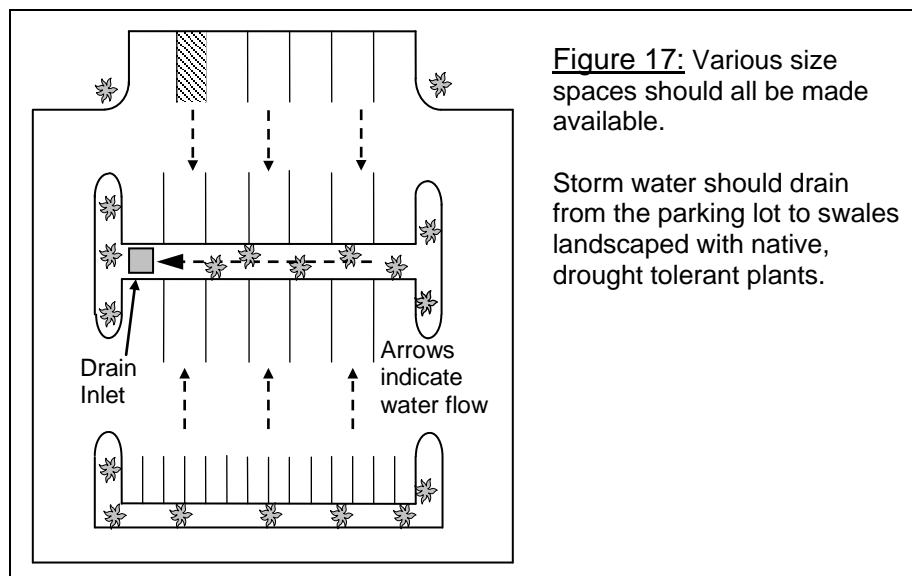


Figure 16: This parking lot entrance has low landscaping on both sides in order to maintain a clear line of sight. The sign is set back so that it does not obstruct visibility.

2. PARKING SPACES: Clearly labeled and reasonably sized parking spaces should be provided for the types of vehicles that may use the lot.

C.G.41: Defined Parking: Parking areas should be clearly paint striped to show the planned circulation and parking pattern.

C.G.42: Parking Space Sizes: Various size spaces should be provided to accommodate a variety of automobile sizes and driver needs. These spaces should provide for compact, traditional size, and ADA access. (Fig. 17)



3. DELIVERY AND LOADING AREAS: Adequately sized and safe delivery areas should be provided without using excessive land.

C.G.43: Truck Maneuvering: There should be adequate maneuvering space for delivery trucks. Deliveries should not encroach on parking spaces or any public right-of-way. (Figs. 5, 12 & 14)

C.G.44: Loading Areas: Loading areas should maintain clear access without interfering with pedestrian and vehicular circulation. (Figs. 5, 12 & 14)

C.G.45: Shared Loading Areas: Two or more businesses should utilize common loading areas to reduce excessive paving. (Figs. 5 & 14)

4. SHADE AND LANDSCAPING IN PARKING LOTS: Shade trees and attractive landscaping should be used in parking lots for the dual purpose of reducing “heat island effect” and providing a visually appealing and pleasant environment.

C.G.46: Minimize Heat: In order to cool large expanses of paved area, parking lots should be landscaped with shade trees or other shading devices and incorporate the use of lighter colored paving materials.

C.G.47: Shade Trees: Parking lots should be landscaped so that within 15 years, 50% of the total parking area will be shaded. Parking lot trees should be evenly spaced and dispersed over the entire parking field, with an irrigation system that is installed and designed for efficient water usage. Each parking lot tree should have a curbed tree well of sufficient depth and overhang distance to prevent tree damage from vehicle bumpers. See Appendix A *General Landscaping Design Guidelines and Plant Selection Grid* for detailed information regarding appropriate species that can be used for shading purposes.

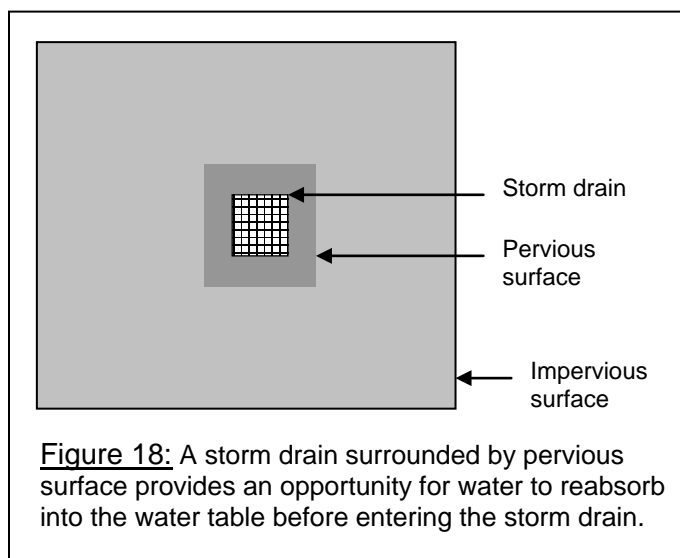
C.G.48: Landscaped Islands: Landscaped islands should create separate “pods” of parking that provide breaks in the paved area. (Fig. 17)

5. SURFACE RUNOFF: Site design should mitigate for potentially adverse environmental effects of storm water runoff by minimizing impermeable surfaces and allowing groundwater recharge where feasible.

C.G.49: Parking Lot Swales: Swales and planters should be utilized to capture storm water runoff in strategic locations of the parking lot and other paved areas for re-absorption into the ground. (Fig. 17)

C.G.50: Pervious Materials: Parking lots, walkways, and other paved areas should be constructed of pervious materials, to the maximum extent possible, that allow for storm water infiltration. (Figs. 4, 8 & 18)

C.G.51: Roof Runoff: Roof runoff from buildings should drain to a swale or be retained and used for landscape irrigation, where feasible.



C. LANDSCAPING

1. **SCREENING:** Landscape screening should be used to hide unsightly areas without blocking the line of sight for drivers. See Appendix A for detailed information regarding appropriate species that can be used for screening purposes.

C.G.52: Areas to Screen: Outdoor storage, trash collection areas, and delivery areas should be screened and enclosed so they are out of public view. (Fig. 26)

C.G.53: Plants for Screening: Landscape features such as vines or hedges should be used to hide unsightly areas.

C.G.54: Line of Sight: Screening should not be located in areas that would block the line of sight for drivers entering, leaving, or driving through the site.

C.G.55: Neighboring Residential Screening: Windows that allow a direct line of sight into neighboring residential areas should be screened with appropriate plants or building materials to ensure the privacy of the neighboring areas. (Figs. 12, 13 & 14)

C.G.56: Drive-Through Facilities: Stacking areas for vehicles in drive-through facilities should be screened from public view.

2. INTEGRATION WITH AND IMPROVEMENT OF THE SURROUNDING AREA:

New landscaping should be designed in a way that uses water efficiently while providing aesthetic and environmental benefits.

C.G.57: Trees: Existing large trees should be retained and new drought tolerant, native trees should be planted to improve air quality, provide shade, and create buffers. See Appendix A for detailed information regarding native and drought tolerant species. (Fig. 15)

C.G.58: Tree Grates: Trees that are planted within pedestrian areas should have replaceable grates around the base of the tree to provide a walking surface and room for the tree to grow. (Fig. 19)



Figure 19: The grate at the base of this tree provides a walking surface, allows water to absorb into the roots, and can be replaced if the trunk of the tree becomes too large.

D. OUTDOOR AND ACCESSORY SPACES

1. FOR SHOPPERS, PEDESTRIANS AND EMPLOYEES: Pleasant outdoor areas should be provided for shoppers, pedestrians and employees through the integration of creative design elements.

C.G.59: Shade: Natural tree canopies or awnings should adequately cover outdoor seating areas and walkways to protect people from sun and rain. (Figs. 7 & 21)

C.G.60: Vibrant Outdoor Areas: Vibrant and welcoming outdoor areas should feature art, street furniture and landscaping that compliment a building's setting. These elements should be placed along the sidewalk to provide a place for casual social interaction. (Figs. 7, 8, 9 & 20)

C.G.61: Seating: Multiple seating opportunities should be provided throughout commercial areas and shopping centers. (Figs. 7, 8, 9, 20 & 21)

C.G.62: Outdoor Eating Areas: Attractive and inviting outdoor eating areas should be located near restaurants and coffee shops. (Figs. 8, 9, 20 & 21)

C.G.63: Amenity Access: Outdoor areas such as plazas and courtyards should be adjacent to sidewalks that lead to other close amenities, such as stores, restaurants, or natural areas to promote pedestrian activity. (Fig. 4)



Figure 20: Different seating options are available in this commercial area with tables located near an ice cream store, a bench for shoppers to relax, and a platform around the clock. The design features are pedestrian scaled and welcoming.

2. SAFETY: Create defensible spaces on the site for safety of pedestrians.

C.G.64: Avoid Seclusion: Avoid creating secluded areas that cannot easily be observed from the parking lot, road, or other accessible locations.

C.G.65: Line of Sight: Arrange buildings, plants, and design elements in a way that allows for a clear line of sight down all walkways. (Figs. 7, 8, 11 & 21)

C.G.66: ATM Visibility: ATMs should be located in highly visible and well-lit locations.



Figure 21: The vines covering this walkway protect customers from sun and rain, but the area is still highly visible to the street and the parking lot for safety. Outdoor seating is available adjacent to the lawn.

E. SIGNAGE

For specific information on signage and sign regulations, please refer to the County's Sign Ordinance in the County Code.

1. AESTHETIC CHARACTER OF COMMERCIAL SIGNS: Attractive signage should be used to enhance architectural design and entice visitors to a commercial center.

C.G.67: Placement: Signs should be placed so they emphasize design elements of a building's façade.

C.G.68: Design: Signs should compliment the building style, convey the character of the business and be easy to read.

C.G.69: Walkway Clearance: Signs that extend over walkways should maintain an 8' clearance.

C.G.70: Window Coverage: Window signs should cover no more than 20% of the window space.

C.G.71: Prohibited Signs: Refer to County Code Section 8-2.2406 for sign regulations.

Signs that are prohibited include:

- general advertising signs along freeways,
- abandoned signs,
- signs illuminated with neon,
- signs with strobe or flashing lights,
- signs that move or make noise,
- roof signs,
- signs that may mislead or confuse pedestrian or vehicular traffic,
- signs on a natural feature such as a rock or tree,
- portable signs,
- off-premise advertising signs

F. LIGHTING

1. **ORIENTATION AND BRIGHTNESS:** Areas should be well lit without shining light on neighboring lots.

C.G.72: Safety: Lighting should be provided in all public spaces, including parking areas, entries, gathering spaces and walkways. This lighting should enhance safety of movement for cars and pedestrians.

C.G.73: Color Rendition: Lighting type should allow good color rendition for adequate visual recognition.

C.G.74: Light Pollution: All building and site lighting should be hooded, equipped with appropriate shields, and directed to the intended area of illumination to minimize off-site light spillage onto adjacent roadways, neighboring parcels, and the night sky.

C.G.75: Placement: Outdoor light fixtures should be low intensity and placed as low as possible to provide adequate light and coverage, but never higher than twenty feet (20').

BUILDING DESIGN

A. BUILDING MASS AND SCALE

1. **MASS:** Building height, width and depth create visual building mass. Building mass should be designed to provide a distinctive edge to the streetscape and compliment the existing architectural pattern of the area.

C.G.76: Visual Reduction of Mass: Building mass should be managed using one or more methods, including landscape features that soften edges or create interesting lines; recessing a second floor over the first floor; using horizontal or vertical offsets in wall surfaces; varying facades on long expanses of building; strategic placement of large potted plants; and/or articulating design details or awnings around doors and windows. (Figs. 22, 23 & 24)

C.G.77: Rooftop Equipment: Rooftop equipment should be concealed from adjacent properties by using compatible architectural features of the primary structure. (Fig. 23)

C.G.78: Recess Large Businesses: Anchor businesses such as large grocery stores, big box stores, and movie theatres should be slightly recessed from the street with smaller stores placed along the street to break up large expanses of wall and provide a pedestrian friendly environment. (Fig. 25)

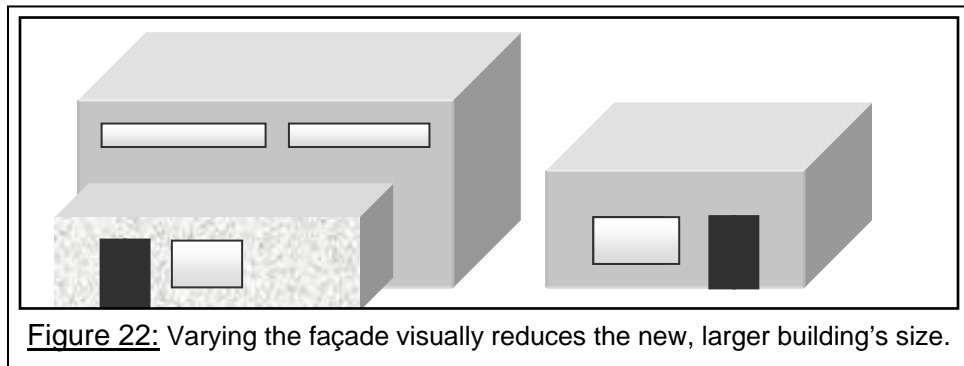
C.G.79: Articulation of Blank Walls: Blank walls should be varied along the length of the building. Articulation methods may include a change in texture, color, or material; public art displays; landscaped planters; fountains; offsets; window and entry placement; or other varied design details. (Fig. 24)

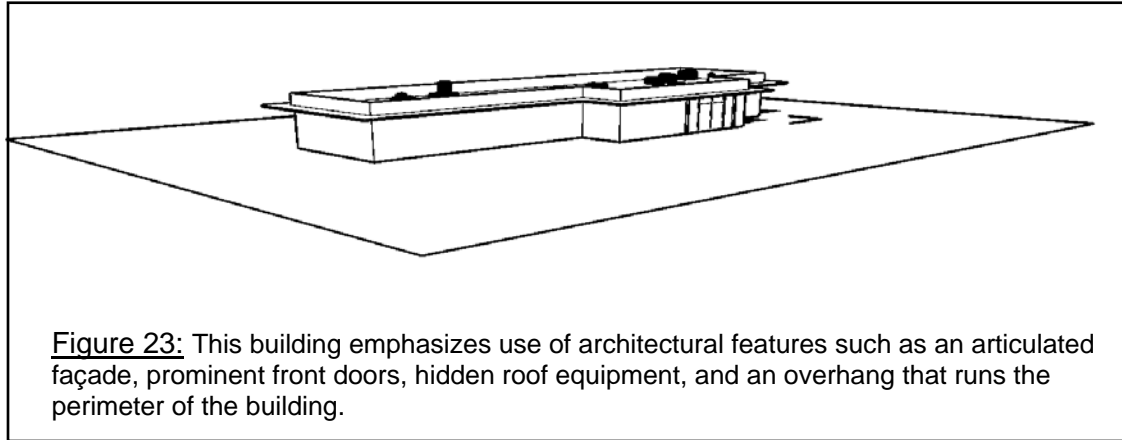
C.G.80: Landscaping: When large blank walls are unavoidable they should be softened with landscaping features such as planters, vines and trellises.

2. **SCALE:** The proportion of a new building's features should be relative to the surrounding buildings' features to create balance.

C.G.81: Size: The scale of new buildings should be compatible with the surrounding neighborhood. (Fig. 22)

C.G.82: Varied Facades: Exterior facades should be articulated and varied to reduce the scale and uniformity of large commercial buildings such as grocery stores and big box retailers. The use of eaves, columns, pilasters, cornices, windows and window coverings, canopies, fascia and roofs should be proportionate with the primary building. (Figs. 23 & 24)





B. ARCHITECTURAL FEATURES

1. **BUILDING DESIGN, MATERIALS, AND FINISHES:** The design, materials and finishes of the building's façade, entryway and roofline should create visual appeal at the pedestrian scale.

C.G.83: Pedestrian Scaled Design Features: New commercial construction should incorporate pedestrian scaled design features to encourage pedestrian activity. Such design features may include display windows at the sidewalk edge; awning shade features, canopies or trellises at the storefront; accentuated or recessed entries; outdoor dining areas; landscaping, shade trees, or benches. (Figs. 7, 8 & 9)

C.G.84: Character and Shading: Architectural features such as overhangs, projections, reveals, awnings, canopies, trellises, and covered pedestrian walkways are encouraged to add character and provide shading. (Figs. 10, 21, 22, 23, 24 & 25)

C.G.85: Entryways: Entryways should be oriented towards the predominant public view and should be clearly defined with accent colors or other architectural features such as canopies, overhangs, recesses, arches, tile work, or molding. (Figs. 10, 23 & 25)

C.G.86: Variation: Materials, finishes, and colors should be varied to create contrast and accent architectural features. (Figs. 22, 24 & 25)

C.G.87: Exterior Materials: Building materials and finishes should be durable, easy to maintain and able to withstand local climate changes. Recommended exterior materials include masonry, plaster, stucco, textured block, and brick. (Figs, 24 & 25)

C.G.88: Discouraged Materials: Plasticized materials and high gloss finishes are discouraged.

C.G.89: Colors: Large areas of bright, intense colors are discouraged. Brighter accent colors should be used for trim, windows, doors, and key architectural elements.

C.G.90: Logos: Colors or logos identified with an individual company should not be incorporated as a primary architectural feature, but may be used as an accent feature to enhance the overall architectural theme.

C.G.91: Rooflines: Variations in rooflines should be used on larger buildings. Roof designs should be integral with the architectural design of the development and not detract from that design. Roof elements such as parapet caps, projecting cornices, and corner details can be used to define a roof. (Figs. 23, 24 & 25)



Figure 25: This movie theatre uses various techniques to appear pedestrian scaled. The façade of the building is varied with details.

2. CONSISTENCY OF DESIGN: Building forms should respond to the natural environment or other existing developments so they enhance and enliven the character of the community or region.

C.G.92: Outbuildings: Outbuildings, such as storage areas and trash enclosures, should be architecturally compatible with the primary building (same type of materials and colors). (Fig. 26)

C.G.93: Service Station Islands: Service station islands should be architecturally integrated so that design character is compatible with the main building.

C.G.94: Overall Compatibility: Commercial buildings should be designed and articulated to improve the streetscape, enhance existing neighboring businesses, and improve overall economic vitality of the general area. (Figs. 23, 24 & 25)



Figure 26: This trash collection and recycling enclosure uses similar building materials and colors to blend in with the primary buildings.

SUSTAINABILITY

Commercial buildings should be designed in ways that promote energy efficiency and conservation of resources. Appendix C *Green Building Checklist* has information on sustainability and green building that relates to all built projects. In addition to the general measures listed in Appendix C, commercial buildings should:

- Be designed in a way that utilizes passive solar heating and cooling in order to reduce energy cost and consumption. This is especially important for large commercial buildings such as big box retailers and grocery stores due to their size.
- Possess a light colored roof to reflect a large percentage of solar radiation in order to reduce HVAC loads and energy consumption.
- Use ceiling mounted fans to reduce heat stratification and provide air movement.
- Use low-flow plumbing fixtures, energy efficient fixtures, systems and appliances, wherever feasible.
- Utilize natural sunlight through skylights and energy efficient light fixtures to reduce energy consumption due to lighting.

RESIDENTIAL GUIDELINES

INTRODUCTION

A. APPLICABILITY

The design guidelines in this section apply to any new development in areas zoned Residential Suburban (R-S), Residential One-Family (R-1), Residential One-Family or Duplex (R-2), Multiple-Family Residential (R-3) and Apartment-Professional Zone (R-4). Projects within a city shall conform to city guidelines.

B. PURPOSE AND GOALS

The purpose of these goals is to guide new residential development, planned developments, and large residential care facilities in a manner that will result in a variety of housing options to meet the needs of a diverse population.

C. ORGANIZATION

This document separates residential design into two main categories: street system and circulation, and site and building design. Subtopics are addressed within each of these categories. Each subtopic begins with a guiding principle and is supported by design guidelines. Visuals are provided for clarification and illustration. A brief section on how to incorporate residential specific sustainable building practices is provided at the end of this document.

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Though these guidelines are advisory, they reflect a strong commitment by the county to create neighborhoods that are attractive and welcoming. They are the standard to which projects will be evaluated. We recognize that for some projects not all of these guidelines can be met. In such cases, County staff is available to discuss these constraints with project proponents as early in the design process as possible. In this way, the spirit and intent of these guidelines can be met while guaranteeing the most effective use of private and public resources during design, review and approval, construction, and subsequent operations.

STREET SYSTEM AND CIRCULATION

A. ACCESS AND CONNECTIVITY

1. CONNECTIVITY: New residential development should provide for both internal and external connectivity, with an emphasis on the continuation of traditional development patterns of the community.

R.G.1: Discouraged Development Patterns: Spatial separation of new development from surrounding neighborhoods, such as minimal access points, perimeter sound walls, and abrupt transitions, are all strongly discouraged.

R.G. 2: Gated Communities: Gated communities in any location are strongly discouraged.

2. INTERNAL ACCESS: Internal access within new residential areas should provide for safe connectivity within the neighborhood.

R.G. 3: Safe and Efficient Access: Internal connectivity should ensure safe and efficient access between homes within the entire residential development.

R.G.4: Transportation: Internal connectivity should accommodate all forms of transportation: walking, bicycling, public transit, automotive travel, and emergency vehicles.

3. EXTERNAL ACCESS: External access routes between residential developments and adjacent sites should provide for safe connectivity.

R.G. 5: Area Access: External connectivity should ensure safe and efficient access to neighborhood commercial areas, employment centers, adjacent subdivisions, natural areas, public open space, and any other nearby amenity.

R.G. 6: Forms of Transportation: Connectivity between residential developments and adjacent areas should accommodate all forms of transportation as listed in Transportation, above.



Figure 1: Pedestrian pathways connecting neighborhoods to adjacent shops, restaurants, and residences should be logically integrated into new subdivisions and multi-family complexes.

B. TRAFFIC

1. TRAFFIC CALMING: Traffic calming measures should be used in residential areas.

R.G. 7: Traffic Calming Measures: Recommended traffic calming techniques may include, but are not limited to:

- Traffic tables
- Pedestrian scaled buildings, street furniture, and landscaping
- Tree lined landscape strips

- Bulb-outs
- Narrow streets
- Crosswalks with varied patterns and textures

2. STREET HEIRARCHY: A hierarchy of streets should be used in the design of new residential development. This hierarchy should consist of *neighborhood streets*, *collector streets*, and *arterials*.

R.G. 8: Neighborhood Streets: Single-family residences should be located on narrow neighborhood streets. A logical and comprehensible street pattern should be maintained.

R.G 9: Collector Streets: Multi-family residential developments, residential care facilities, and public facilities, such as parks and schools, should be located on collector streets, which provide a balanced function of access and mobility.

R.G. 10: Arterials: Arterials are busy streets that would expose residences to nuisances and safety hazards. New residential development should not be located on arterial streets, which serve as major transportation corridors that provide a high level of mobility.

C. OUTDOOR RECREATION SPACE

1. PUBLIC OPEN SPACE: Public open space is considered to be an integral part of every neighborhood. All residential developments are encouraged to integrate public open space into the neighborhood instead of paying in-lieu fees.

R.G. 11: Availability: Public open spaces should be available and accessible to all residents.

R.G. 12: Access: Residents should not need to cross arterial streets when accessing public open space.

R.G. 13: Pedestrian Crossing: Well-defined pedestrian crossings with signage, varied pavement texturing, or other traffic calming measures should be provided in the vicinity of public open spaces.

2. NATURAL AREAS: Existing site amenities such as wetlands, waterways, plant and animal habitats, and culturally significant landscapes should be preserved and restored in order to maintain a healthy ecosystem, maintain the local character of the area, and enhance the design of new projects.

R.G. 14: Preservation: Site amenities should be preserved and incorporated into public open space facilities, when appropriate.

R.G. 15: Riparian Areas: Riparian zones should be kept in a natural state. Introduction of non-native plants near a riparian zone is strongly discouraged.

SITE AND BUILDING DESIGN

A. WALLS AND BUFFERS

1. PREFERRED BUFFER TECHNIQUES: Commercial areas, public facilities, or open space areas are encouraged as the primary interface between arterials and residential districts.

R.G. 16: Sound Wall Interference: The use of sound walls as a buffer is discouraged because sound walls interfere with the visual cohesion of the overall area and do not provide an inviting environment that encourages pedestrian traffic.

R.G. 17: Sound Wall Alternatives: Alternative methods to sound walls are encouraged as buffers between arterials and residences.

2. SOUNDWALL GUIDELINES: In unusual circumstances sound walls may be necessary due to lot configuration. In these cases they should have sufficient architectural variety to make them less visually obtrusive.

R.G. 18: Sound Walls: When walls are necessary they should:

- Have architectural variety, such as offsets or use of varied materials and colors
- Be landscaped with vines, shrubs, or trees
- Incorporate frequent breaks for pedestrian and bicycle traffic
- Be of the minimum length to accomplish the needed result

B. ORIENTATION

1. VISUAL EMPHASIS AND SCALE: Visual emphasis should be on the main living area or entrance to the home, with design features at a human scale.

R.G. 19: De-emphasize Garage: Human scaled design features should be used to reduce the visual emphasis of the garage or parking areas. Possible methods to accomplish this result include:

- Placing a porch at the front of the house
- Projecting the second story out over the garage
- Locating a detached garage behind the house
- Recessing the garage so that it is farther from the street than the main living area
- Providing rear garage access through use of a private alley

R.G. 20: Reduce Paved Parking Areas: In higher density areas, additional techniques can be used to reduce the amount of land consumed by driveways and parking. These include:

- Shared driveways, which allow for one driveway to provide parking and garage access for two or more homes.
- Rear access parking through use of a private alley. Windows in the rooms over the garage should face the alley for increased visibility and safety.



Figure 2: Both homes have a porch as the prominent feature. A recessed second story makes homes of varying sizes architecturally compatible.



Figure 3: Compact development can make use of garages located on a private alley to the rear of the homes. The lack of garages visible to the street makes for a more inviting human scaled neighborhood (above right and left). Windows overlooking the alley increase safety (lower left). One private alley serves garages for homes on two different streets (lower right).

C. PARKING

1. LOCATION: Parking should be accessible and in close proximity to the home.

R.G. 21: Resident Parking: Unless there are superceding environmental or topographic concerns, parking for residences should be located as close as possible to the house to allow for easy resident access. This is especially important in multi-family complexes, where residents may be required to park in a parking lot.

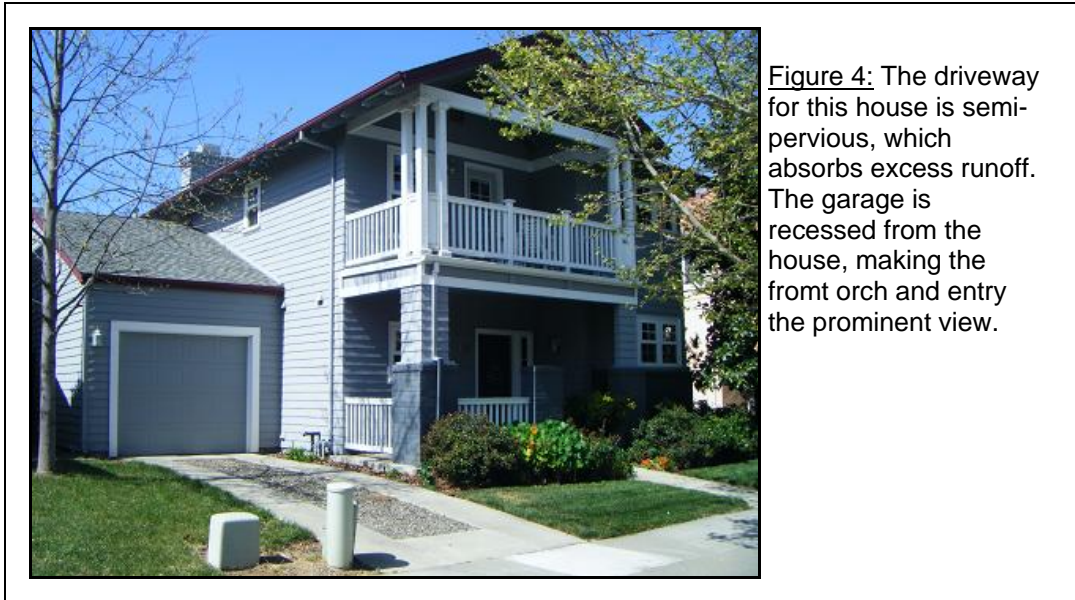
R.G. 22: Guest Parking: Guest parking should be evenly distributed throughout the neighborhood to accommodate all guests.

2. PERMEABLE SURFACES AND SWALES: Storm water should be allowed to percolate back into the water table through the use of permeable parking surfaces and/or landscaped swales.

R.G. 23: Permeable Surfaces: Permeable parking surfaces should be used where feasible to allow water to percolate back into the water table. Where permeable surfaces are not feasible, impermeable surfaces, such as concrete, should be kept to a minimum and/or water should be diverted to a swale before entering the storm drain.

R.G. 24: Landscaped Swales: Landscaped swales should be used to capture and filter storm water before it enters the storm drain. Possible designs include:

- Planters that are flush with the paved area
- Breaks in curbs to allow water to enter planters
- Landscaped swales surrounding storm drains



D. LANDSCAPING

1. PLANT CHOICE: New plantings should be native and drought tolerant, while mature plantings should be retained where feasible. See Appendix A *General Landscaping Design Guidelines and Plant Selection Grid* for detailed information regarding appropriate species that meet landscaping guidelines and the minimum planter size for each of these species.

R.G. 25: Native and Drought Tolerant Plants: Native and drought tolerant plants are encouraged in residential areas to reduce the need for excessive water consumption and fertilizer use.

R.G. 26: Mature Plantings: Mature trees and other prominent existing plants should be retained when building new residential developments.

R.G. 27: Lawns: Lawns should be minimal in size and used to accent a primary landscaping area that consists of native, drought tolerant plants.



Figure 5: Yards consisting of native drought tolerant landscaping can be lush and green, easy to maintain, and use less water than traditional lawns.

2. TREE PLACEMENT: Trees should be utilized for shading of streets and reducing the cooling loads of home air conditioning units. See Appendix A for detailed information regarding appropriate species that can be used for shading purposes.

R.G. 28: Shade Tree Canopy: A minimum of one tree per house should be placed along the streetside to create a shaded canopy over the street in single-family residential zones.

R.G. 29: Shade Trees: In addition to streetside shade trees, there should be another appropriately placed shade tree in the front yard to create shading for the house.

R.G. 30: Landscaped Islands in Parking Lots: Parking lots in multi-family residential areas should include landscaped islands. The landscaped islands should include adequate tree plantings to shade the parking lot by at least 50% within 15 years.



3. **SCREENING AND BUFFERING:** Plants should be used to screen and buffer where appropriate. See Appendix A for detailed information regarding appropriate species that can be used for screening purposes.

R.G. 31: Window Screening: Trees, shrubs or vines can be used to provide privacy where home windows face public facilities, collector streets, or arterials.

R.G. 32: Equipment, Utility Boxes and Sound Walls: Shrubs and vines should be used to screen mechanical equipment, sound walls, and utility boxes.

E. LIGHTING

1. **FIXTURE DESIGN AND SCALE:** Lighting fixtures should visually blend with the architectural style of the residential development and be placed as low as possible to provide lighting without glaring onto adjacent residences.

R.G. 33: Street Lighting: The design and scale of lighting fixtures should be compatible with existing lights. Where no lights previously exist, the fixtures should be human scaled and of an attractive design that fits in with the architectural style of the homes.

R.G. 34: Orientation: All lighting should be oriented in a manner that will preserve the nightscape and not glare into homes.

R.G. 35: Walkway Lighting: Bollards or lights mounted on short posts are encouraged along walkways. Where overhead lighting exists it should be the lowest level possible to provide a safely lit area.

F. ARCHITECTURAL STYLE

1. DOORS AND WINDOWS: Home entrances should be visually prominent and window orientation should ensure privacy.

R.G. 36: Door Orientation: Front doors of residences should be oriented toward the predominant public view.

R.G. 37: Window Orientation: Windows facing adjacent properties should be oriented in a manner that ensures privacy of neighboring residents. Windows of adjacent houses should not directly align with each other.

R.G. 38: Window Screening: In unusual circumstances where windows unavoidably impose on a neighboring resident's privacy, landscape screening should be used.

2. ARCHITECTURAL DETAILS: To create residential areas that are attractive and interesting, individual structures should include a variety of architectural details, materials, and complimentary colors. Traditional housing materials and design are encouraged in order to enhance the existing architecture of the community.

R.G. 39: Recommended Materials: Recommended materials for exterior facades of residential developments within Yolo County consist of:

- Wood
- Plaster
- Stucco
- Brick
- Stone

R.G. 40: Discouraged Materials: Materials strongly discouraged for exterior facades of residential developments within Yolo County consist of:

- Metal
- Reflective Surfaces
- Unfinished concrete

R.G. 41: Structure Design Elements: Each structure should include a variety of complimentary design elements. Examples of design elements that are encouraged include:

- Windows with various design details such as dormers, false balconies, flower boxes, recessed or beveled recessed windows, mullions and shutters
- Window shades, overhangs, or trellises made of various materials such as exposed wood, painted wood, or faux wood
- Facade detailing such as false beams, angled braces, corbels, waterfall trim, and brick or stone veneers (veneers that extend the entire height of the first story are strongly encouraged)
- Use of vents to vary the look of the building and add architectural detail

R.G. 42: Neighborhood Design Elements: Neighborhoods should include a variety of architectural styles that represent the diversity existing throughout Yolo County. Varying styles and the use of compatible materials and colors can be extended to:

- Garage doors
- Gutter profiles
- Wall textures, such as board and batten, lap siding, stone, brick, and/or stucco.
- Trim elements (see above)
- Porches
- Rooflines

R.G. 43: Structure Color Schemes: Each structure should be painted a minimum of three complimentary colors.

R.G. 44: Neighborhood Color Schemes: Neighborhoods should include buildings with a variety of color schemes. Entire neighborhoods where all buildings are painted the same colors are discouraged.

3. ROOF DESIGN: Roof designs should be architecturally integrated with the design of the dwelling.

R.G. 45: Roof Styles: A variety of roof styles, including varied heights, directions and pitches should be used. Additional roof details and embellishments such as cupolas, dormers, louvers, vents, lanterns, pinnacles, finials, compounded fascias, parapets, and

R.G. 46: Roofing Materials: A variety of roofing materials such as stone, slate, concrete or clay tiles, metal, or architectural grade profile asphalt shingles should be used throughout the neighborhood.

R.G. 47: Mechanical Equipment: Roof mounted mechanical equipment is strongly discouraged. Mechanical equipment should be screened with architecturally compatible materials and colors, with noise attenuation measures incorporated into the design.

Visual Representations of Architectural Details: The following photos illustrate some of the architectural details that are encouraged by Yolo County.



- Use of complimentary colors
- Unique garage doors
- Brick, stucco, and lap siding
- Architecturally compatible light fixtures
- Angled braces and corbels
- Shutters on windows
- Board and batten below roof

- Unique siding on second story
- Use of brick for entire first story
- Mullions in windows
- Variation of roof materials between homes



- Waterfall trim around garage and above doorways
- Stone facade on porch
- Vents used as decorative details
- Architecturally compatible street light fixture

4. MASS AND SCALE: Building mass and scale should visually blend with the overall architectural theme of the community.

R.G. 48: Recommended Design Features: Newer developments should visually blend with existing residences. The County recommends the use of design features such as step backs, articulated rooflines, and articulated wall surfaces to accomplish this.

R.G. 49: Large Wall Expanse: Exterior walls should include architectural design elements to articulate the facade and break up the expanse of wall.

R.G. 50: Building Placement: Building placement should be varied to provide an aesthetically pleasing streetscape.

R.G. 51: Facades: Styles and facades of buildings within residential districts should blend with the adjacent existing properties.

G. AFFORDABLE HOUSING

1. INTEGRATION WITH OVERALL DEVELOPMENT: All residential developments should include affordable housing that is spatially integrated with the market rate houses.

R.G. 52: Separation Discouraged: Affordable units should be integrated throughout the development. Separate “pods” of affordable houses that are distinctly different than the rest of the development in terms of detailing, materials, or style are strongly discouraged.

R.G. 53: Half-Plexes and Second Units: Integration of affordable units can be accomplished by dispersing half-plexes or second units throughout the development. Second units may include “granny flats” and small units situated behind market rate houses or above garages.

R.G. 54: Private Yards: Each unit in a duplex or half-plex should have direct access from the living area to a private rear yard.



Figure 7: Both pictures illustrate integration of affordable (duplex) housing within neighborhoods of single-family homes.



2. APPEARANCE: Affordable houses should visually blend with market rate houses.

R.G. 55: Scale: The use of scaling techniques, such as step backs, articulated rooflines, and articulated wall surfaces, can be used to blend market rate housing with affordable housing.

R.G. 56: Materials and Architectural Details: Affordable units should include the same materials and architectural details as the market rate homes.

R.G. 57: Lot size: Reduced lot size is encouraged as a technique to provide affordable housing.



Figure 8: Small cottages, which are integrated into neighborhoods with larger homes, can provide affordable housing for seniors, singles, and small families.

Figure 9: This example of compact development shows attached units with garages facing the main street. The garages are recessed farther from the street than the porch.



H. UNIVERSAL DESIGN PRINCIPLES

1. **ACCESSIBILITY:** Residential units should be designed with accessible design features in order to meet existing and future housing needs for all county residents.

R.G. 58: Housing Diversity: A variety of home types and sizes on varying lot sizes and configurations should be evenly distributed throughout new developments to provide housing for a diverse population.

R.G. 59: Interior Features: Counters, storage and cabinetry should be located at accessible heights to allow use and access by all individuals, regardless of mobility impairments.

R.G. 60: Hardware: Lever type appliances, such as doorknobs, faucets, and rocker type controls should be provided in all residential units.

R.G. 61: Grab Bars: Bathroom walls should be reinforced to permit the installation of grab bars in the shower and near the toilet.

2. WHEELCHAIR ACCESSIBILITY: Residential units should be designed in a manner that is accessible for wheelchairs.

R.G. 62: Hall and Doorway Width: Hallways and doorways should be at least 42 inches wide in order to accommodate a wheelchair.

R.G. 63: No-Step Entrances: Entrances should be designed without steps and with level landings to allow access for wheelchairs.

R.G. 64: Bathrooms: Bathrooms should be designed for accessibility. Design considerations should include, but are not limited to:

- Grab bars near the toilet and in the shower
- Floor space to maneuver a wheelchair
- Easy shower access (roll-in shower)
- Knee space under the sink

- Shelves, fixtures, storage, medicine cabinets, mirrors and other features placed at an accessible height (i.e., between 42 inches and 48 inches from finished floor)

SUSTAINABLE BUILDING PRACTICES

A. DEVELOPMENT LOCATION

If feasible, new residential developments should be placed either immediately adjacent to, or within, existing infrastructure. This has numerous benefits for builders and residents, such as reduced infrastructure costs and increased availability of transportation alternatives. See Appendix B: *Sustainability Guidelines* for more detailed information.

B. BUILDING ORIENTATION

Residences should be situated on an east to west axis and oriented in a manner that allows them to take advantage of passive solar lighting and heating. See Appendix B for more detailed information.

C. GREEN BUILDING PRACTICES

Building practices should be considerate of environmental impacts. This can be done using a number of simple methods such as recycling job site construction and demolition waste, donating unused building materials, and substituting solid lumber for engineered lumber. See Appendix B for more detailed information.

D. ENERGY CONSERVATION FEATURES

Residences should be designed and built with future residents' energy consumption in mind. Installing energy efficient windows, insulation, and appliances can reduce future energy use. In addition, installing light colored roofing, whole house fans, solar panels, and efficient HVAC units can significantly reduce heating and cooling loads. See Appendix B for more detailed information.

APPENDIX A

GENERAL LANDSCAPING DESIGN GUIDELINES AND PLANT SELECTION MATRIX

A. APPLICABILITY

These “General Landscaping Design Guidelines” give general plant selection information that applies to all ornamental landscaping in Yolo County. See the landscaping section of the guidelines that apply to your site for site-specific information, such as where landscape screening is recommended or required.

B. ORGANIZATION

The “Guidelines” section gives a synopsis of how the suggested plants were chosen for this document. The following “Plant Species Guide” includes trees, shrubs, ground covers, vines, and ornamental grasses that are recommended for the Yolo County area based on the guidelines. The “Plant Species Guide” is presented in a grid format to make it easy to find plants that meet the needs of the site.

LANDSCAPING GUIDELINES

A. RECOMMENDED PLANTS

Plants should be used that are proven for use in Yolo County and that are **heat tolerant, drought tolerant, and native** in addition to offering visual interest with varying forms, textures and colors. Plants that are heat tolerant, drought tolerant, and native are recommended for many reasons. Due to the climate in the Yolo County area it is important that plants can tolerate summer temperatures above 100 degrees. It is also important that plants are drought tolerant due to low rainfall during the summer. Excessive irrigation of ornamental landscaping wastes precious water that should be conserved for crops and other important uses. Finally, it is important to plant native species so that invasive species do not take over.

When drought tolerant, native plants are used less time and money will need to be used to maintain the landscaping because the plants will be suited their environment. When plants are not suited to their environment more time is spent maintaining the plants and the landscaper often resorts to using fertilizers, herbicides, and pesticides in an effort to make the plants thrive in an environment they are not suited for. Therefore, using landscaping that is suited towards the local environment works as a mutual benefit to both the landowner and the entire surrounding area. The landowner benefits by spending less time and money maintaining the landscaping. The surrounding area benefits because they are not subjected to the fertilizers, herbicides, and pesticides needed to maintain a non-native landscape. The entire watershed benefits because less fertilizers, herbicides,

and pesticides end up in storm drain runoff. The attached spreadsheet has an extensive listing of heat tolerant, drought tolerant, native plants recommended for Yolo County.

B. INVASIVE PLANTS: DO NOT PLANT

The following species have become invasive and are strongly discouraged.

- Pampasgrass or Jubatagrass: *Cortaderia selloana* or *Cortaderia jubata*. Crowds out native grasses and creates a fire hazard.
- Iceplant: *Carpobrotus edulis*. Drought tolerant, but has invaded natural habitats, especially sand dunes.
- Fennel: *Foeniculum vulgare*. Fennel is very competitive against native species.
- English or Algerian Ivy: *Hedera helix* or *Hedera canariensis*. These can smother understory vegetation, kill trees, and harbor snails and rats.
- Periwinkle: *Vinca major*. Stem fragments can re-sprout, causing them to smother native plants.
- Giant Reed or Giant Cane: *Arundo donax*. These plants grow tall and dense along waterways, causing a fire hazard and clogging the water flow.
- Green Fountain Grass: *Pennisetum setaceum*. Seeds spread aggressively and the plant grows fast. Fuels fires. NOTE: Red varieties of fountain grasses are not invasive, “*Rubrum*”.
- Bridal Broom, French Broom, Portuguese Broom, Scotch Broom, or Spanish Broom: *Retama monosperma*, *Genista monspessulana*, *Cytisus striatus*, *Cytisus scoparius*, or *Spartium junceum*. The Flowers produce thousands of seeds

resulting in dense thickets that invade plant and animal habitats and cause a fire hazard.

- Scarlet Wisteria: *Sesbania punicia*. This plant is invading river and stream corridors and pushing out native plants and animals.
- Tree of Heaven: *Ailanthus altissima*. Root sprouts can emerge up to 50' feet away from the parent tree.
- Blue Gum Eucalyptus: *Eucalyptus globules*. These trees are invading native plant communities and are extremely flammable.
- Russian Olive: *Elaeagnus angustifolia*. Invades river and stream corridors, but provides a poor habitat for animals.
- Black Locust: *Robinia pseudoacacia*. Spreads easily, grows very thick and all parts of the tree are toxic to humans and animals.
- Saltcedar: *Tamarix spp.* Uses excessive water and increases soil salinity. Also a fire hazard.
- Chinese Tallow Tree: *Sapium sebiferum*. Reproduces by root and seed and crowds out native plants.
- Mayten: *Maytenus boaria*. Has been found to be quickly spreading through the valley
- Edible Fig: *Ficus carica*. Dominates stream and riverside habitats.

C. RECOMMENDED LANDSCAPING RESOURCES

The user of this guide is encouraged to consult with landscape professionals and/or publications to determine appropriate locations and uses for each plant. The following recommended plant list is not all-inclusive and other plant selections may be used with site plan approval. In addition, it is important to recognize that the growth patterns listed in this document are approximations and actual growth patterns will vary based on location and soil type among many other factors. Please contact a landscape professional if you have specific questions about how a particular plant will fare in a specific location.

The following resources were used to write these landscape guidelines and are recommended sources for additional information:

GENERAL INFORMATION

- California Native Plant Society: Sacramento Valley Chapter: The website for the Sacramento Chapter of the California Native Plant Society has information on why it is important to plant native plants and recommended plant lists.
<http://sacvalleynps.org/>
- UC Davis Arboretum: The website for the UC Davis Arboretum publishes lists of “All Stars”. “All Stars” are plants that are well suited to the central valley. Documents on this website include descriptions and photos of many of the plants.
<http://arboretum.ucdavis.edu/AllStar.htm>

- Calflora: The website for Calflora has a user-friendly species search that gives the user feedback on appropriate plants for various areas with plant photos.
<http://www.calflora.org/>
- California Native Plants for the Garden; by Carol Bornstein, David Fross, and Bart O'Brien: This book has extensive information, descriptions, and pictures of recommended plants, as well as information on how to design and care for landscaped areas.
- The Sunset Western Garden Book; published by Sunset: This book gives details on over 8,000 plants and information on how to plant in specific climates.

INVASIVE SPECIES INFORMATION

- UC Cooperative Extension Environmental Horticulture Research and Info Center: This website has brochures on invasive species organized by region compiled by the University of California Cooperative Extension. <http://groups.ucanr.org/ehric/>
- California Invasive Plant Council: This website includes a spreadsheet of all California invasive species compiled by the California Invasive Plant Council.
<http://www.cal-ipc.org/>

WATER QUALITY

- UC Agriculture and Natural Resources Cooperative Extension: This site includes information regarding how fertilizer and herbicides harm water quality.
<http://ucanr.org/index.cfm>

TREES									
Common Name	Botanical Name	Height at Maturity	Spread at Maturity	Growth Rate	Min. Planter Width	Water Req.	Native	Fall Color	Flower
Deciduous									
Aristocrat Pear	<i>Pyrus calleryana "Aristocrat"</i>	25-50'	30'	Moderate	4'	M		X	
Big-leaf Maple	<i>Acer macrophyllum</i>	18'-100'				M	X	X	X
California Buckeye	<i>Aesculus californica</i>	15'-30'				L	X		X
European Hackberry	<i>Celtus australis</i>	40'	30-40'	Moderate	6'	M			
European Hornbeam	<i>Carpinus betulus</i>	40'	40'	Rapid	6'	M		X	
Fan-Tex Ash	<i>Fraxinus velutina 'Rio Grande'</i>	30-50'	30-40'	Rapid	6'	M		?	?
Flowering Plum	<i>Prunus cerasifera</i>	20'	12'	Moderate	3'	M		X	
Golden Rain Tree	<i>Kolereuteria paniculata</i>	20-35'	10-40'	Moderate	4'	M		X	
Kentucky Coffee Tree	<i>Gymnocladus dioica</i>	60-100'	45-50'	Rapid		M			
London Plane Tree	<i>Platanus acerifolia "Bloodgood Strain"</i>	60'	50'	Rapid	8'	M			
Maidenhair "Autumn Gold"	<i>Ginkgo b. "Autumn Gold"</i>	60'	45'	Slow	6'	M		X	
Maidenhair "Saratoga"	<i>Ginkgo b. "Saratoga"</i>	60'	45'	Slow	6'	M		X	
Sour Gum Tree/Tupelo	<i>Nyssa sylvatica</i>	40'	20'	Moderate	4'	M		X	
Sawleaf Zelkova	<i>Zelkova serata</i>	50-90'	50-90'	Rapid	6'	M		X	
Western Redbud	<i>Cercis occidentalis</i>	6'-16'				L	X		X
Western Sycamore	<i>Platanus racemosa</i>	30-110'		Rapid		M	X		
Ornamentals									
Chitalpa "Pink Dawn"	<i>Chitalpa tashkentensis</i>	20-30'	20-30-	Rapid	4'	M			
Crape Myrtle	<i>Lagerströmia indica or hybrids</i>	8'-30'	5'-25'	Moderate	3'	L			
Eastern Redbud "Forest Pansy"	<i>Cercis candensia</i>	25-35'	25'	Moderate	3'	M		X	
English Hawthorn	<i>Crataegus laevigata "Paul Scarlet"</i>	18-25'	15-25'	Moderate	4'	M		X	
Flowering Crabapple	<i>Malus floribunda "Prairiefire"</i>	20'	20'	Moderate	4'	M			
Coniferous Evergreens									
Atlantic Cedar	<i>Cedrus atlantica</i>	60'+	30'	Slow/Mod	6'	M			
Arizona Cypress	<i>Cupressus arizonica</i>	40'	20'	Slow/Mod	6'				
Beefwood	<i>Casuarina stricta</i>	20-35'	20-35'	Rapid	6'				

TREES (Cont.)									
Common Name	Botanical Name	Height at Maturity	Spread at Maturity	Growth Rate	Min. Planter Width	Water Req.	Native	Fall Color	Flower
Coniferous Evergreens (Cont.)									
Coast Redwood	<i>Sequoia semperviens "Soquel"</i>	70-90'		Rapid	8'	M	X		X
Deodar Cedar	<i>Cedrus deodara</i>	80'	40'	Rapid	6'	M			
Fern Pine	<i>Podocarpus gracilor</i>	20'-60'							
Ghost Pine	<i>Pinus sabiniana</i>	100'					X		
Incense Cedar	<i>Calocedrus decurrens</i>	75-90'	10-15'	Slow/Mod	6'	L	X		X
Japanese Cryptomeria	<i>Cryptomeria japonica</i>	100'	30'	Rapid	6'				
Western Red Cedar	<i>Thuja plicata "Fastigiata"</i>	80-90'	20-25'	Moderate	6'				
Broadleaf Evergreens									
African Sumac	<i>Rhus lancea</i>	20-30'	20-35'	Slow		L			
California Laurel	<i>Umbellularia californica</i>	20-25'	20-25'	Slow		M	X		X
Toyon	<i>Heteromeles arbutifolia</i>	8'-25'	8'-15'			M	X		X
Oaks									
Blue Oak	<i>Quercus douglasii</i>	30-50'	40-70'	Moderate	8'		X		
Burr Oak	<i>Quercus macrocarpa</i>	60-75'	60-75'	Moderate	8'				
Cork Oak	<i>Quercus suber</i>	40'	40'	Moderate	8'	L			
English Oak	<i>Quercus robur</i>	50-60'	30'	Rapid	8'				
Holly Oak	<i>Quercus ilex</i>	40-70'	40-70'	Moderate	8'	L			
Interior Live Oak	<i>Quercus wislizenii</i>	30-70'				L	X		
Scarlet Oak	<i>Quercus coccinea</i>	60-80'	40-60'	Moderate	8'	M		X	
Southern Live Oak	<i>Quercus virginiana</i>	60'	60-90'	Moderate	8'				
Valley Oak	<i>Quercus lobata</i>	70'+	70'+	Moderate	8'	L	X		X

SHRUBS							
Common Name	Botanical Name	Height	Spread	Water Req.	Native	Fruit	Flower
California Buckeye	<i>Aesculus californica</i>	15'-30'		L	X		X
Western Redbud	<i>Cercis occidentalis</i>	6'-16'		L	X		X
Toyon	<i>Heteromeles arbutifolia</i>	8'-25'	8'-15'	M	X	X	X
Wild Lilac	<i>Ceanothus sp.</i>	various	various	M	X		X
Coyote Bush	<i>Baccharis pilularis</i>	8'-25'	8'-25'	L	X		X
California Wild Rose	<i>Rosa californica</i>	5'	8'-16'	M	X		X
Fuchsia-flowered Gooseberry	<i>Ribes speciosum</i>	about 6'	various	M	X		X
Western Spice Bush	<i>Caulycanthus occidentalis</i>			L	X		X
Red-twig Dogwood	<i>Cornus stolonifera</i>			M	X		X
Manzanitas	<i>Arctostaphylos sp.</i>	various	various	M	X		X
Bush Poppy or Island BP	<i>Dendromecon rigida</i> or <i>D.harfordii</i>	3'-6'		M	X		X
Cleveland Sage	<i>Salvia clevelandii</i>	4'		M	X		X
Coffeeberry	<i>Rhamnus californica</i>	6'-8'	6'-8'	M	X	X	
Jerusalem Sage	<i>Phlomis fruticosa</i>			L			X
St. Catherine's Lace	<i>Eriogonum giganteum</i>	5'	5'-10'	L	X		X
Japanese Kerria	<i>Kerria japonica</i>			M			X
Forsythia	<i>Forsythia x intermedia</i>			M			X
Golden Currant	<i>Ribes aureum</i>	8'-16'	6'-12'	M		X	X

GROUND COVERS AND VINES								
Common Name	Botanical Name	Height	Spread	Water Req.	Native	Fruit	Flower	Fall Color
Creeping Mahonia	<i>Mahonia or Berberis repens</i>	1'-6'	various	M	X	X	X	
Manzanitas	<i>Arctostaphylos sp.</i>	various	various	M	X		X	
Jasmine (Asian or Ivory Star)	<i>Trachelospermum asiaticum</i>		20'	M			X	
Pachysandra	<i>Pachysandra terminalis</i>							
Taiwan Raspberry	<i>Rubus pentalobus</i>			M		X		X
Giant Alumroot or Coral Bells	<i>Heuchera maxima and hybrids</i>			M	X			
Bergenia or Winter Saxifrage	<i>Bergenia cordifolia</i>			M			X	
Coast Purple Sage	<i>Salvia leucophylla</i>			L	X		X	
Common Yarrow	<i>Achillea millefolium</i>	1'-4'		M	X		X	
Oregon Grape	<i>Mahonia or Berberis Sp.</i>	1'-6'	various	M	X	X	X	

GRASSES AND FORBES						
Common Name	Botanical Name	Height	Spread	Water Req.	Native	Flowering
Deer Grass	<i>Muhlenbergia rigens</i>	4'	4'	L	X	
Lavender	<i>Lavendula species</i>	12"-18"		L		X
Giant Wild Rye	<i>Leymus condensatus</i>	6'-8'	4'-5'	M	X	
Lindheimer's Muhly Grass	<i>Muhlenbergia lindheimeri</i>	5'		L	X	
Begelow's Bear Grass	<i>Nolina bigelovii</i>	6'		L		X
New Zealand Flax	<i>Phormium tenax</i>			L		
Blue Grama Grass	<i>Bouteloua gracilis</i>					
Berkeley Sedge	<i>Carex tumulicola</i>	3'	3'	M	X	
Serpentine Columbine	<i>Aquilegia eximia</i>	4'-5'		M	X	X
Blue Grama Grass	<i>Bouteloua gracilis</i>					

APPENDIX B

SUSTAINABILITY DESIGN GUIDELINES

A. APPLICABILITY

The building practices and design strategies discussed in this document should be used whenever possible. This document includes guidelines that apply to all built projects. Guidelines that are specific to, or especially important for, residential, commercial, or industrial projects will be discussed in the “Sustainability” section of those guidelines. Sustainability sections of those guidelines are to serve as supplemental information to this document; this document should be referred to for all built projects within Yolo County.

B. PURPOSE AND GOALS

Sustainable building allows Yolo County to meet its current needs for housing, industry, and business without compromising the ability of future generations to meet their needs. The purpose of this document is to provide building professionals with a well-organized and easy to use document that outlines sustainability guidelines that are important within Yolo County. The goal is to have them integrate as many sustainable techniques as possible into their project by using this document as a guide.

C. ORGANIZATION

Sustainable building techniques fall into five distinct categories: site selection, resource efficiency, energy conservation, water conservation, and indoor environmental quality. These five categories serve as the organizational structure of this document.

D. TAX BREAKS, FUNDING AND INCENTIVES

The importance of sustainable building has resulted in a number of financial incentives.

- For current tax rebates: contact a tax professional and ask about possible rebates due to the Energy Policy Act of 2005, or visit the Energy Tax Incentives Project website at www.energytaxincentives.org.
- For federal incentives: visit the EPA's Green Building website at www.epa.gov/greenbuilding/tools/funding.htm.
- For incentives offered by the state: visit the Database of State Incentives for Renewables and Efficiency at www.dsireusa.org

SUSTAINABILITY GUIDELINES

A. SITE SELECTION

1. Transportation Access: Developments should be in close proximity to all forms of transportation infrastructure, including bike lanes, sidewalks and public transportation, in order to offer transportation alternatives to the development and reduce pollution and congestion.

2. Amenity Access: Developments should be in close proximity to local amenities and necessities, such as shopping, schools and open space.

3. Balance Amenities: Developments should provide amenities that the population immediately adjacent to the development can easily utilize. For example, new homes should be near existing schools and should be configured and priced to reflect the local workforce, and commercial developments should appeal to existing local residents.

4. Tree Conservation: Trees should be preserved and construction damage to their root systems should be avoided.

5. Brownfields Reuse and Infill: Lots that qualify as infill or brownfields are the preferred location of new developments. Use of these lots as opposed to other lots results in less sprawl.

6. Regional Asset Preservation: New developments should preserve existing assets, such as farmland, open space, wetlands, and habitat.

B. RESOURCE EFFICIENCE

1. **Home Size:** Well-designed small homes can meet the needs of various types of households while consuming less land and building materials. In addition, the future inhabitants will consume less energy as a result of heating, cooling, and lighting less space.
2. **Wood Sources:** Wood should come from rapidly renewable sources; use of tropical hardwoods is strongly discouraged.
3. **Reuse of Materials:** Use of salvaged materials or materials with a significant recycled content are encouraged.
4. **Use of OSB:** Use of OSB (Orientated Strand Board) for sub floor and sheathing is encouraged as a measure to reduce the need for large diameter old growth trees.
5. **Construction Waste:** Waste from the construction site should be recycled, donated to a local charity, or diverted from the landfill whenever possible.
6. **Concrete:** Replace Portland cement in concrete with recycled flyash.
7. **Lumber:** Engineered lumber should be used in for the structural frame and building envelope.
8. **Flooring:** Flooring should come from rapidly renewable sources (bamboo or cork), or be from reclaimed materials.

C. ENERGY CONSERVATION

1. **Roofing Materials:** Energy Star labeled roofing materials or a light colored roof should be used to reflect rays from the sun and reduce cooling loads.
2. **Install Solar Water Heater:** A solar water heater should be installed to reduce energy consumption associated with water heating.

3. Pre-plumb for Solar Water Heater: Plumbing should be installed that would enable future residents to easily install a solar water heater, even if a solar water heater is not installed at the time of construction.

4. Install PV (photovoltaic) panels: PV panels should be installed to reduce future energy consumption.

5. Install Wiring Conduit for Future PVC Panels: Conduit should be installed that would enable future residents to easily install PV panels, even if PV panels are not installed at the time of construction.

6. Building Orientation: Buildings should be orientated to face north and south, or be within 30 degrees of north/south orientation, to allow a comfortable level of heat and light into the building during the majority of the day. This reduces energy consumption due to heating, cooling, and lighting.

7. Window Orientation: Windows should be orientated in a way that takes advantage of prevailing breezes and allows air movement through the building.

8. Shading: Buildings, especially south and west facing windows, should be shaded from the sun to reduce summer cooling loads. Recommended shading techniques include trellises, window shades, canopies, roof overhangs, and trees.

9. Window Quality: Energy Star dual glaze windows should be used to reduce summer heat and winter cold from entering the building.

10. Insulation: Insulation with a high R (heat resistance) factor should be used in all buildings.

11. Windows and Doors: All windows and exterior doors should be Energy Star rated and seal tightly.

12. Energy Efficiency: Energy efficient heating and cooling systems, lighting, and water heating systems should be used.

13. Appliances: All appliances should be Energy Star rated.

14. Hot Water Pipes: Insulate all hot water pipes.

15. HVAC and Ducting Location: All ducting and the HVAC system should be located within the conditioned space.

16. Tankless Water Heaters: Tankless water heaters are encouraged because they use less energy and deliver hot water quicker, resulting in reduced water and energy consumption.

D. WATER CONSERVATION

1. Plants and Landscaping: Regionally appropriate plants and landscaping techniques should be used to provide shade and provide an attractive environment without using excessive water.

2. Irrigations Systems: Water conserving irrigations systems should be used in all landscaped areas.

3. Kitchen and Bathroom Fixtures: All fixtures in the bathroom and kitchen should be high efficiency or have flow reducers installed. Only high efficiency toilets should be installed.

4. Appliances: Only water efficient dishwashers and clothes washers should be installed.

5. Water Recycling: Pre-plumbing a greywater system and/or installing a water catchment/retention system for irrigation uses is encouraged.

E. INDOOR ENVIRONMENTAL QUALITY

1. Paints and Sealants: Non-toxic building materials should be used in all construction, including low or zero VOC (volatile organic compound) paints and sealants.

2. Insulation Materials: Insulation made from non-toxic sources, such as soybeans, cellulose, or cotton is encouraged.

3. Reduced Formaldehyde: All interior finishes, including subfloor, cabinets, countertops, and shelving, should be made from materials with low formaldehyde content.

4. Natural Lighting: Natural daylight should reach the majority of the indoor space of houses.

5. Natural Ventilation: Natural ventilation should be available through the use of operable windows, fans, building orientation, and other techniques. The HVAC system should filter all air coming into the building from outside and vent stale indoor air outside.

6. Bathroom Ventilation: Energy Star exhaust systems that vent to the outside should be installed in all bathrooms.

7. Range Ventilation: Kitchen range hoods should vent to the outside.

8. Whole House Fans: Installation of a whole house fan is encouraged to reduce air conditioner usage.

9. Attic Fans: Installation of an attic fan is encouraged to reduce air conditioner usage.

10. Ceiling Fans: Installation of ceiling fans in all rooms is encouraged to reduce air conditioner usage.

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