



Design Review Guidelines

Town of Ashland



2015

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Intent:

Background

A significant effort has been made by Ashland's residents and Town staff to improve the physical design of the community. This includes a number of studies undertaken that recommend the implementation of a local design review process and the approval of a design review bylaw at Spring 2011 Town Meeting.

The bylaw created the Design Review Committee to implement design review in Ashland. Integral to this process is a set of guidelines that not only reflects the aesthetic characteristics that the Town is trying to maintain but that also establishes a coherent review process that aligns with other local development review processes.

The guidelines in this document provide recommendations for architects, developers, building owners and tenants, as well as guidance for the Design Review Committee when reviewing new applications for local development proposals.

Purpose of Ashland's Design Review Guidelines

Chapter 282 of the Code of the Town of Ashland (Zoning) Sections 9.6.1 – 9.6.8 highlights the purpose of the design review process and the Design Review Committee:

9.6.1 Purpose. The purpose of the Design Review is to coordinate the aesthetic development of designated areas in Town through land, site, architectural, and sign review. This shall occur through an open process that involves the community and as guided by relevant documents, the Design Guidelines, as well as commonly accepted design standards.

9.6.2 Form. Design Review is conducted by a Committee made up of 5 members and up to two alternates appointed by the Planning Board. Where possible, permanent members shall have experience in the fields of architecture, landscape architecture, or engineering and one person owning a business in the town. Members shall be appointed for an initial term of one, two, or three years, at the conclusion of which they may be reappointed by the Planning Board for a term of three years. Terms shall be staggered. The Design Review Committee (DRC) meets twice a month or as needed to hear applications.

9.6.3 Applicability and Authority. The DRC shall review applications for Site Plan Review submitted under Section 9.4 of the Ashland Zoning Bylaw, provided the property exists in the following areas of town:

1. Downtown and Pleasant Street: The geographic center of Ashland, including the Ashland Downtown District zoning districts.
2. Route 135 Corridor: Properties with frontage on Route 135 and in the Highway Commerce, Industrial, Neighborhood Commerce, or Wildwood Mixed Use Zoning districts.
3. Route 126 Corridor: Properties with frontage on Route 126 and in the Highway Commerce, Village Commerce, or Multifamily zoning districts.

4. Properties with projects requiring design review per section 9.4.7 of Chapter **282** (Zoning) of the Town of Ashland Code. Design Review shall evaluate requests for Site Plan Review on the design criteria in this bylaw and any Design Guidelines promulgated by the DRC. The DRC shall submit its written findings to the Planning Board and to the applicant along with any recommendations and suggested conditions. Such findings shall contain any recommendations and explanations and shall be submitted to the Planning Board to be included in its Site Plan Review process.

9.6.4 Fees. Reasonable administrative and technical review fees may be assessed for Design Review as determined by the Planning Board.

9.6.5 Required Design Plan Contents. Each application for design plan review shall include one full-size and seven reduced copies of the following:

1. Design review application;
2. Narrative describing the proposed project; and
3. Plans and drawings showing proposed work as detailed in the Design Review Guidelines.

9.6.6 Application Process

1. The design review application shall be submitted with the site plan submission. The design review process shall commence on the date a complete site plan application is filed with the Department of Community Development and Health.
2. The project shall be reviewed at a public meeting of the DRC. Abutters within 300 feet of the locus property shall be notified by regular mail sent out no later than one week before the meeting.
3. At the completion of its review, the DRC shall submit its written findings to the Planning Board for consideration during Site Plan Review.
4. The Design Review shall be completed and written findings shall be provided to the Planning Board prior to completion of the Site Plan Review but in no event shall Design Review be completed more than 60 days from the application date. The Applicant may choose to extend the time allowed for Design Review so long as the Committee submits its findings to the Planning Board prior to the completion of Site Plan Review. If the Committee fails to submit its findings to the Planning Board within 60 days, the Committee shall be deemed to have waived its authority to submit such findings.

9.6.7 Design Criteria. The DRC shall review applications for Site Plan Review based upon the following criteria:

1. Landscape. The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal and any grade changes shall be in keeping with the general appearance of nearby developed areas.
2. Building Orientation. Buildings shall be related harmoniously to the terrain and to the use, scale and architecture of existing buildings in the surrounding area that have functional or visual relationship to the proposed buildings. Proposed buildings shall be related to their surroundings with respect to:

- i. Height;
- ii. Street facade;
- iii. Spacing of buildings or signs;
- iv. Materials, textures and color;
- v. Roof slopes; and
- vi. Scale.

3. Open Space. All open space, landscaped and usable, shall be designed to add to the visual amenities of the area for persons passing the site or overlooking it from nearby properties.

4. Heritage. Removal or disruption of historic, traditional or significant uses, structures or architectural elements shall be minimized insofar as practicable.

5. Pedestrian Access. The town recognizes that pedestrian and bicycle facilities are needed, as set forth in the Open Space and Recreation Plan which identifies several proposed actions to improve non-vehicular mobility and access.

6. Design Plan Review Guidelines. The Committee shall adopt Guidelines as approved by the Planning Board for the administration of Design Review.

9.6.8 Enforcement. Any recommendations by the DRC that the Planning Board adopt and incorporate into its Decision on Site Plan Review shall have the same legal enforcement authority as site plan approval.

Beyond the abovementioned zoning regulations, the design review process is meant to coordinate aesthetically-pleasing and environmentally-friendly development in designated areas of Town through land, site, architectural, sustainable design and sign review. This shall occur through a community-oriented process, guided by relevant documents, including these design guidelines, and the following criteria:

A: Enhance the social and economic viability of Ashland by preserving property values and promoting the attractiveness of Ashland as a place to live, work, visit and shop.

B: Protect and preserve the historic and cultural heritage of Ashland by promoting the conservation of buildings or groups of buildings that have aesthetic or historic significance, or contribute to the character of Ashland according to a DRC determination.

C: Promote and encourage building alterations that are compatible with the existing environment (i.e., respect the context of the surrounding area) and are of superior construction quality and appearance.

D: Promote flexibility and variety in future development to enhance the natural and aesthetic qualities of Ashland.

E: Promote sustainable design through Leadership in Energy and Environmental Design (LEED) Certified construction, as outlined in the U.S. Green Building Council's

standards, in order to reduce micro-climate impacts of the project site and to reduce impacts on Town resources and infrastructure.

Historic Precedent

Applicants for new development projects located in the downtown Ashland area, Pleasant Street, and along the Route 126 and Route 135 corridors should strongly consider introducing architectural styles and features to new structures that reflect the architectural styles from Ashland's past. Please see Appendix B for further information.

GENERAL GUIDELINES:

General Guidelines

Always consider the scale and proportion of surrounding buildings:

- Attempt to reflect the height of adjacent buildings to prevent visual gaps in the streetscape. If the project is an in-fill project with two varying building heights on either side, consider a building height that is an average height between the two. When designing the façade, attempt to replicate characteristics of adjacent buildings, such as windowsill heights, sign bands and canopies. The new building should complement neighboring buildings, yet be distinct.

Restore distinctive architectural features and remove elements that cover up original details:

- Important architectural features that are of value for preservation include bay windows, transom windows, divided glazing, columns on the façade, the roof cornice, sign bands and any other significant details or building ornamentation.

Strive for architectural coherence:

- Avoid combining too many architectural styles to avoid a sense of confusion in the overall building design.

Setbacks should reflect neighboring buildings:

- New buildings should be situated on the site to conform with adjacent building setbacks for a visually-aligned streetscape. Refer to the Town's Zoning Bylaws for required setbacks.

Historic Features, Details and Signage

Important architectural features include façade ornamentation, cornices, sign bands, decorative panels and divided glazing in storefronts.

Attempt to remove siding that covers original brick, metal, or wood siding and architectural details. Remove shed roofs or false fronts over first floor storefronts; replace with awnings or traditional building sign bands. Restore any original copper

flashings on roofs or cornices. Refer to historical photos and new construction comparisons within these guidelines.

Without directly copying historic structures, attempt to take the best aspects from older architecture and incorporate them into new construction or renovations.

Historic appearance signage should be made of wood or wood-looking composite materials, have recessed carved or projecting letters. Signage should have moldings and trim work at the perimeter edge and have a colonial appearance or appearance from another relevant historic period. In all cases, historic appearance signs should be externally lit with direct flood lighting. Mounting should be considered using either decorative wood, wood-looking composite, metal, or granite posts if free-standing, or black ornamental iron brackets if mounted on a building. Historic signs can also be surface-mounted to buildings with ornamental hangers and fasteners.

Wall Signs:

Wall signs should be affixed parallel to the street wall and should be installed in the sign band area above the store entrance. Wall signs should not obscure architectural details or sit in front of windows on upper floors. Painted, raised letter and box signs are all possible types of wall signs. Architectural simplicity and compatibility are key.

Projecting Signs:

A projecting or blade sign should be attached in a perpendicular manner to the face of the building and is the best type of sign for pedestrians, as it is easily seen from the sidewalk below. Projecting signs should be sized for pedestrian legibility. Flags and banners, even temporary ones, are considered projecting signs and should be approved in the same manner as a projecting sign.

Free Standing Signs:

Monument or freestanding signs should be placed independently of the building and are limited in height and size by Ashland's Zoning Bylaws. Freestanding signs should be used when the buildings are set back from the street.

Multi-Tenant Signs:

Multi-tenant signs reduce the need for excessive individual signage that would otherwise clutter a façade, entrance or the landscape. Multi-tenant signs should clearly indicate the building address and list the tenants in an orderly, legible manner. The sign itself should be compatible with the building architecture and not obscure architectural details or windows.

Sign Lighting:

It is recommended that signs be externally lit by fixtures aimed at them from the building. This allows a limitless choice of color and materials and simple installation and maintenance. Light sources should be shielded to prevent glare into neighboring windows or into the eyes of pedestrians or drivers. Only finished and shielded fixtures

should be used on building facades. The finish should complement the sign and other façade elements.

In-Window Signs:

It is advisable to keep major signs out of windows. A limited amount of lettering on windows in small sizes is appropriate and effective to describe products, list the building address, or list hours of operation. Such lettering should be carefully organized around the entrance of the establishment. A proliferation of signs, temporary or permanent, on the window reduces visibility of the establishment. Displays should likewise still allow for views into the establishment above or between objects. Doors should never be obscured by signs, which could create a hazard for those entering or exiting the establishment.

Signs on Awnings:

Signs, letters and logos on awnings should be secondary or primary. Excessive numbers of signs on the sloped portion of the awning should be avoided. Secondary messages, such as products supplied, can be located along the valence (vertical) portion of the awning. A simple logo or pattern on the sloped area is a simple treatment that should not compete with the primary sign.

(Refer to the Town's Zoning Bylaws for applicable sign regulations.)

A diversity of well-designed signs is desirable within any retail area. Signs are prominent features and should all complement the architecture. Limits on the size and type of signs are important to ensure that each establishment can properly identify itself.

Signs are often a vital tool for communicating the nature of a business. Interesting and unique shapes, forms and logos are effective ways to communicate the nature of merchandise or services being offered. A restrained combination of select words and images is more effective than cluttering the street with extraneous information.

Effective signs can be created with the use of light colored lettering against a dark or neutral background. White, gold or other bright colors call attention to the words while the background blends with the surrounding architecture.

Signs geared toward excessive advertising are discouraged.

Building Location

Site Entry and Circulation:

The entry to the site is critical to the public image of the development. Emphasize the main entrance and locate central and shared facilities there if possible. Respect the street and locate buildings on the site in a manner that reinforces street frontages.

Setbacks:

To the extent possible, maintain the existing setback patterns within the immediate

vicinity of the building. Attempt to abide by the average setback lines of the adjacent properties. Also attempt to mimic the side and rear yard setback lines prevalent in the area.

Climate Considerations:

The building should be designed so that sunlight directly enters each unit during some part of the day year-round. Consider placing buildings on the site in a manner that maximizes solar access during cooler months and natural ventilation during warmer months. Also consider maximizing access to desirable views. Attempt to avoid a layout in which adjacent buildings obstruct one another.

Building Shape

Building Height:

Consider relating the overall height of the new structure to that of adjacent structures and those of the immediate neighborhood. Consider avoiding new construction that varies greatly in height from other buildings in the area. Consider relating individual floor-to-floor heights to those of neighboring buildings and, in particular, consider how the first floor level relates to the street and whether this is consistent with the first floors in neighboring buildings.

Building Scale and Massing:

Consider relating the size and bulk of the new structure to the prevalent scale in other buildings in the immediate neighborhood.

Building Form:

Consider utilizing a variety of building forms and roof shapes rather than just box-like forms with large, unvaried roofs. Consider how the building design can be efficiently manipulated to create clusters of units and variations in height, setback and roof shape.

Image:

Consider building images that fit with the image of adjacent buildings in the immediate neighborhood.

Visual Complexity:

Consider introducing visual and architectural complexity to the building's appearance. Consider breaking a large building into smaller units or clusters. Consider variations in height, color, setback, materials, texture, trim and roof shape. Consider variations in the shape and placement of windows, balconies and other façade elements. Consider using landscape elements to add variety and differentiate units from each other.

Façade:

Consider relating the design of the new building façade to the design of similar, attractive façades in the community or region. Horizontal buildings can be designed to relate to vertical, adjacent structures by breaking the façade into smaller components that individually appear more vertical. Consider avoiding strongly horizontal or vertical

façade expressions unless compatible with the character of the majority of the structures in the immediate area.

Roof Shape:

Consider relating the roof forms of the new building to those found in similar, attractive buildings in the neighborhood or region. Consider avoiding the introduction of roof shapes, pitches or materials not found in the neighborhood or region.

Facades, Doorways and Windows

Facades should be lined with neighboring windowsill and signage block lines. Facades should be broken up with column lines and bays. This helps to distinguish tenants and storefronts. Similar attention should be provided to side facades and facades that are located on corner properties.

A distinction should be maintained between upper and lower floors for multistory buildings. As in many traditional town centers, it is recommended that the windows on the second floor be smaller than the windows on the first.

Any side of a building that is visible from a street or sidewalk should have windows, as a blank wall creates an unfriendly void for pedestrians. Maximizing the amount of windows along publicly viewed walls also allows for additional opportunities to market businesses.

Generally, the height of a window should exceed its width. Such window proportioning mimics human proportions and makes the street feel more pedestrian friendly. Windows on all floors should align and be consistent in proportion, shape, and style. Recessed doorways are preferred. A recessed doorway helps to break up the building façade, provides a welcoming space and provides protection from the elements. Where a recessed doorway is not possible, an awning should be considered.

Doorways to upper floors should be visually separated from street-level shop entries. A doorway to upper floors should not break up the cohesiveness of the façade. A well-designed storefront minimizes confusion over which doorway belongs to which business. Address numbers should be prominently displayed.

Awnings and Canopies

Awnings are used in retail frontage to shade interiors, support signage, contribute to the walkability of the street corridor and to extend the retail frontage space to the walking area.

Awnings should be straight-angled and typically should not have closed ends, though these can be appropriate in certain instances. Many materials are appropriate for awnings. Traditional canvas is best, but glass and metal may be appropriate as part of modern storefronts, particularly on modern buildings. Vinyl or plastic materials that are

shiny or translucent are discouraged, as are odd shaped awnings that do not relate to the building's architecture. Awning fabric may be synthetic, but should resemble fabric rather than a shiny plastic or hard skin. Awnings may be operable or fixed. Operable awnings should be closed during high winds or snow to avoid damage. A hard bottom under the awning is discouraged. A single color scheme should be used for all awnings on a building.

An awning can include downlights set behind or inside the awning to light the building façade below, but should not be internally illuminated like a sign. Downlighting of awnings should be avoided when it provides a distraction from window display areas in close proximity.

Awnings may have a hanging trim edge with the lower edge at a minimum of 80", though 90" is encouraged to avoid vandalism. An ideal awning is 5' wide, but should hold short of the curb lines by 1' in all cases. Very short awnings with less than a 30" overhang should be discouraged.

Awnings can be vital architectural elements and should complement the architecture of the façade. Awnings should not obscure important architectural details by crossing over pilasters or covering second story windows. Folding or retractable awnings are characteristic of historic storefronts and should be preserved and restored if possible. Retractable awnings are advantageous as they can be protected from weather and vandalism. Awnings are most useful on south facing facades where they can provide sun protection for windows and merchandise.

Multiple awnings on a single building should be consistent in size, profile, and location. On multi-tenant buildings, awnings can vary in color and details, but should be located at the same height and have similar profiles to preserve the architectural lines of the building.

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Building Materials

The use of wood, brick, cast concrete and slate is encouraged where appropriate.

Handicap Access

In 1990, the U.S. Congress enacted the Americans With Disabilities Act (ADA), which mandates that buildings open to the public be accessible to persons with disabilities. In addition to the ADA, the Commonwealth of Massachusetts has adopted its own accessibility code, 521 CMR Architectural Access Board. The intent of this code is to provide persons with disabilities full, free and safe use of all buildings and facilities so that all such persons may have the educational, living and recreational opportunities necessary to be as self-sufficient as possible to assume full responsibilities as citizens.

As most retail and offices are considered public facilities, most storefronts are effected by the requirements of the ADA and Architectural Access Board when permits are requested for substantial work or a change in use. Local building officials are charged with enforcing compliance.

Renovation of Existing Structures

Unless the structure to be renovated has no architectural benefit or significance to the Town's historic, small-scale, residential feel, all renovations should maintain the scale and proportion of the original building elements, including roof shape and height, structural framework, cornices, sign bands, window size and symmetry, storefront glazing divisions, and decorative elements.

Renovations should not be limited to the structure alone: they should also include the site. Renovations to the site should consider attractive on-site parking and curb cuts, ornamental fencing, ornamental site lighting, outdoor furniture and bike racks, improved landscaping, and decorative signage.

Revitalization Approaches:

Merchants and building owners have many choices when considering options to improve their buildings and shops. From cleaning to historically accurate restorations, the options depend upon a variety of factors.

Repair and Maintenance:

Repair and maintenance are two procedures that have an immediate effect on the visual quality of the street and should be part of a proprietor's yearly routine. By regularly servicing and maintaining a façade storefront or sign, storeowners can avoid major expenses later. Examples of simple, inexpensive tasks that make a significant positive impact include repainting and refinishing woodwork as well as signs and trim, cleaning signs, replacing bulbs, patching concrete and brickwork, and cleaning the façade and windows.

Masonry surfaces should not be cleaned using abrasive methods such as sand blasting or chemical cleansers that can damage the surface of the brick. Mild water spraying using low pressure, soft non-metallic brushes, and mild detergent is the safest method to

remove dirt and grime. In extreme cases, chemical cleaners can be used but should be applied by professionals and tested before use on the façade.

Removal of Inappropriate Materials:

In many cases, building storefronts can be improved immediately and easily by the simple removal of inappropriate materials. Removing deteriorated modern signs, fascias and paneling from past renovations will frequently reveal original materials and building elements hidden beneath. Historic elements should not be removed but rather restored wherever possible. Simple cleaning and repair of damaged details can often restore the building to its original appearance.

Restoration:

When substantial portions of a storefront have been lost, restoration may be desirable to return the building, or portions of the building, to a form consistent with its neighborhood context. Proper restoration involves research into the historic appearance of a building. Restoration may not be appropriate for all buildings but should be considered for those which are architecturally significant and by owners who are prepared to undertake the work using good historical documentation.

Rehabilitation:

Replacement of a storefront that is out of context with a building and its neighborhood can be effectively done by simply rebuilding with a compatible new storefront. The elements of the original storefront can often be reproduced with modern materials in proportions that are compatible with the building architecture and the researched historic information.

Details such as mullion and muntin widths should be considered when new storefronts are installed in buildings with historic windows. A simple modern storefront could be more appropriate and compatible than a poor reproduction of period architecture.

New Construction

Ashland includes a wide variety of architectural styles often found in close proximity to one another. New construction within historic contexts (or alterations on historic buildings) requires a careful balance of respecting the integrity of older structures with the incorporation of sound modern design techniques.

New buildings need not, nor should they, imitate the styles or details of the past. It is inevitably more interesting to match materials, proportions and scale while using modern, simple materials. Newer buildings, for instance, use more glass than historic structures, yet the use of similar compatible materials and matching cornice lines and setbacks can ensure that new structures contribute to the character of the district.

Design characteristics commonly found in existing town structures should be considered, including divided glazing at windows and storefronts, wood or wood-like siding, sloped

roofs, architectural roof shingles, architectural detailing and trim on facades, and well-manicured landscapes.

Additions

Additions to existing buildings should respect the existing relationship of buildings to the street, including setbacks and open spaces between buildings. Additions that fill in side yards between buildings should be avoided in areas where separations between buildings define the rhythm of the street.

Additions should use materials, sizes, and proportions that are compatible with existing structures. If possible, the original building's primary street façade should remain clearly delineated and the addition should be set behind or to the side.

Buildings of Residential Character

Always consider the scale and proportion of surrounding buildings. Attempt to reflect the height of adjacent buildings; otherwise, a gap in the streetscape is created. If the heights of buildings on each side of the site are different, an average height between the sides should be considered.

Renovation to existing residential buildings for commercial use should maintain residential characteristics as much as possible. These buildings often provide a transition from more commercial/urban areas to residential areas.

Other recommendations include: maintenance of the original doors and window placement and sizes; installation of a freestanding sign in place of a sign band in the front setback if space permits; and if little or no setback from the sidewalk exists, window boxes should be used.

Retail Buildings

Great care should be taken to optimize storefront design; significant scope should be permitted for imagination and flair.

A large display window on the first floor should be provided to encourage pedestrian interest. Glazing frames should be divided or include a divided clerestory frame. Sill heights should be as low as possible to promote a pedestrian-friendly, open and inviting feel.

Storefront windows should not contain an excessive number of advertising signs. Excessive numbers of such signs create visual clutter, an unfriendly atmosphere, and an overall poor storefront appearance; the appearance of adjacent businesses can also be negatively impacted. Providing a view into the storefront from the street or sidewalk encourages pedestrian interest and a friendlier feel. Dark or tinted windows should be avoided, but awnings should be used if solar glare and sunlight need to be controlled.

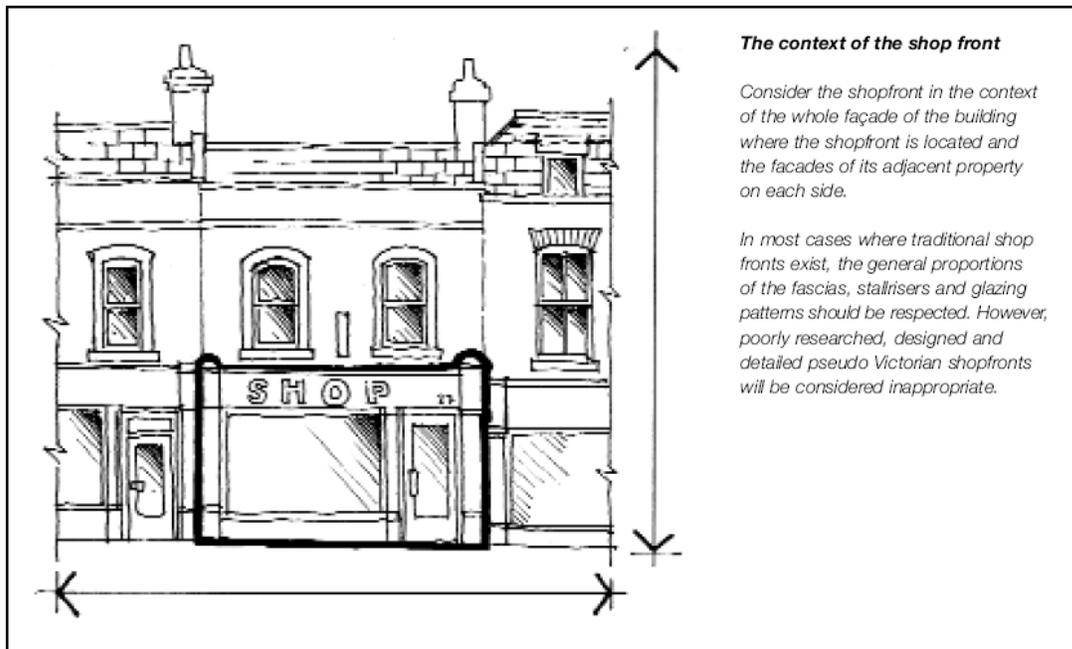
Privacy needs should be met without diminishing a welcoming feel for pedestrians. Covered windows create an unfriendly atmosphere. If privacy is needed, consider curtains, blinds, or interior wood shutters. Also, consider covering only the lower half of the window. The window treatment should be as attractive on the outside as it is on the inside.

Use street level details to attract pedestrian traffic and customers. An attractively arranged display window, for example, will draw customers into a business and contribute to a more pleasing atmosphere.

When renovating a storefront, extend the improvements along a portion of the side face or along the full side if the building is located in or on a corner.

General Principles for Retail Buildings:

When contemplating a new or replacement storefront, an appropriate starting point is a study of the building facade and adjacent elevations, including any existing storefronts, as well as a study of the street design, which forms their context. The information and understanding obtained can be essential to the application of the following general principles:



The Street:

The hierarchy and character of the traditional street scene should be maintained and enhanced. However, an aggressive promotional approach by an individual shopkeeper (e.g., excessive use of lighting, overlarge signs or garish colors) can significantly upset and detract from the overall street scene. Where such an approach is adopted by a number of businesses on one street competing with each other, it can downgrade the character of an entire area and remove any sense of hierarchy.

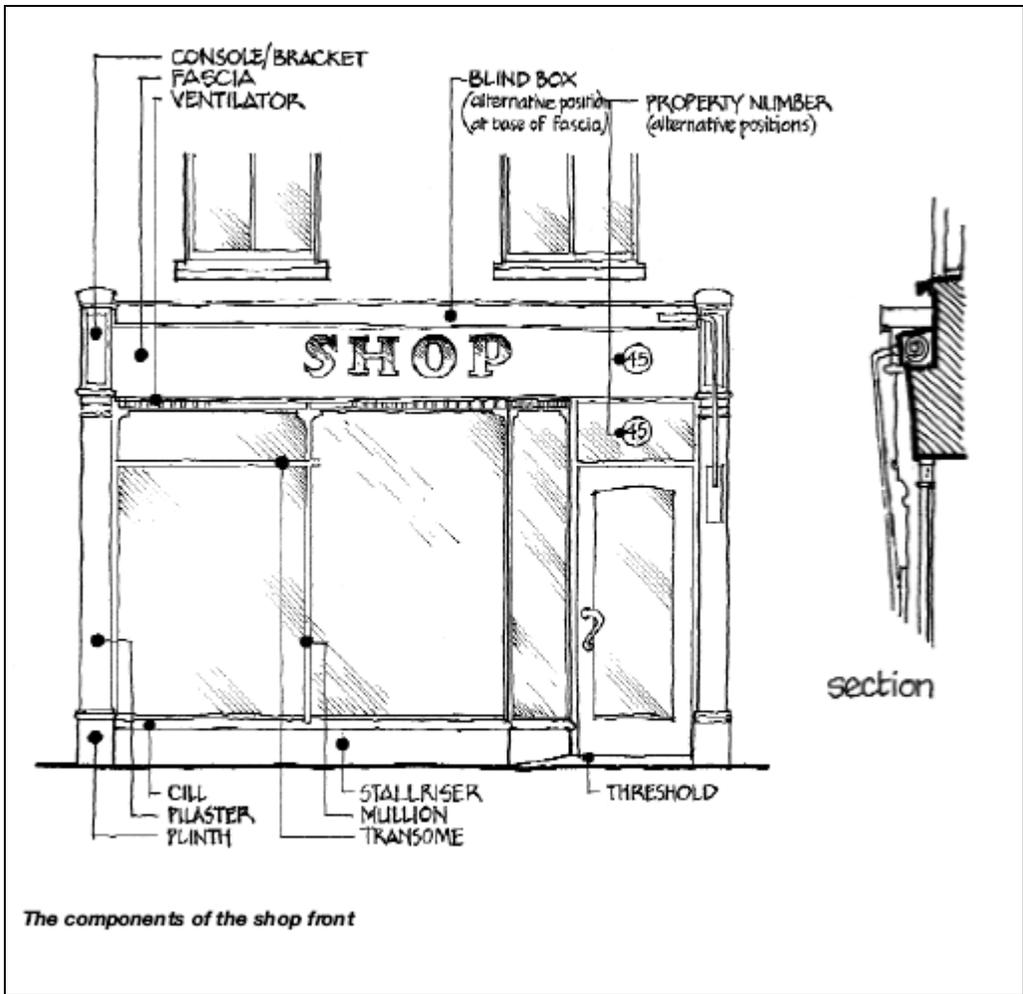
Both street width and building height determine the appropriate scale and impact of a proposed storefront. The more uniform the street, the more the storefront can and should conform to the symmetry of the facades.



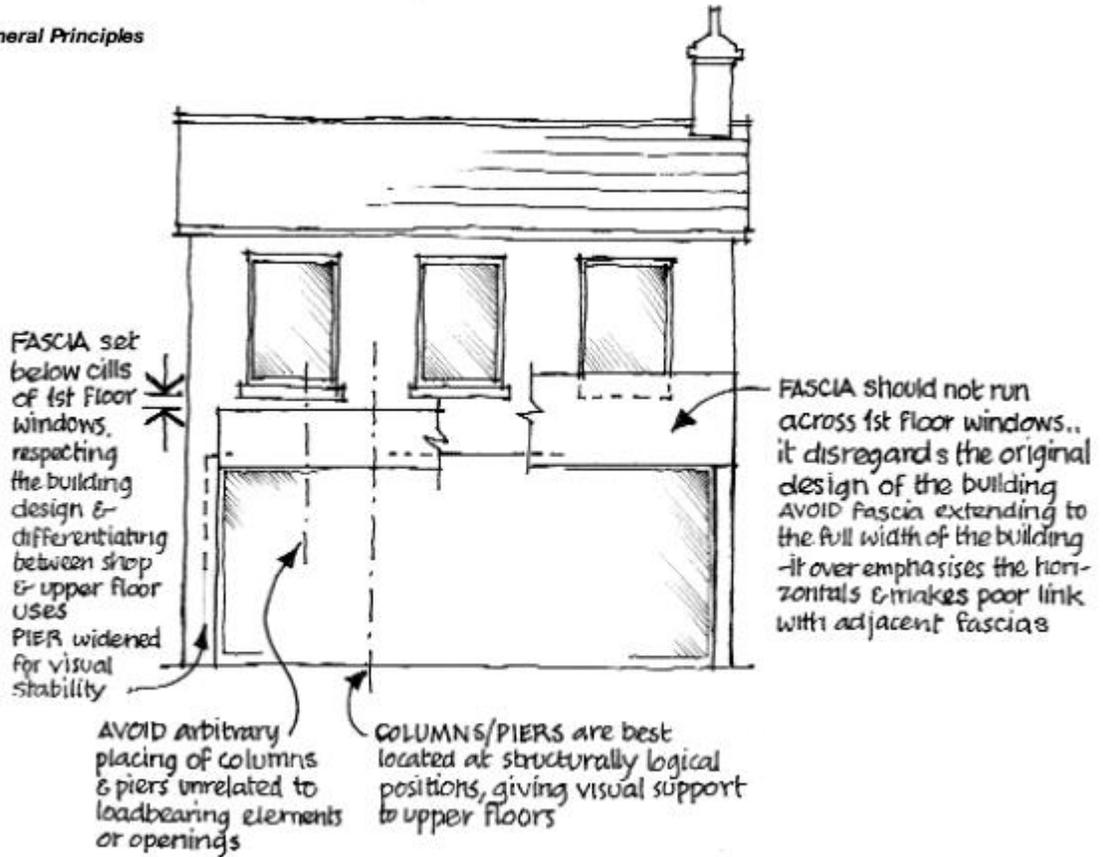
Storefront Components:

Storefronts are composed of a number of functional elements. These approximate to the constituent parts of a classical building; namely plinth, column and entablature.

Opportunities for the different treatment of these and the choice of materials available offer scope for the great variety in style of storefront, whether modern or traditional.



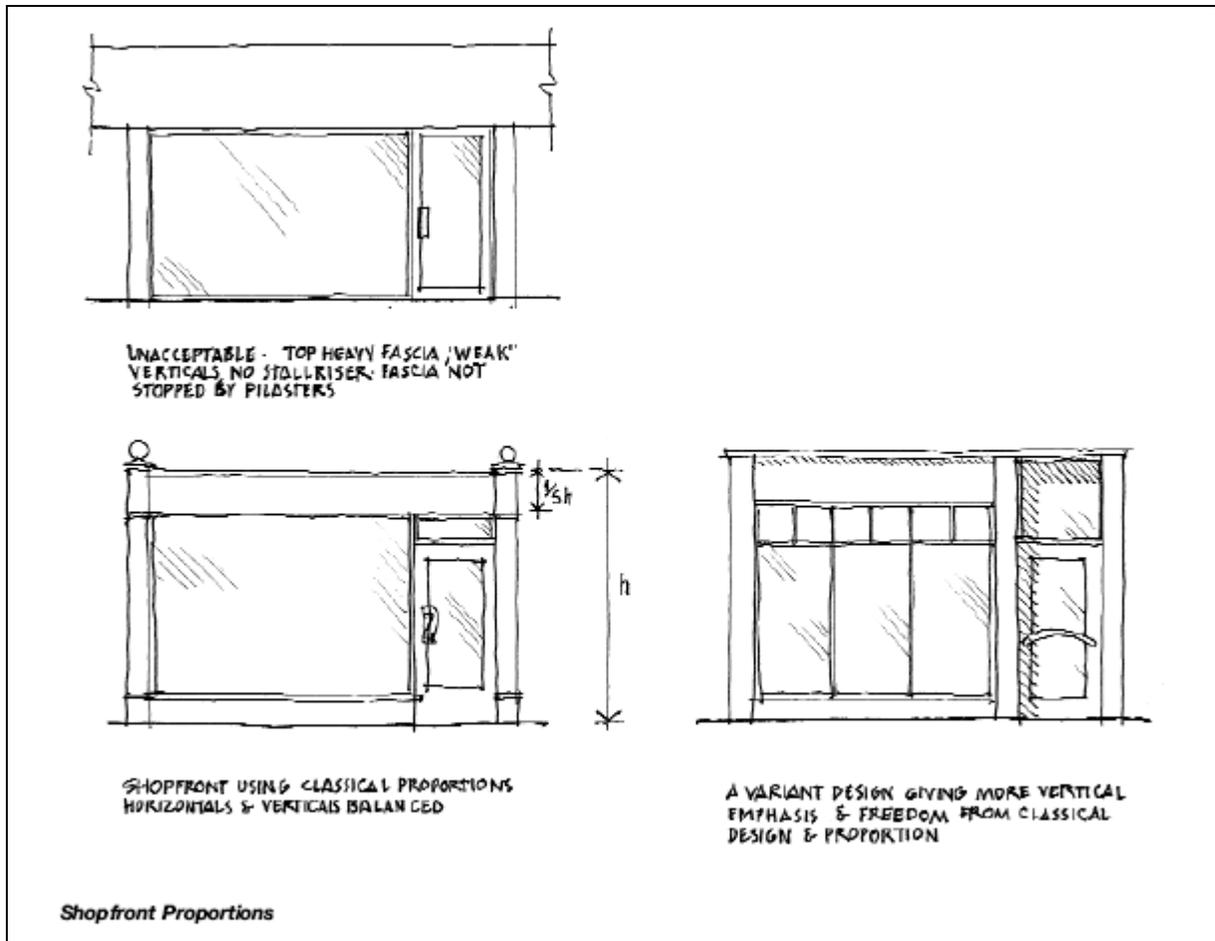
General Principles



CONTINUOUS SHOPFRONT IGNORES THE INDIVIDUALITY & DESIGN OF THE BUILDINGS IN WHICH IT IS LOCATED

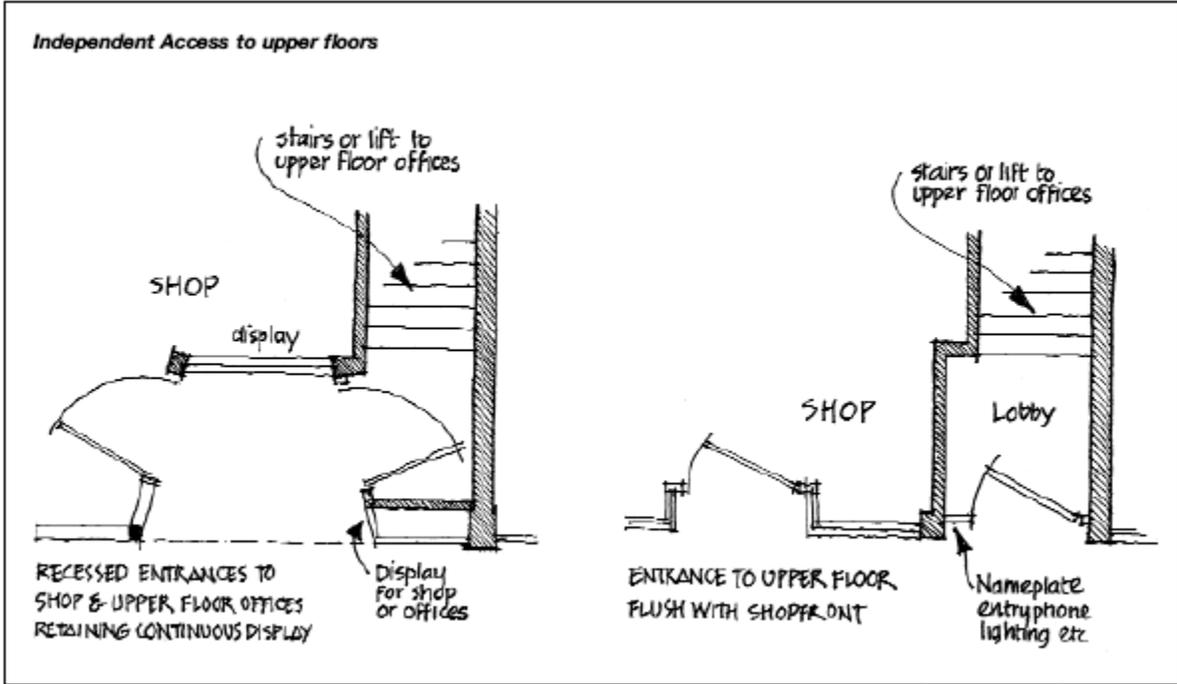


SHOPFRONT DESIGN SHOULD AIM TO INTEGRATE WITH THE PROPORTIONS & DESIGN OF THE BUILDING IN WHICH IT IS LOCATED



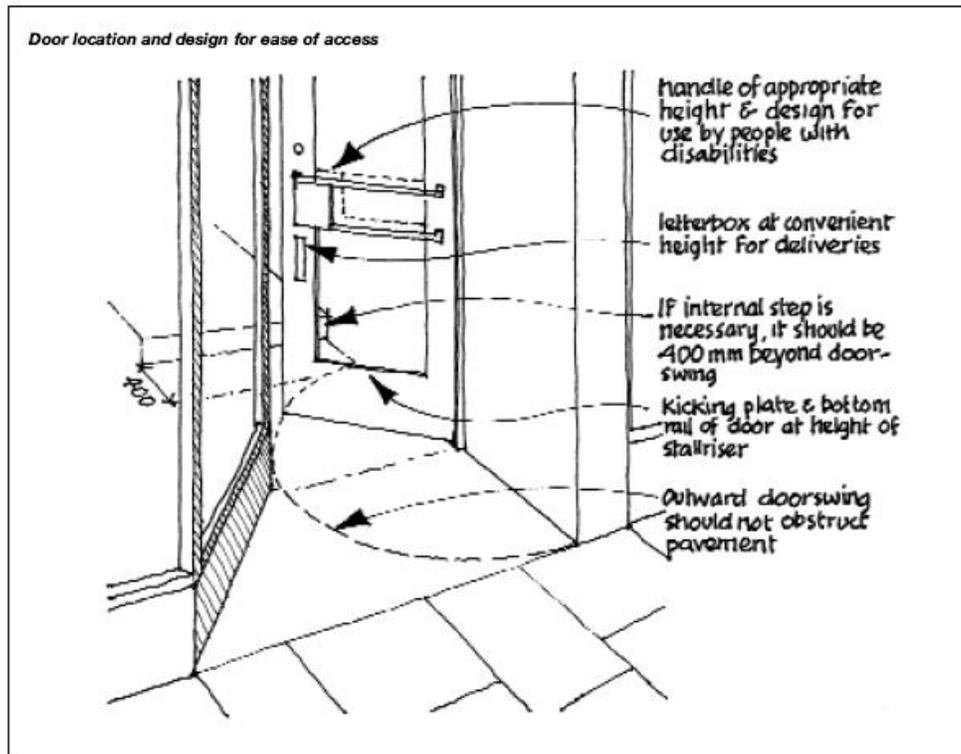
Independent Access to Upper Floors:

The use of upper floors of commercial properties is highly encouraged. An important factor often contributing to the redundancy of upper floors is a lack of independent access. To prevent a further increase in the number of isolated upper floors, entrances to upper floors should be incorporated into new or replacement storefronts, even if this results in a reduction in the final overall display area. Where the storefront installation is part of a wider refurbishment or redevelopment of the building, the introduction of a new front access to the upper floors is recommended.

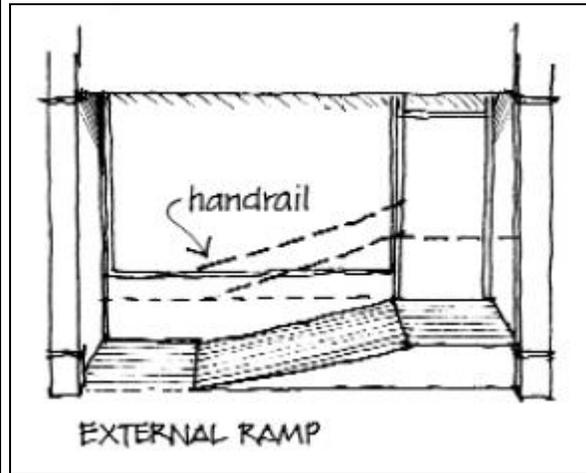
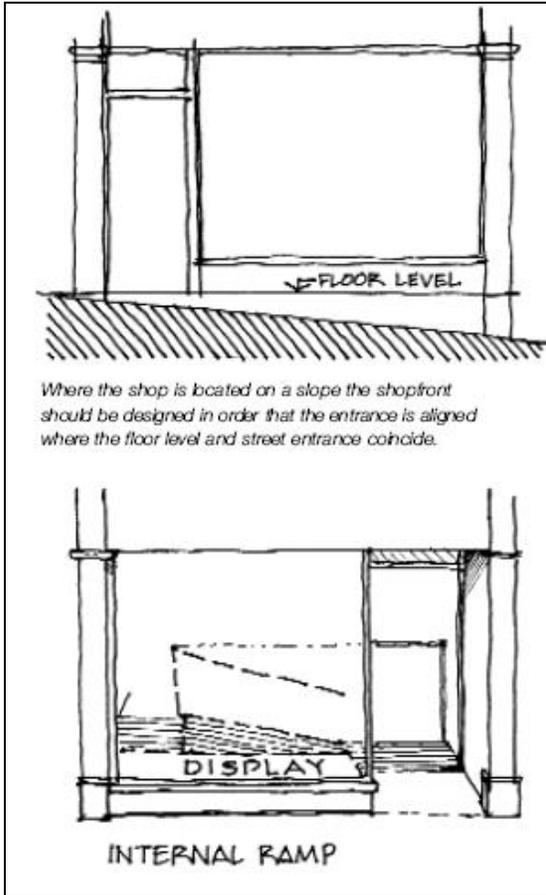


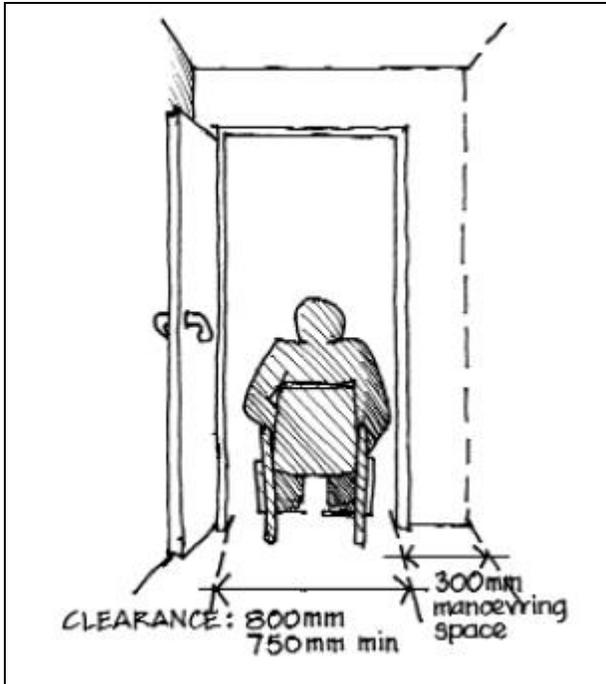
Approaches and Entrances:

The design and positioning of doors should be integral with the design and layout of the whole storefront. Refer also to state required guidelines on access for the disabled.



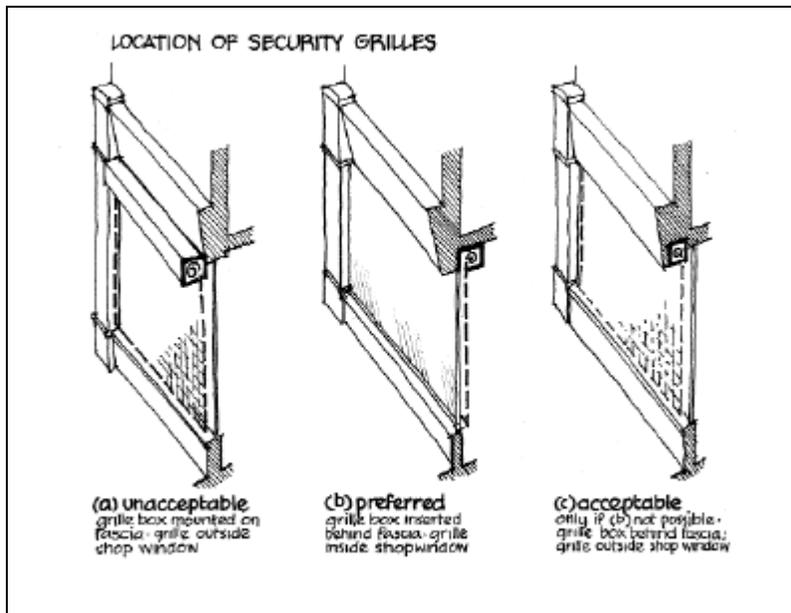
Due to safety concerns, it is recommended that no movable items be placed in front of doorways. Furthermore, where possible, there should be level pedestrian access to storefronts. Generally, promoting ease of access to accommodate a range of disabilities (e.g., lack of sight, hearing, dexterity), beyond the scope of ADA regulations, is desirable.





Storefront Security:

When examining applications for new storefronts, any proposed security arrangements should be carefully considered. Conflicts between the security needs of storekeepers and the detrimental impact of poorly designed shutters on the townscape should be considered. Internal lighting should be considered for nighttime hours to add to the feeling of security in a shopping area and to reduce crime.



Alarms:

Burglar and fire alarms, while often essential, are unattractive devices and should be sited as unobtrusively as possible. Attempt to avoid the arbitrary positioning of alarms, which can often be a poor design choice. Alarms are best incorporated on centerlines between upper windows, or on soffits of recessed doorways. It is strongly recommended that they not be located on architectural features such as brackets or pilasters.

Reinforced Storefront:

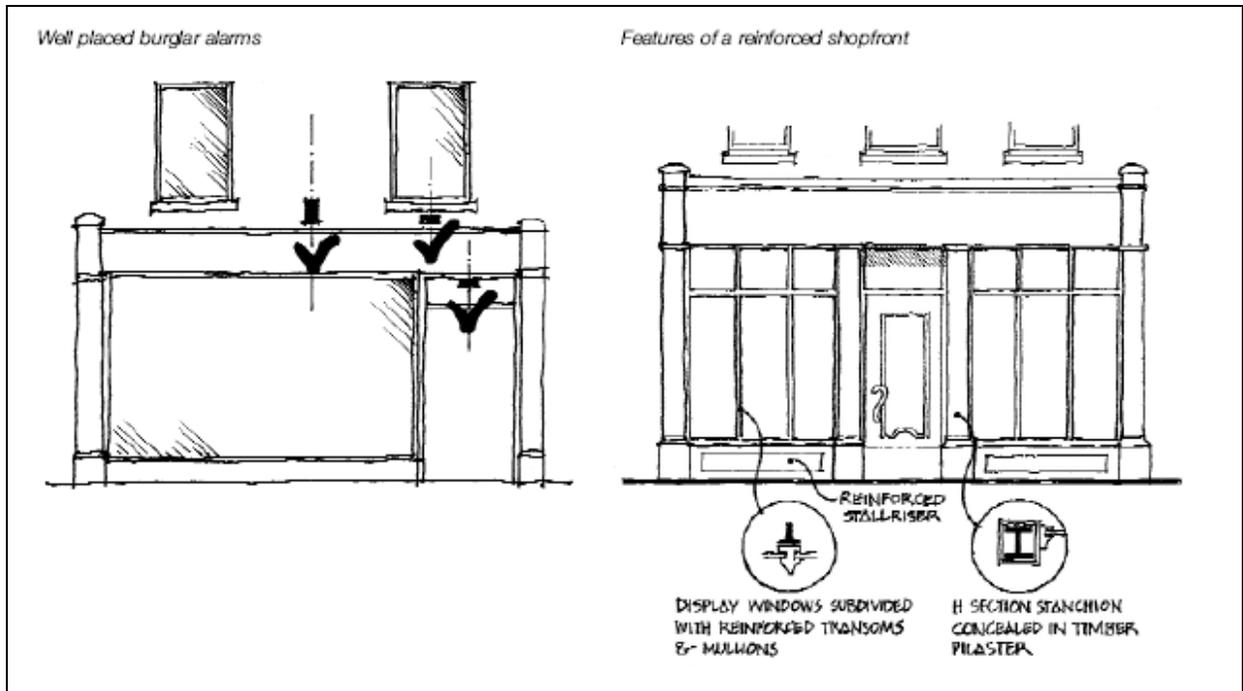
Regarding traditional storefront design elements, it is relatively easy to introduce concealed strengthening. Stall risers can be set in front of a concrete block and steel strengthening can be introduced behind transoms and mullions, and within pilasters. In addition to providing protection, this approach can reduce the amount of glass replaced in the event of an attack. However, the way in which these reinforcing elements tie into the main building structure needs careful consideration in order to avoid structural damage in the event of a strong impact – this is a particular issue for historic buildings.

Bollards:

As a measure against ram-raiding, bollards may be effective. However, bollards can also contribute to street clutter. Bollards are only recommended as a last resort and specifically when they do not detract from the quality of the street scene and their design fits the surrounding context.

Automatic Teller Machines (ATM):

The location of ATMs requires careful consideration. Positioning should not impact the integrity of a buildings design. Where possible, ATMs should be positioned in locations subject to a high degree of passive surveillance, but should not impede the movement of pedestrians. Arrangements should be made for the proper disposal of paper slips.



Recreation Facilities

Recreation facilities are important gathering places that contribute significantly to the physical and social health of the communities they serve. Such facilities should be designed in a sustainable manner. Nevertheless, recreation facilities are typically resource intensive, both in operation and utility usage, and typically have a large environmental footprint.

Opportunities for Synergies Between Complementary Uses:

The most successful recreation facilities combine multiple programs into a single, consolidated complex. Not only does this hybrid facility provide a more programmatically rich experience, but from an operations perspective, its ability to leverage functional relationships consistently leads to improved life-cycle performance. Exploring opportunities for programmatic adjacencies facilitates resource sharing and minimizes operational redundancy. Synergies in a hybrid facility can also yield significant cost savings.

Heating for Swimming Pools:

Many swimming pools consume more than 1 million liters of water per year. Swimming pool water is often heated and maintained at temperatures ranging between 78°F and 95°F. This intensive heated water use, combined with the heavy use of showers, makes aquatic centers large consumers of heated water. Refrigeration systems can help heat swimming pools in a sustainable manner.

Such systems typically produce more energy than can be consumed by a stand-alone arena building. When a refrigeration system is integrated into the overall mechanical strategy for a larger building complex, the waste energy from the refrigeration system can be harvested to assist in pool- and shower-water heating.

Building/Aquatic Envelope Performance:

Pools and arenas create larger temperature and vapor pressure differentials than conventional buildings and special attention must be paid to the performance of the building envelope. Careful design of the building and aquatic envelope is one of the most important technical considerations for any pool project.

Capitalizing on Physical Context: While specification of efficient mechanical and electrical systems can result in reductions in overall energy consumption within a building, the specific physical context of a project may also offer opportunities for capturing natural energy or reusing waste energy from other sources. For example, in the summer, operable garage doors or windows open up to provide natural ventilation, and avoid the capital and operation cost of air conditioning.

Best Practices:

Ultimately, a sound model of green design for recreation facilities is based on a balance of best practices, including low- and high-tech strategies, scalable solutions, and non-cost associated approaches.

While a recreation building is a challenging typology, there are many design opportunities to address any environmental shortcoming, which will only help to enhance the facility's civic value.

Picnicking Facilities:

Picnic sites should include a picnic table and a pedestal grill on a hard surface area. Picnic use areas should be a minimum of 600 square feet. The use area should be sloped 1.5 percent to drain. The toilet facility should be located convenient to picnic sites and , if possible, within 300 feet of a parking area.

Picnic tables should be of heavy-duty construction and made of concrete or metal. The tables should be 8 feet in length.

Pedestal grills should be located at the edge of the use area and downwind from the table. Grills should be installed to avoid any fire hazard. It is recommended that the cooking surface of the pedestal grill be large enough that a camp stove could be set upon it in a stable manner. The grill's cooking surface should be installed at a maximum height of 34" above the use area surface.

Foot Trails:

Foot trails should function primarily as paths connecting recreation facilities. Trails should be designed to connect one facility element to another with the least amount of environmental impact. As such, trails should be sited to minimize soil erosion, damage to vegetation and wildlife, degradation of streams, cost of maintenance and circulation conflicts between pedestrians and vehicles, while maximizing user safety and the aesthetic experience.

General Layout Criteria: Trails should be designed to avoid the following areas: critical/sensitive habitat, designated wetlands and other frequently moist areas, and areas especially prone to erosion.

It is recommended that a trail only cross a wetland if the trail is raised on a walkway above the ground. Trails should be aligned to avoid crossing roads, except very low volume roads that service local circulation. If crossing a road is necessary, adequate and clearly visible signs should be posted on the road to give drivers approaching from either direction adequate warning of the crossing. Where possible, trails should be aligned to avoid crossing streams. However, if crossing streams is necessary, the trail should be contained on a footbridge or other raised crossing facility. Where a stream is crossed, the trail should be hard-surfaced for 10 feet past the point of high soil moisture. If trails are located in wetlands or sensitive areas for the purpose of interpreting those landscapes, the trail should be raised and handrails should be incorporated on sections that are more than 30" above the ground.

To minimize soil erosion, trails should be located in areas that favor:

- Coarse or gravelly soil rather than clay and silty soil
- Vegetation composed of grasses rather than forbs or shrubs
- The toe of a slope rather than a side slope
- Flat slopes rather than steep slopes
- Low soil moisture rather than high soil moisture
- South and west exposures rather than north and east exposures

Surveying tools should be used to determine final alignment and grades; grades should not be determined solely on visual judgment.

Foot trails should include any short spurs that are necessary to access nearby destination points in order to provide logical site circulation. Trails should be clearly marked and signed at access points and distances to destinations should be posted.

Design Criteria: Trail grades should be no more than 10 percent and, preferably, less than 7 percent. On slopes over 25 percent, steps should be used, but only for short distances. Trails should be cross-sloped to drain at not less than 2 percent or not greater than 4 percent. Switchbacks should be as level as practicable.

Trails should be sized and surfaced to accommodate their expected level of use and to minimize soil erosion and vegetation trampling. Connecting trails that link nonlocal destination points that are a considerable distance apart should be 18" to 24" wide. These

trails should be soil surfaced. In localized areas where the soil cannot support foot traffic, the trail should be surfaced with compacted decomposed granite or aggregate base course. If foot traffic on these trails is very heavy, the entire length of the trail should be surfaced with compacted aggregate base course. In heavy use areas, trails should be paved with an accessible surface or concrete. Local trails within a campground or waterfront area should be a minimum of 60” wide and surfaced with decomposed granite or an aggregate base course. Boardwalks over wet areas and footbridges should be a minimum of 60” wide and include handrails on both sides. Railings are strongly recommended for bridges higher than 30”. Footbridges on accessible trails should include edge protection for the security of wheelchairs at all turnouts.

Utility, Municipal and Industrial Structures

The following are recommendations to improve the overall appearance and site conditions of utility, municipal and industrial structures, as well as site equipment and storage containers:

Provide Visual Screening From Street Views:

- Screen HVAC equipment, transformers, generators, storage containers and other equipment or machinery. Air conditioners should not project beyond the edge of the building face. Rooftop equipment should be concealed by decorative screening and coloring to match the building structure and surrounding architecture. Storage containers and commercial/industrial equipment should be screened from the street through decorative fencing or landscaping.

Minimize Visibility of Utility Connections:

- Place utility connections and meters toward the rear of the building. Provide landscaping, fencing or other decorative enclosures to minimize the visibility of utility connections.

Acceptable Screening Devices:

The following description of screening materials is not intended to be all-inclusive. There may be instances when customers propose to utilize screening devices not included below. Alternative screening devices and methods may be acceptable provided that they effectively reduce the visual impact of the utility equipment and maintain required clearances.

Landscape:

Shrubs and plants are popular screening devices that provide aesthetically pleasing results by screening utility equipment from view. Placement of shrubs and plants should be outside easement/clearance areas. In order to maintain required clearances around utility equipment, customers should consider the size and spread that shrubs will reach at maturity. In addition, the customer should select shrubs that are not invasive and whose root systems, vines or branches will not grow under or into structures or equipment.

Fencing:

Fencing can be used as an alternative screening device to screen utility equipment from public view. Typically, fencing used to screen utility equipment is custom made for each

application. All fencing should be opaque. Recommended fence types include block, wood and vinyl. All fence installations should follow the utility provider's equipment clearance requirements. Since utility equipment also requires access from above by crane or other means, the easement/clearance area should remain open on top; screening on top, therefore, is not recommended.

Block walls may be utilized for screening and should be installed outside the easement/clearance area with an unrestricted, clear 10' working clearance in front of the utility equipment. The front side of the equipment can be enclosed with a gate, provided that it opens outward and provides a clear 10' working clearance upon opening.

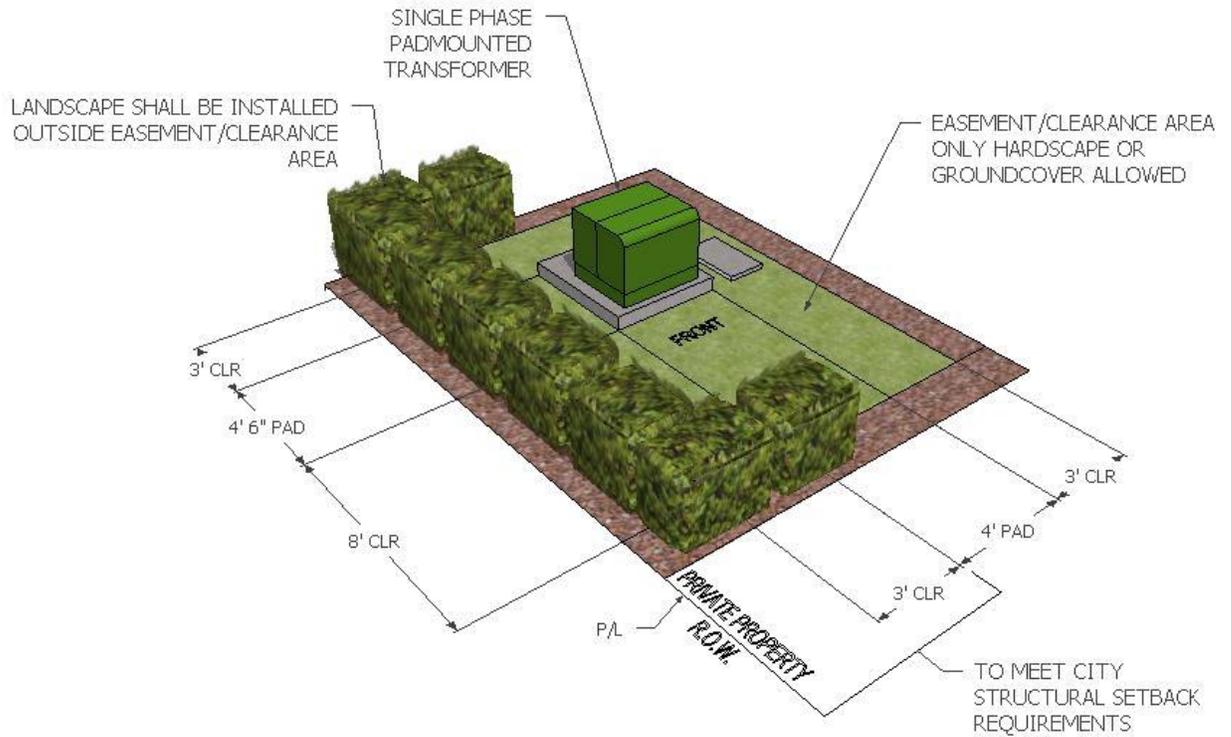
Wood and vinyl fencing can also be used to screen utility equipment. All fencing should be installed outside the easement/clearance area, with the exception of removable fencing, which is appropriate in such areas. Removable fencing should be constructed in panel sections so that it can be easily removed by even one individual for access and working clearance.

Other architectural features and devices may also be acceptable provided that they screen utility equipment from view and maintain working clearances. Alternative architectural screening features can be submitted to the Design Review Committee for review.

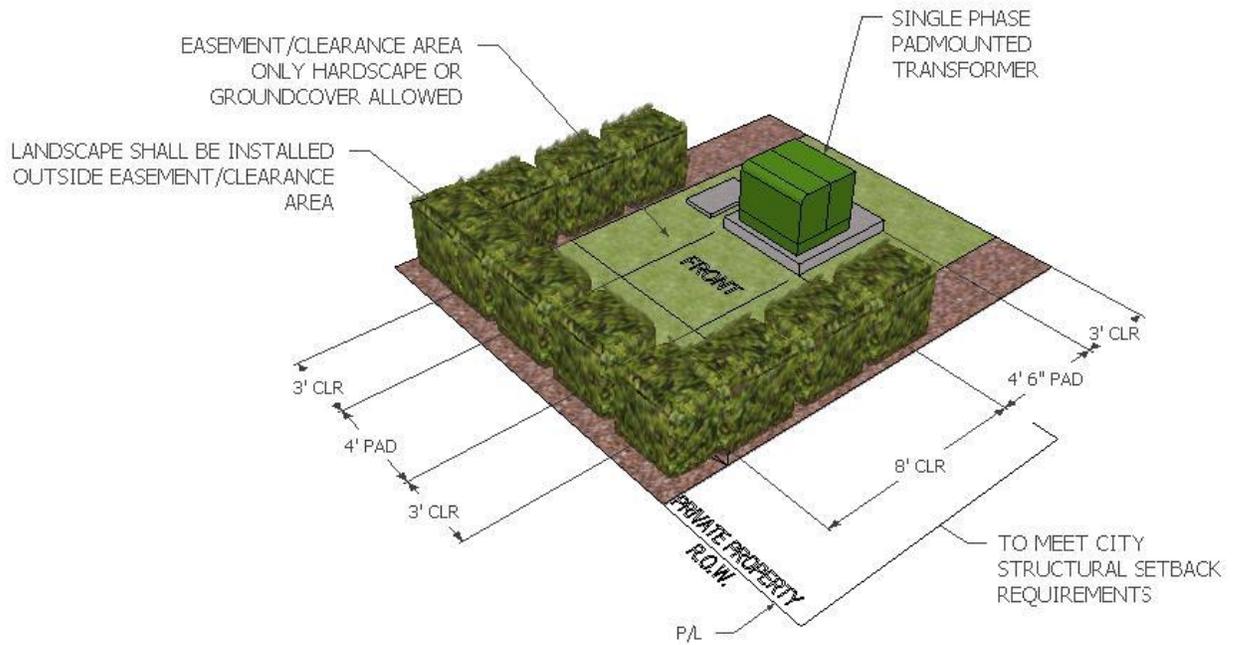
However, screening should not interfere with or adversely affect the operation of the equipment or its access by utility workers. If materials obstruct the cooling of equipment or restrict the maneuvering of access doors or pull boxes, the utility may limit application of screening materials. Protective posts should be used in certain instances to prevent damage from vehicles to utility equipment.

Typical Screening Methods and Clearance Requirements:

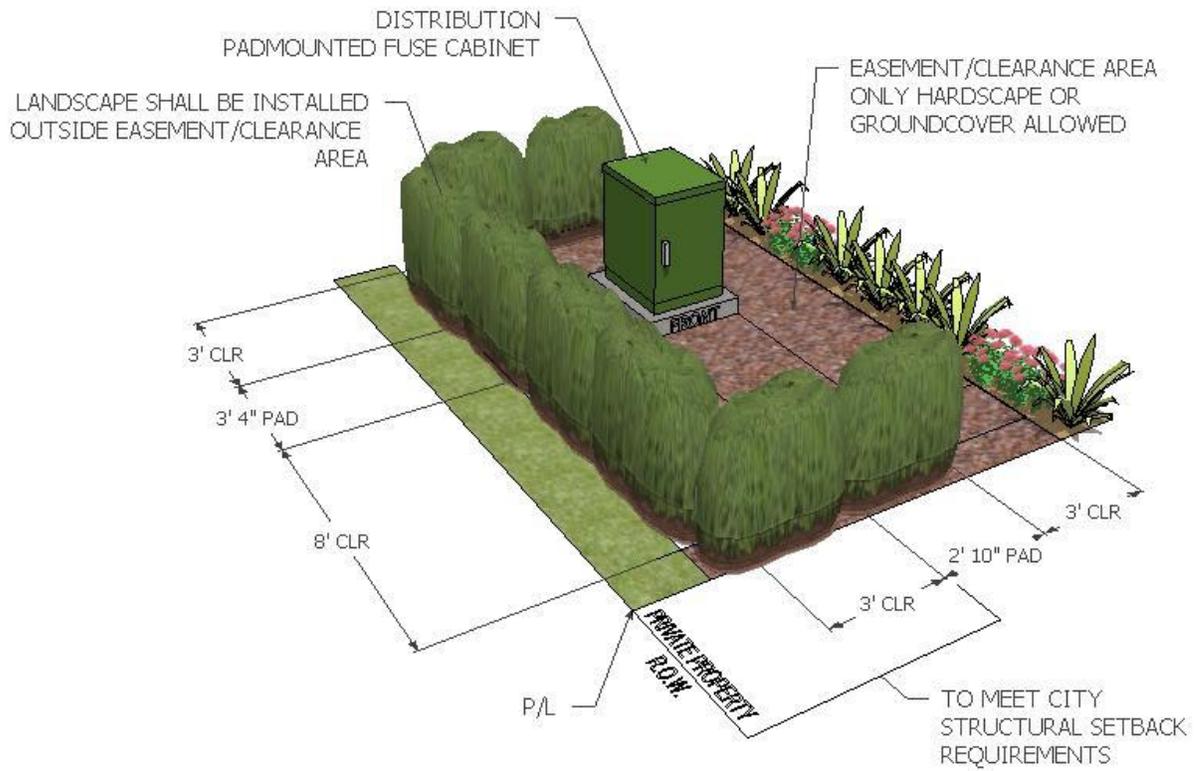
The following are suggested screening installation methods and clearance requirements for aboveground utility equipment. The illustrations and guidelines are intended as a reference in developing an acceptable screening method. Clearances and dimensions should be reviewed and approved by the utility provider prior to construction.



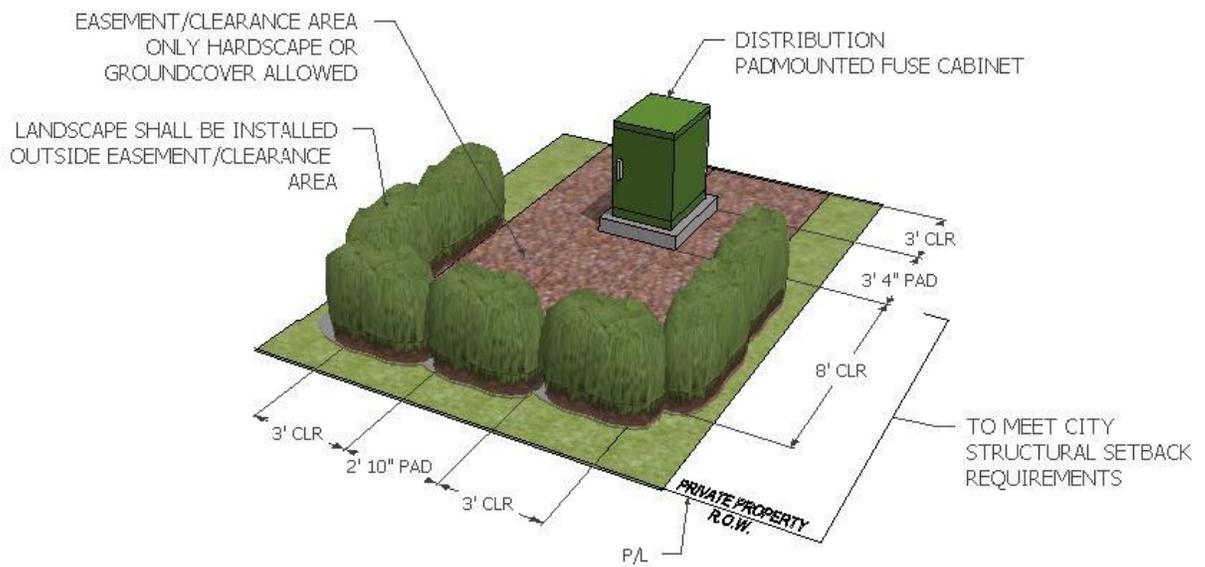
Front of transformer is parallel to R.O.W.



Front of transformer is facing R.O.W.

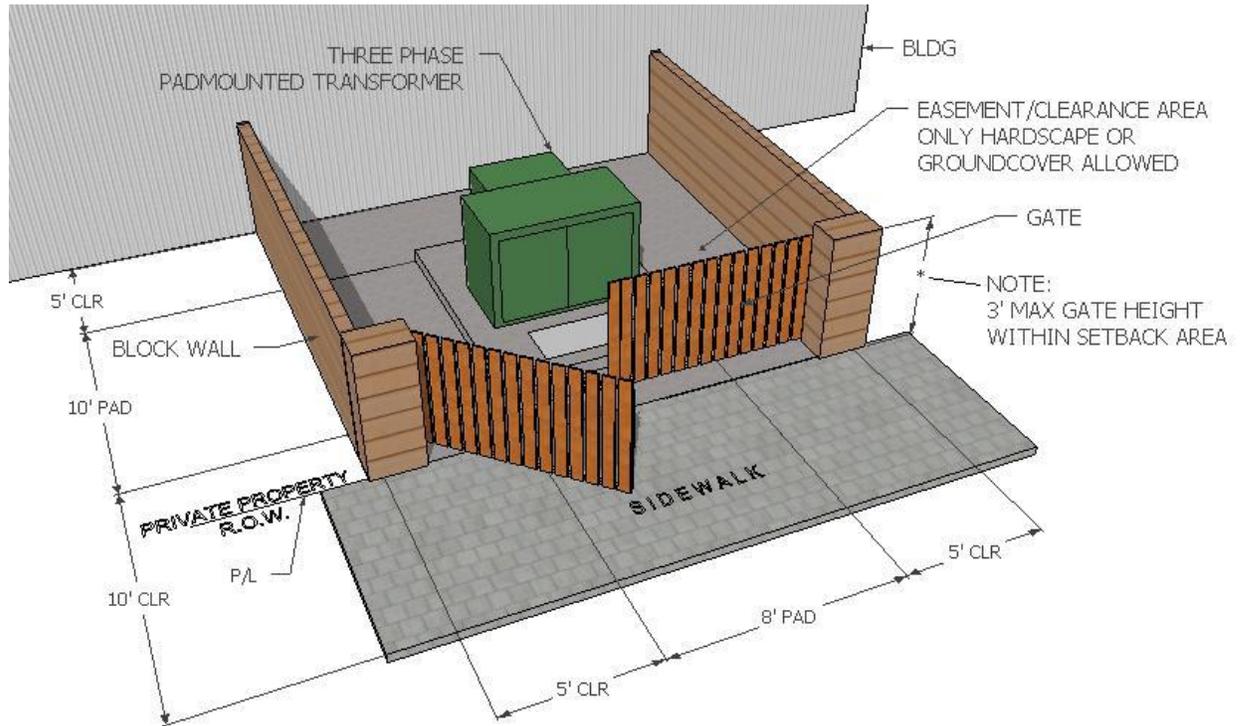


Single Phase Pad Mounted Transformer: Front of fuse cabinet is parallel to R.O.W.

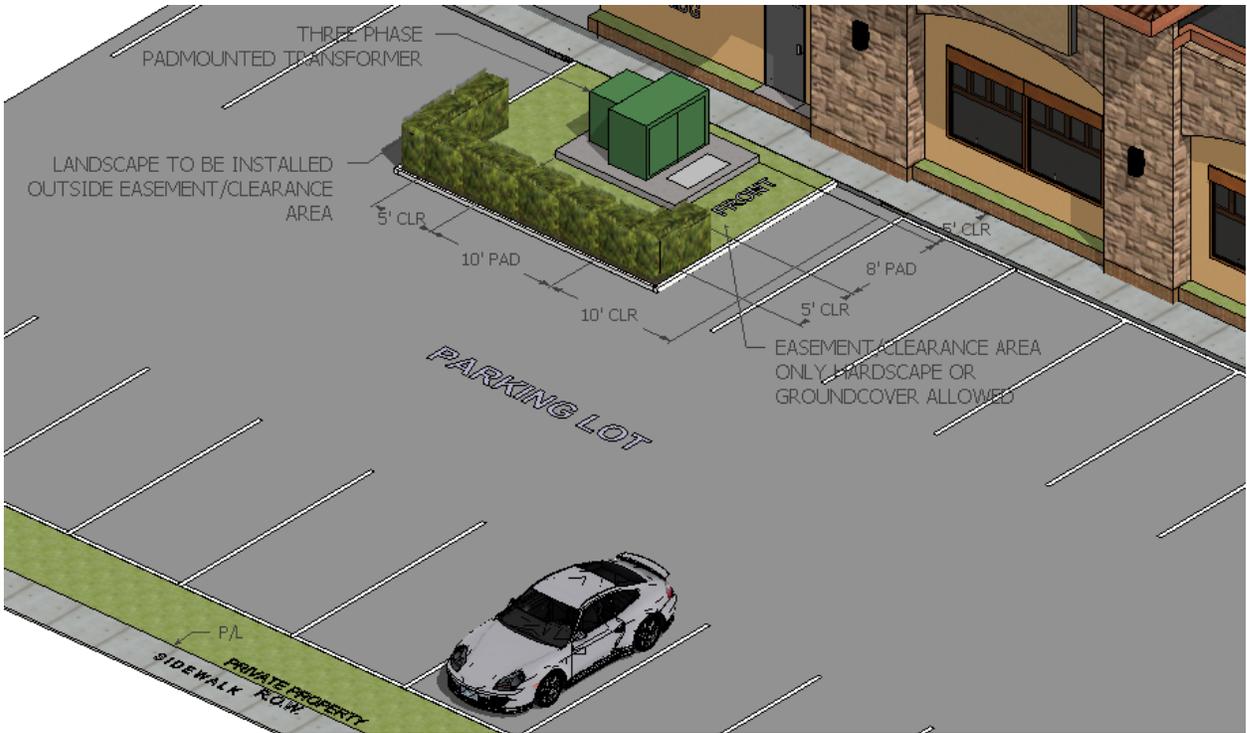


Front of fuse cabinet is facing R.O.W.

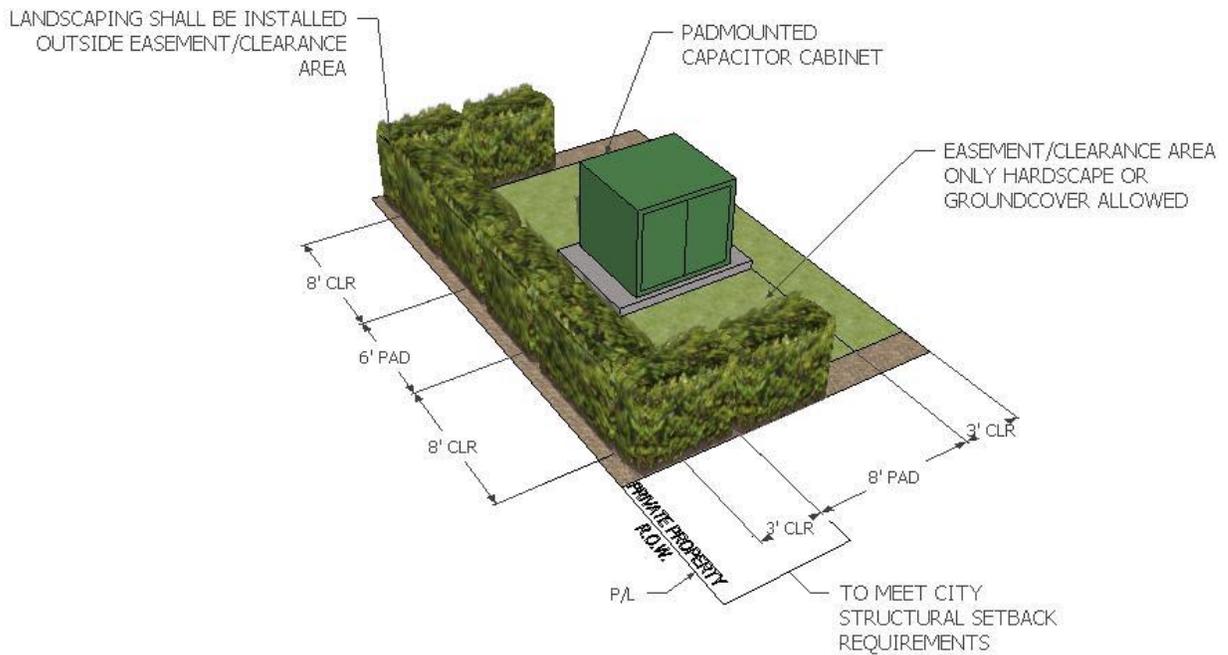
Transformer with 8'x10' pad. Front of transformer is facing R.O.W. The gate opening is screened with a landscape feature that provides a 10' working clearance. The screening is installed outside in front of the clearance area.



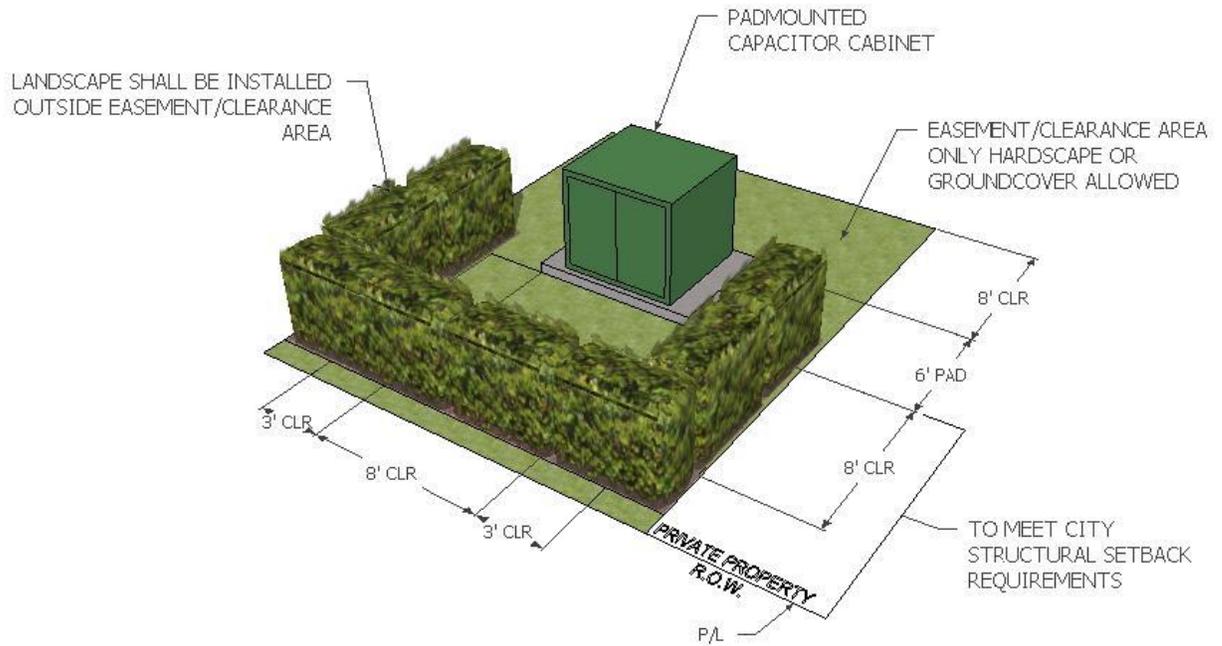
Transformer with 8'x10' pad screened with block wall and gate.



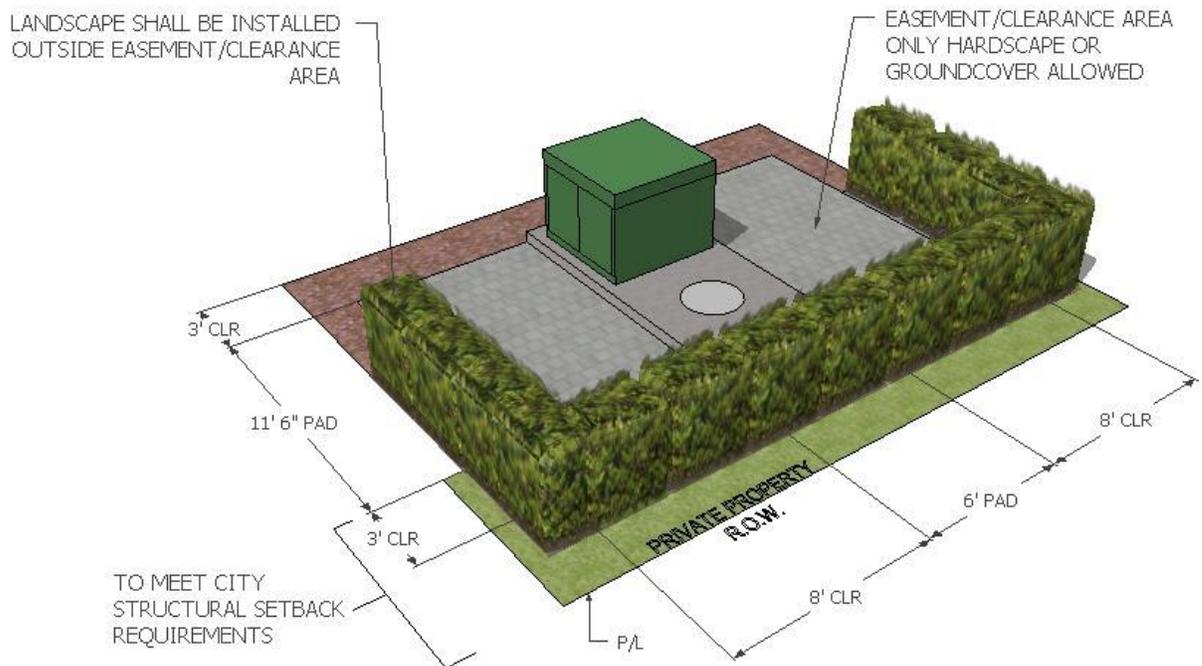
Three Phase Pad Mounted Transformer



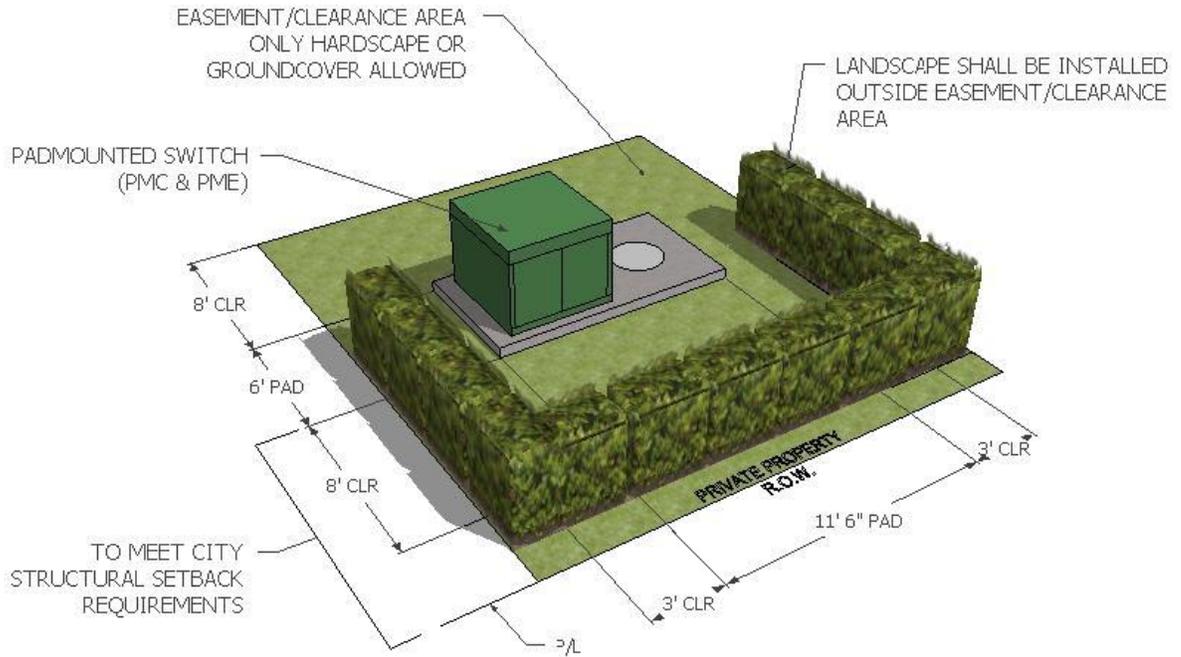
Front of capacitor is parallel to R.O.W.



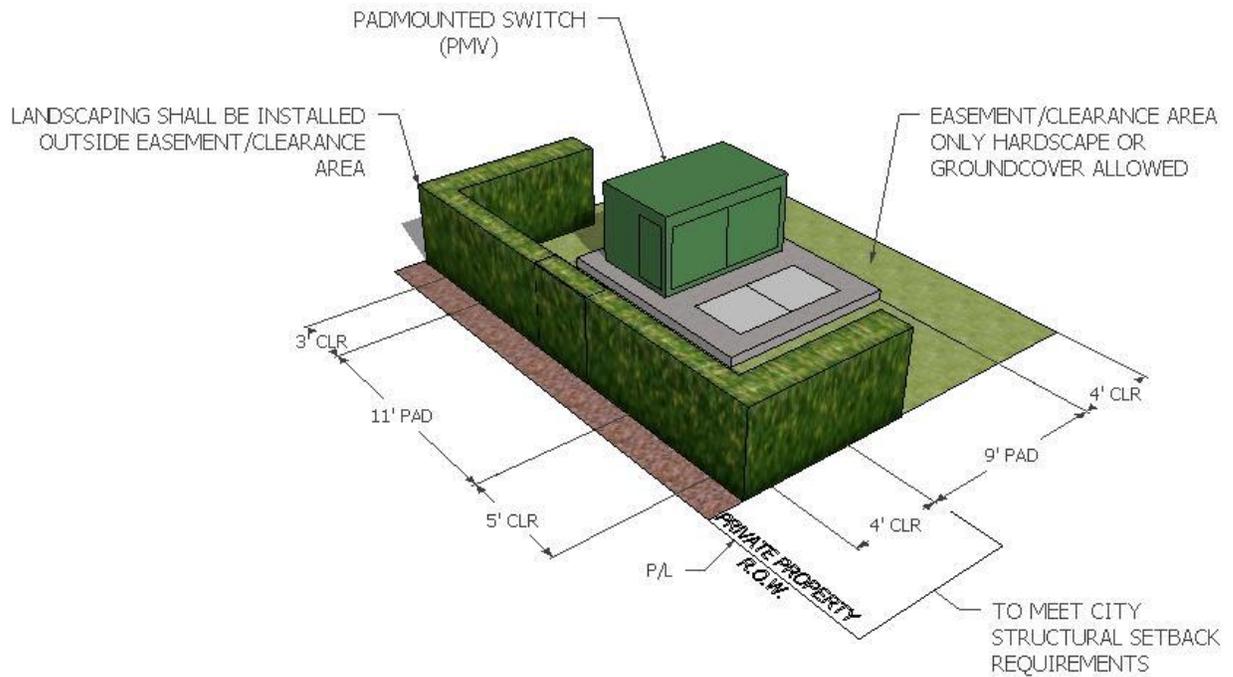
Front of capacitor is facing R.O.W.



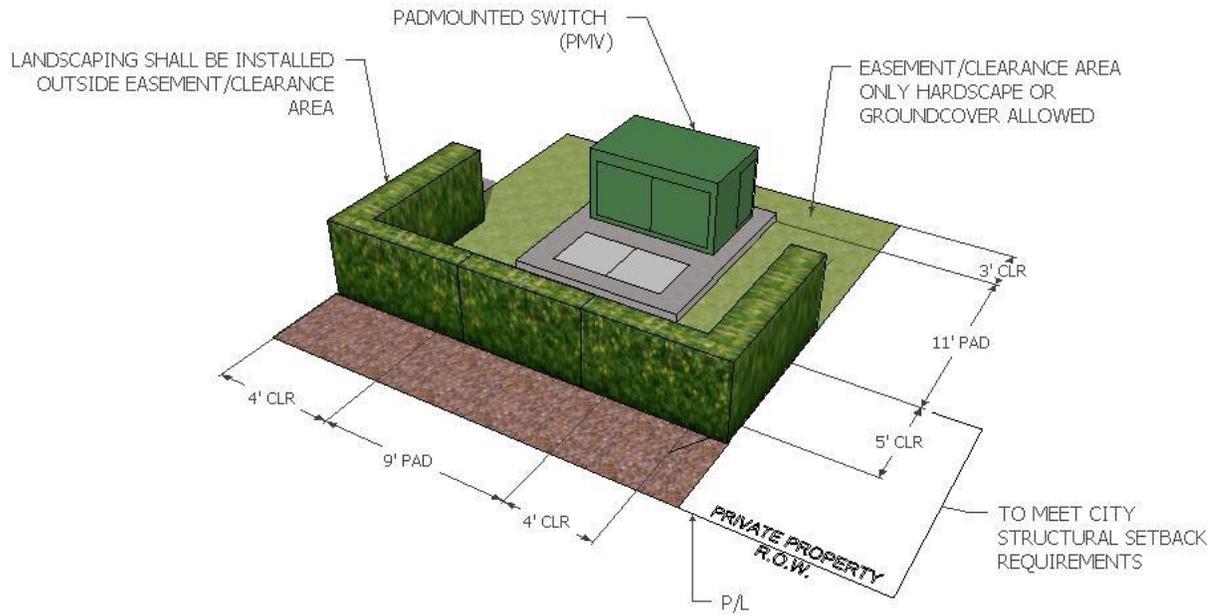
Front of PMC switch is facing R.O.W.



Front of PMC switch is parallel to R.O.W.

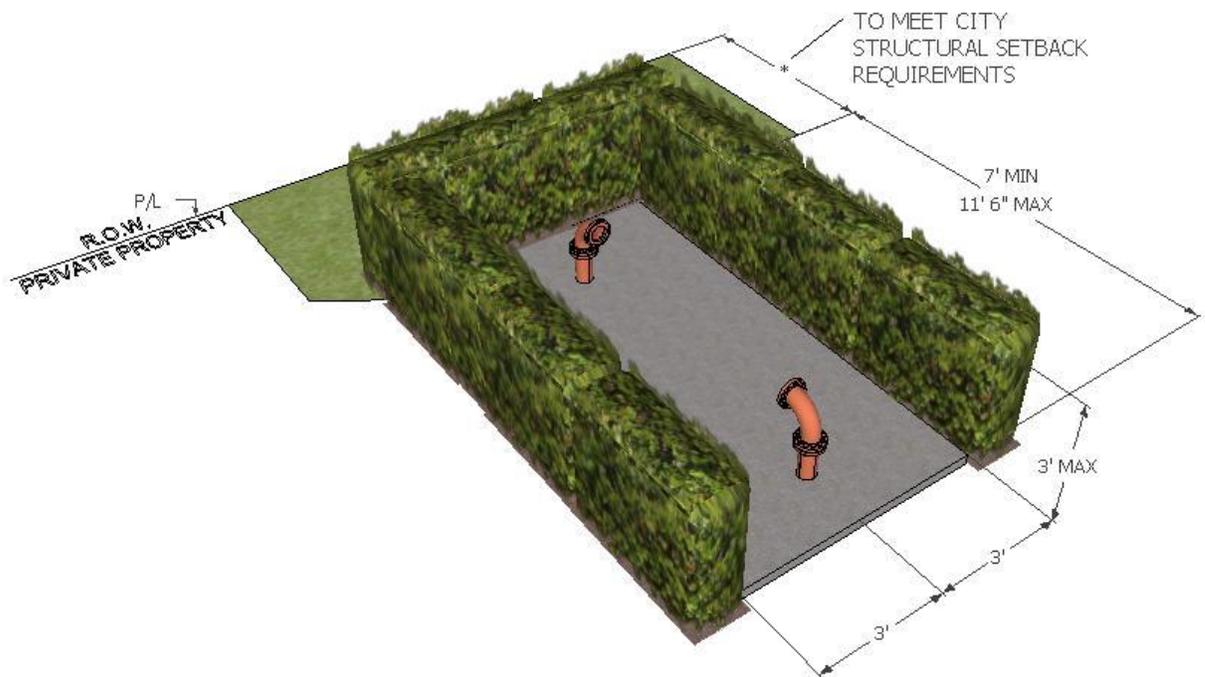


Front of PMV switch is parallel to R.O.W.



Front of PMV switch is facing R.O.W.

Standard orientation installation for above ground water assemblies.



Parallel orientation installation for above ground water assemblies.

Irrigation Systems:

Complete, operable and automatic irrigation systems should be installed for all landscape screening around utility equipment.

Maintenance:

In order to maintain required clearances, the property owner should maintain vegetation on a regular basis. Please note that utility crews may need to remove vegetation that has grown into the easement/clearance area or that is too close to the equipment to safely operate and maintain.

Planting Material Examples:

The recommendations for planting materials are as follows:

- Placement of vegetation should be outside of the easement/clearance area.
- Size and spread of vegetation should be consistent with requirements for utility screening, as identified in the above diagrams.
- Vegetation should not be invasive, i.e., root systems, vines or branches should not grow under or into structures or equipment.
- Shrubs should be half as tall as the utility equipment being screened so as to provide immediate softening of the surrounding environment.

Examine the suggested plant species list (below) to determine appropriate low-maintenance and drought tolerant plants that could be used for screening utility equipment.

SITE DESIGN GUIDELINES:

Public Open Space

Outdoor Rooms:

Shared outdoor areas intended for use by all residents should be considered “outdoor rooms” and designed as carefully as any other room in the project. Undifferentiated empty spaces should be avoided. Consider the types of activities that will occur in outdoor public open spaces and design accordingly.

Boundaries:

Provide clear boundaries between public and private spaces, and especially around spaces intended for public gathering. Consider enclosing or partially enclosing such spaces with project building(s) to provide clear boundaries.

Appropriate Plantings:

Consider how the landscape will be used by project occupants and choose plant types accordingly. In general, assume heavy use in all landscaped areas. Avoid delicate plants and shrubs in heavily trafficked areas, especially in locations frequented by children.

Edges:

Where planted areas, other than lawns, meet hard surfaces, some form of raised edge should be included to contain soil and discourage cutting across the bed. Consider designing edges to also serve as outdoor seating areas.

Paths:

Pedestrian paths and walkways can be critical to good project circulation, particularly in the case of larger, multi-unit developments. Paths should be designed to accommodate a wide range of uses.

Attempt to avoid paths that are too narrow to accommodate multiple users simultaneously. Consider rounded corners at all intersections and direction changes, especially in projects with children. Ensure that paths are well-lighted and consider designing path edges to encourage users to stay on the path and not trample on adjacent plantings (through changes in slope or materials or by providing raised edges). Be aware that the shortest route from point A to point B is usually a straight line and anticipate new, unplanned paths that often appear to accommodate occupant use patterns, especially in areas with circuitous routes.

Site Furniture

Outdoor Seating:

Outdoor seating should be an integral part of any landscape plan and should be thoughtfully designed and located. Consider how the seating should be designed to accommodate weather events. Consider diversifying seating sizes and styles to accommodate different users.

Types of outdoor furniture that should be considered for projects:

- Benches
- Chairs
- Tables
- Trash receptacles
- Bike racks
- Trellises
- Fencing
- Art work
- Statuary

Parking Areas

Parking lots and driveways are often necessary elements in a commercial area, yet they should not visually dominate the project area. A landscaped buffer strip separating the sidewalk from adjacent parking areas maintains the sidewalk edge and provides safety and comfort for the pedestrian. Screening of parked cars and paved areas builds a positive image for the district, provides color and shade and screens nearby residences from commercial uses.

Curb-Cuts:

Wide driveways are unsightly, reduce opportunities for perimeter planting areas, promote speeding and create hazards for pedestrians who need to cross them. Wide driveways also increase the heat island effect, raising surface temperatures to uncomfortable levels for pedestrians and vegetation in the summer months. Narrow entrances and driveways are, therefore, encouraged.

Lighting of Parking Areas:

Lighting of parking areas is essential for safety and usability. However, sufficient lighting levels can be achieved without bright glaring lights shining onto adjacent properties or into the eyes of motorists and pedestrians. The use of cut-off fixtures can direct light to the ground, where it is most useful, and avoid directing light in other directions where it is not desired. Many attractive cut-off fixtures are available. Low fixtures, ranging between 14' and 17' in height, should be used in residential areas, as opposed to high-mast fixtures. Historic fixtures or fixtures without shielding should be used with low wattage light sources to reduce glare. The use of bollard lighting can be an effective way to light pedestrian pathways.

Overall Impact:

Avoid letting garages, driveways and parking lots dominate the streetscape. Consider placing them at the rear or side of the site to allow the majority of the building to face the street. Consider planting trees and shrubs to soften the overall impact of parking areas and to provide shade and noise reduction. At buildings with parking garages, avoid large areas of blank walls facing the street and consider improving unavoidable blank walls with decorative artwork, display cases, vines and good quality durable materials to minimize graffiti and deterioration. Consider incorporating decorative elements above garage doors to soften their visual impact.

Vehicle/Pedestrian Interaction:

Minimize conflicts between vehicles and pedestrians. Consider separating bicycle and pedestrian paths from vehicular traffic. Consider linking open spaces so that they form an uninterrupted network of vehicle-free areas. Attempt to avoid parking layouts that erode a project's open space until only "leftover" areas are available for pedestrian use. Consider traffic calming strategies to slow down cars within the project.

Traffic Poles and Crossing Signals

Summary of Traffic Pole and Crossing Signal Design Goals:

- Poles should be decorative or ornamental.
- Poles should be colored black.
- A decorative base should be provided.
- LED lighting should be provided.
- The pole design should be sensitive to surrounding neighborhoods and environments, e.g., the use of historic replicated poles and lenses in historic

neighborhoods and the use of decorative poles with banner, planter, and flag attachments for the downtown area and major routes.

- Crossing signal poles should match decorative and ornamental traffic poles that are in close proximity.

Examples of ornamental poles, bases and sign posts:





Landscaping and Planters

This section of the guidelines is intended to provide developers and other stakeholders with a basic framework for designing landscaped areas that encourages continuity, consistency and design excellence. The following material applies to all areas/landscapes surrounding structures, as shown on applicable site plans and other project documents, and can also apply to rooftops, patios and other areas within or on top of structures.

Overall, landscaping that is well-designed, executed and maintained draws visitors, complements adjacent structures and other property features, and provides a strong, unified visual context for the area.

General Guidelines:

- Existing healthy trees should be preserved wherever possible.

- Plantings should be balanced to achieve an attractive initial appearance while also accommodating the mature size of plants. Overplanting that requires later plant removal should be avoided. By alternating or mixing tree types, a sense of enclosure can be achieved while slower growing trees are established.
- In cases where existing protected trees are allowed to be removed for new development, additional plantings and other mitigation measures are encouraged.
- Landscape and utility plans should be coordinated to avoid potential conflicts.
- Tree canopies should not conflict with the safe movement of pedestrians and vehicles. When locating deciduous trees, their canopies should be maintained to ensure a minimum of 8' in clearance height along pedestrian corridors (higher along equestrian trails) and a minimum of 15' along vehicular corridors. Because small deciduous trees and ornamental canopies often cannot meet these criteria, their use and placement should be carefully considered.
- To mitigate and absorb rainwater runoff and stabilize soil, planted areas should utilize vegetation as a ground cover to the maximum extent possible. Use of gravel, crushed stone, decorative rock and similar materials should be limited to small, defined areas such as swales, drainage basins, drip lines under gutterless roof edges and around bases of signs. Irrigated, non-turf areas not covered by vegetative ground cover should be covered with a 2" layer consisting of organic mulch (e.g., chipped wood, leaf mold, bark mulch) to prevent soil erosion, moderate soil temperature fluctuations and weed growth, and to improve overall soil health. Extensive areas of mulch that include minimal, isolated plantings should be avoided.
- Plants selected for sloped areas should be effective for erosion control. Varied species and irregular plant spacing should achieve a natural appearance on disturbed or graded slopes. Disturbed soil should be stabilized against erosion until plant cover is achieved. Ground cover, with the exception of turf, should be used on all slopes exceeding 10 percent.
- A minimum of a 4' clear space is encouraged around the circumference of fire hydrants and utility boxes.
- Visual Clearance/Sight-Distance Triangle: At the intersection of roadways and vehicular access points, no plant material with a mature height of greater than 3' from the pavement surface (except for the trees noted below) should be planted within the sight triangle measuring 44' along the edge of pavement, measured from the point of the intersecting edge of pavement, except where engineering standards indicate otherwise. Deciduous trees (and properly trimmed conifers) can be permitted to encroach into the sight visibility triangle provided that the lowest branch of any such tree is at 8' vertical clearance from grade.

Site Planning and Design:

- A landscape plan should be developed through a thorough investigation and evaluation of the site. This site analysis should include all pertinent features and characteristics, such as sun exposure, soils, hydrology, existing desirable trees, presence of invasive plants, views and vehicular and pedestrian movement.
- When feasible, trees and shrubs should be massed in groupings to create strong accent points. Planting designs should emphasize massing and form rather than individual plants.
- When feasible, planting areas should be multi-layered, utilizing plants of different heights, e.g., ground layer, flowers and grasses, shrubs, understory trees and over-story trees.
- Landscape designs should accommodate maintenance activities.
- Short ornamental trees (those that grow from 12' to 25' tall at maturity) should be liberally planted to create visual accents and emphasis.
- Trees should be located to provide maximum shading of streets, sidewalks, parking areas and outdoor public spaces.
- Tree and shrub species should be carefully selected to ensure that root-growth habits do not cause damage to sidewalks, walls, neighboring properties or overhead and underground utilities. Species with invasive roots should be sited away from hardscape areas.
- Commercial and industrial projects located next to residentially-zoned areas are encouraged to incorporate appropriately-sized transitional landscaping and solid walls along the property lines so as to provide an effective visual buffer between the different land uses.
- Attractive, vegetated berms or mounds should be incorporated into flat or relatively flat areas to create visual interest, where appropriate.
- The surrounding landscape should be fashioned to complement architectural design elements. For example, consider using various landscape treatments such as trellises, vines and/or espaliers to visually break-up large surfaces of unarticulated horizontal and vertical walls and fences.
- Landscaping should be designed to accentuate primary entry points to the property and buildings.
- Annual flower beds or planters should be used to complement perennial plants to provide an attractive accent at project and building entries, monument signs and

other focal points. Potted plants or hanging baskets should be sited so as not to impede pedestrian traffic.

- Mature trees and shrubs should not visually obscure signage or storefront facades, interfere with utility lines or create maintenance issues.
- Opportunities should be sought to incorporate public gathering or resting spaces, such as patios, courtyards, and atriums. These spaces should be attractive, usable, welcoming and complementary in design and function to adjacent structures.
- Plants listed on the Massachusetts Department of Agricultural Resources' Prohibited Plant List and on the Massachusetts Invasive Plant Advisory Group's List of Likely Invasive or Potentially Invasive Plants should not be used. Existing invasive plants should be identified and properly managed.
- Use of native plants is encouraged where possible.
- Maintained turf areas should be limited to locations where turf meets a defined functional or aesthetic need, and should not be planted as a default ground cover. Consideration should be given to fertility and water needs when choosing grass types.
- When feasible, window boxes, sculptures, seating, and other similar features should accommodate small plantings.
- When feasible, desirable, existing vegetation should be protected.

When feasible, a site's landscaping should be connected to neighboring properties through common walkways and masses of plants. Paving and fence styles should also be coordinated.

Microclimate Strategies

Intelligent site design is always paramount, especially regarding the mitigation of impacts from climate challenges and the development of microclimate strategies. The site design strategies provided below take into account pertinent considerations for ecosystem health, water supply and quality, and the urban heat island effect.

Sustainable Site Design Elements:

#	SITE CONDITION	PARTICULARLY USEFUL STRATEGIES
1	Sidewalk	Tree pit enhancement; structural soil trenches, recycled content in concrete
2	Entry plaza	Rain gardens, trees for shade; recycled content in pavers; structural soil, planters
3	Loading dock	Catch basin inserts, water quality inserts; recycled content in asphalt and base aggregates
4	Parking and service area	Trees for shade, bark beds, infiltration areas, recycled content in asphalt, wheel stops, and base aggregates; pervious pavement
5	Front yard	Rain gardens, vegetated buffer, shade trees, infiltration area, biofiltration techniques, recycled content in mulch/soil amendments, habitat enhancement, native plants
6	Narrow side or rear yard	Infiltration swales, vegetated buffers; vine screens and planted walls, recycled content in fencing
7	Land-locked, irregular, “left-over” area	Amended soils, turf alternatives, habitat planting; minimize site disturbance, erosion and sediment control
8	Steep terrain	Slope reduction bench, turf alternatives, habitat planting; minimize site disturbance, erosion and sediment control
9	Courtyard	High-albedo paving; infiltration areas; recycled content in pavers and furnishings; pervious pavement
10	Shoreline edge	Minimize site disturbance; vegetated filter strip, native plants, habitat enhancement
11	Wetland proximity	Minimize site disturbance; native plants, habitat enhancement; protect existing soils and vegetation, stormwater filtration techniques
12	Campus condition	Amended soils, turf alternatives, native plants; retain existing vegetation; biofiltration techniques
V*	Previously paved	Recycled concrete aggregate or asphalt as base for new pavement or backfill
V*	Shallow rock or impermeable soil	Underdrained bioretention, detention structures; reuse of rock or crushed rock aggregate in landscape and subbase
V*	Elevation change at entry	Planters; recycled content in mulch and soil amendments
V*	Perimeter enclosure	Vine screens, planted walls, windbreak/planted buffer

V* - Various Sites

Sustainable Site Planning:

What makes site planning “sustainable”? If basic site design already considers physical characteristics and functional goals, then sustainable planning incorporates practices that are sensitive to the environment. A sustainable approach to site planning should target the following:

- Maintaining and protecting valuable stands of vegetation.
- Minimizing impacts of run-off to adjacent water bodies.
- Reducing contribution to the urban heat island effect by using appropriate landscape materials, minimizing paved and impermeable surfaces, and reducing energy consumption.
- Restoring the health of degraded developed sites.
- Reducing water consumption and protecting waterbody quality.
- Encouraging access to public transportation and facilitating non-motorized commuting.
- Sustainable design also demands interdisciplinary design, i.e., a design process in which all professionals work together from the inception of the project. One of the traditional practices that limits environmentally sustainable design is the separation of “landscape” design and the landscape professional from the initial site planning typically done by the architect. When the landscape architect is brought in later in the design process, many opportunities have already been lost.

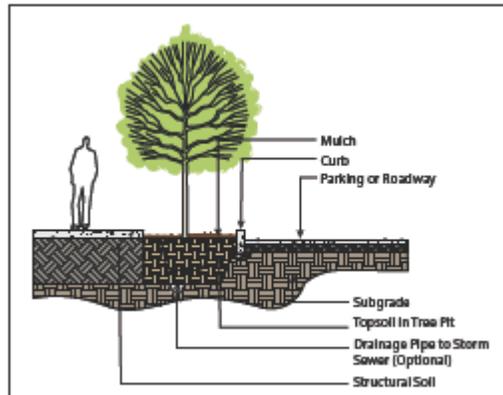
Interdisciplinary design can maximize a project’s sustainability potential if all consultants understand their roles and start together at the beginning of the project. The whole design team and affected stakeholders can work together through all of the project phases and evaluate the design for cost, quality of life, future flexibility, efficiency, environmental impact and creativity. Working together also means staying together for the duration of the project, including the construction and post-construction phases.

Techniques for Maximizing Plant Benefits:

VEGETATION TECHNIQUES	APPROPRIATE APPLICATIONS
Structural soils in trenches	Parking lots, sidewalks/streets, plazas and other paved areas
Continuous soil zones	Narrow or confined spaces
Amended soils	All applications
Maximizing biomass	All applications
Turf alternatives	Planting strips, and un-occupied areas
Windbreaks	Northern site exposures
Vine screens	Narrow spaces to shade southern exposures
Habitat enhancement	All applications

Applications of Structural Soils:

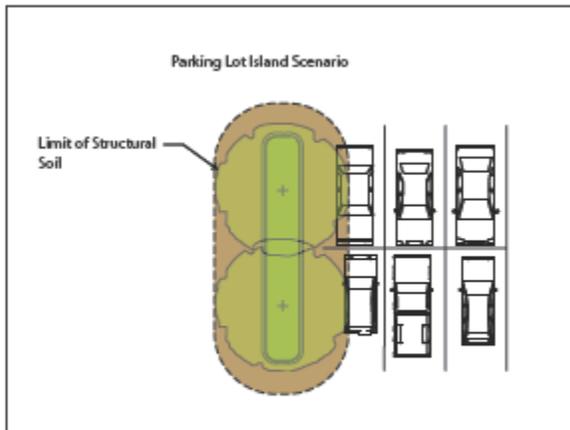
Structural soils allow the integration of trees and vegetation with paved areas, most commonly in combination with street trees, because of their close proximity to both sidewalks and roadways. While structural soils can support impervious poured-in-place concrete, optimal water penetration is achieved by using permeable pavers, such as cobbles, around the tree. A sub-drain connecting to the existing stormwater system is recommended. The diagrams in this section show several examples of how structural soils can be used to plant trees and other vegetation where pavements are also necessary.



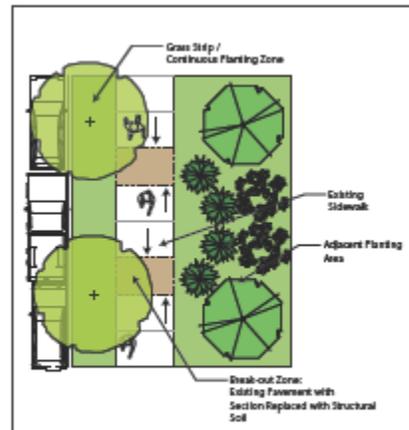
Structural soil under adjacent pavement provides additional soil volume for tree roots

Parking Lot Application:

Structural soil can be utilized under the adjacent pavement on parking lot islands to allow tree roots to grow outward from under the planting bed. Structural soil will encourage roots to grow downwards and away from pavement, preventing cracking. Irrigation may be necessary for the first few years of the tree's life to account for the reduced amount of water entering the soil under the surrounding asphalt.



Structural soil use for parking islands. Enlarged and shared soil zone allows for better tree development



Connect trees with limited soil volume to adjacent planting areas using break out zones

Retrofitting Application – Pavement Near Existing Street Trees with Breakout Zones:

When replacing pavement areas adjacent to existing trees, the application of smaller amounts of structural soil under the replaced pavement can bridge a gap between the tree planter and an existing non-paved area. These areas, called *break-out zones*, lead a tree's

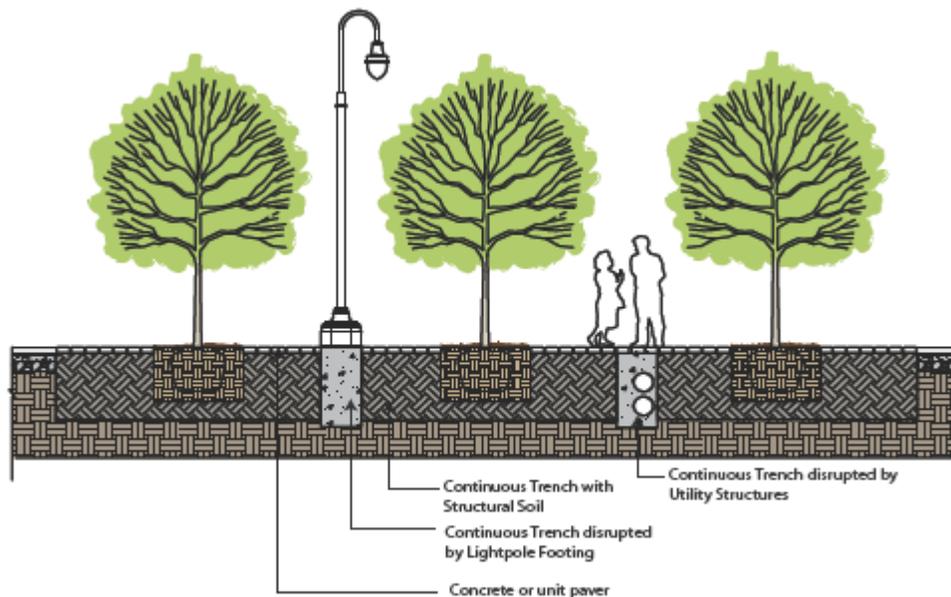
roots through the barrier of compacted soil into a nearby pervious area that is not paved and not compacted. Tree roots quickly take to break-out zones and begin to stretch out into the new found root space. This method is also useful for conserving the quantity of structural soil used.

Continuous Soil Zones:

Continuous soil zones are essentially large tree pits or trenches that give each tree access to more or better soil. Such zones can be filled with either topsoil or structural soils depending on the nature of the area between trees, project budget and other site constraints. The increase in soil volume allows plant roots better access to air, moisture and nutrients. Overall, the larger the planting zone, the higher the survival rate of the plant. Continuous soil zones are expanded versions of the typical planting technique of tree pits. Trenches and continuous soil zones support the growth and lifespan of vegetation because of the following:

- Greater absorption of stormwater runoff and reduction of the need for drainage and watering systems. This can offset the need and costs of soil trenching necessary for installing utility pipes and systems. Soil trenching is not only expensive, but can be harmful by interfering with the root systems of trees.
- Greater area for root growth and the sharing of resources among individual trees.
- Minimizes the risk of heaving pavements and the associated costs of repair and tripping injuries.

Continuous soil zones are recommended whenever the space is available and their construction does not endanger adjacent existing trees. Such zones are not automatically used because there is some added construction cost for additional excavation and backfill.

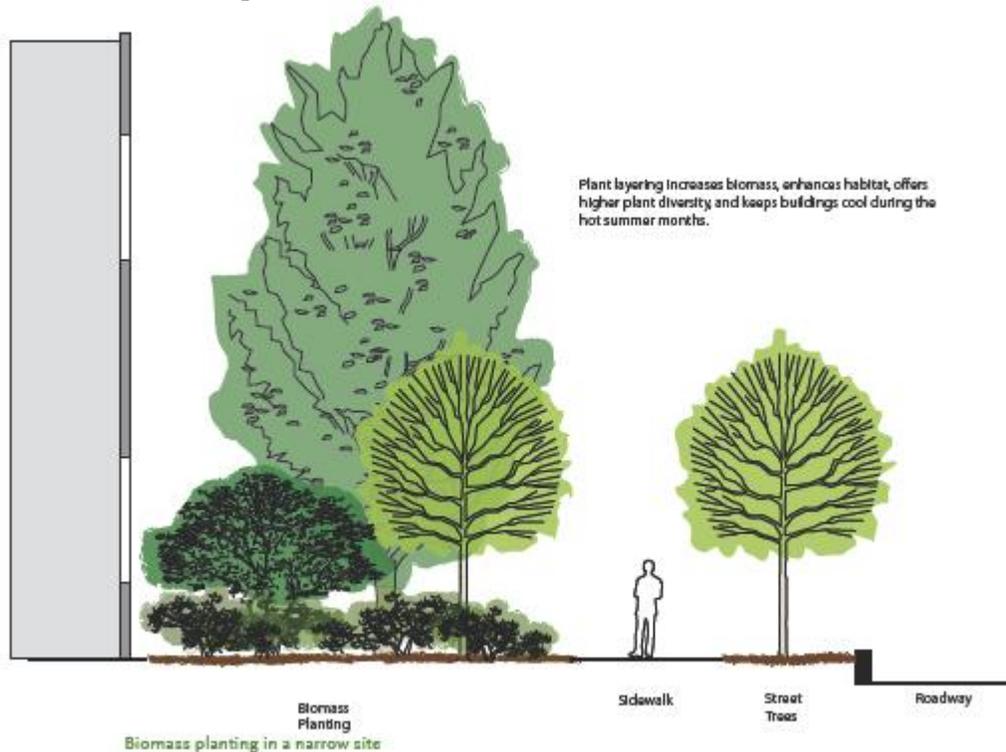


Continuous structural soil allows paving between individual tree pits

Maximize Biomass:

Biomass is the term used to describe the total amount of living matter within a given unit of area. Increasing biomass within the built environment has many beneficial qualities, such as reducing air and noise pollution, reducing and treating stormwater runoff and soil erosion, mitigating the urban heat island effect, stabilizing the local microclimate, reducing energy usage in buildings for heating and cooling, improving public health, and creating pleasant streetscapes for the public.

There are numerous scientific methods for calculating the multiple positive environmental functions of plants. One such method is the calculation of total leaf surface area., such as calculating Large leaves tend to have more pores (stomata) per leaf, which are important in the photosynthesis process. Similarly, more leaf area leads to increased evapotranspiration, which introduces more moisture into the atmosphere. More leaf area also leads to more surface area to trap particulates. The goal, therefore, is to maximize areas of planting within a site. To do this in limited space requires a variety of plant species in a range of heights, so that one plant may be located within the canopy of another, as the example below of a narrow site shows.



Examples of Locational Opportunities:

- **Sidewalk:** Maximize the number of street trees by coordinating above and below-ground utilities to minimize required clearances between trees and utilities; plant large canopy trees to provide maximum shade and leaf surface area; and use continuous soil trenches to ensure adequate soil volume to encourage trees to mature to their full capacity.

- **Front Yard:** If the building does not sit on the property line, this area could be used to create a public space that incorporates shade trees and areas of understory and herbaceous plantings.
- **Side Yards:** These areas are ideal locations for dense buffers of planting that serve to mitigate wind, shade southern and western walls, screen service areas and maximize species diversity.
- **Rear Yard:** Depending on the building function, a rear yard could be a landscaped area for building occupants to enjoy; even if it is used for parking, there are still opportunities to introduce shade trees and vegetated buffers.

Some of the best tree species for shade and large leaf area include: *Tilia americana* (American Linden), *Quercus macrocarpa* (Bur Oak), *Catalpa bignonioides* (Southern Catalpa), *Liriodendron tulipifera* (Tulip Tree), and *Gymnocladus dioica* (Kentucky Coffee Tree). Some examples of the best understory and large shrubs that have either large leaves or dense foliage include: *Hydrangea quercifolia* (Oak-Leaf Hydrangea), *Ilex glabra* (Inkberry), *Itea virginica* (Virginia Sweetspire), *Clethra alnifolia* (Summersweet) and *Aronia arbutifolia* (Red Chokeberry).

Turf Alternatives:

Conventional landscaping frequently uses turf as a seemingly low-cost, low-maintenance solution to planting. Turf areas are actually expensive to maintain and have high environmental costs. Turf requires considerable chemical intervention in the form of fertilizers, pesticides, and herbicides, which contribute to water pollution. Increased levels of phosphorous and nitrogen (used in lawn care) cause rapid aquatic growth and subsequent decomposition, depriving fish and other aquatic life of oxygen; this can lead to an eventual failure of a natural ecosystem. Studies show that concentrations of nitrogen and phosphorous have doubled in the last century.

Reduction in turf areas in favor of native, low-maintenance landscapes can help reduce the amount of landscape-related pollutants entering natural systems. Furthermore, by using deep-rooted ground covers instead of shallow rooted turf grasses, water quality can be improved by slowing stormwater, encouraging infiltration and capturing pollutants carried by runoff. A turf area requires at least 1" of water per week, which frequently must be applied by irrigation. By contrast, native grasses and drought tolerant ground covers can withstand up to three weeks of no rainfall without ill effects. Such ground covers can be planted on slopes steeper than 1:3, which is the limit for a lawn mower. Ground covers are also very effective in narrow or small areas or locations inaccessible to a mower.

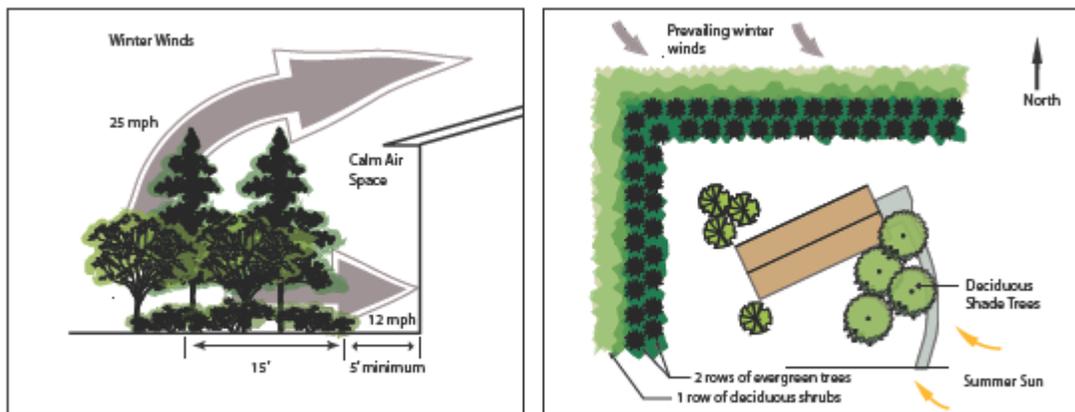
Windbreaks:

Wind may be intercepted, diverted or lessened by obstructions such as buildings, walls, fences, earth forms, or plants. Buildings produce turbulent airflow as air moves around building corners. Several buildings clustered together can create a condition known as a wind tunnel, which can be uncomfortable. Unhindered, moving air generally flows in

parallel layers. Wherever the wind flows over a vertical surface, the layer of air generally speeds up, creating a low pressure zone on the leeward side. A pierced screen such as a slatted fence or plant buffer allows some wind to penetrate, causing less pressure differential and providing a greater wake of protection on the leeward side.

Plants control wind by obstruction, guidance, deflection and filtration. Coniferous and deciduous trees and shrubs used individually or in combination affect air movement. Plants may be used in conjunction with landforms and architecture to alter airflow over the landscape and around, or through, buildings.

Strategic use of windbreaks can reduce heating loads in the winter and direct cooling breezes into operable windows in the summer to reduce cooling loads. Coniferous evergreens that branch to the ground are generally the most effective year-round plants for wind control. Deciduous shrubs and trees are most effective in the summer.



Windbreaks slow winds and reduce winter heating loads

An effective windbreak is perpendicular to the prevailing winds, with layered vegetation

A penetrable windbreak has a lower percentage of nearby wind reduction, but the overall calming effect extends a greater distance than if the barrier is impenetrable. The optimum density for a windbreak is about 60 percent. This means that leaves, trunks, and branches should cover 60 percent of the frontal area of the barrier.

Vegetated windbreaks are most effective when placed perpendicular to the prevailing winds. The zone of wind reduction on the leeward and windward sides of the barrier is largely dependent on the height of the barrier. The taller the trees, the more rows of trees are required for protection. A windbreak comprised of trees of varying heights is more effective than one of uniform height as the air stream is broken up as the wind is deflected over the trees. When using only evergreen plants, two to three rows of trees are adequate. When using deciduous material, four to five rows are necessary. Evergreen trees should be spaced 6 to 8 feet apart and staggered if there is more than one row. When several rows are used, rows should be 12' to 20' apart depending on the mature size of the plants.

Effective species for evergreen windbreaks include species of the *Abies* (Fir), *Picea* (Spruce), *Pinus* (pine) and *Juniperus* (Juniper) groups. Effective species for deciduous windbreaks include *Catalpa* (Catalpa), *Cercis* (Redbud), *Cornus* (Dogwood),

Gymnocladus (Coffee Tree), Quercus (Oak) and Populus (Poplar). When selecting species, it is important that the plant itself be wind tolerant, otherwise it will suffer from desiccation, leaf damage or create hazards from broken limbs.

Vine Screens:

There are a variety of ways to reduce heat gain within a building. In addition to glazing solutions, interior shading solutions and insulation, vine screens can be effective in reducing heat transmission. Vine screens can either be free standing or building mounted. In addition to providing shade, vine screens reduce ambient temperature through evapotranspiration and can lower interior temperatures through operable windows. Vine screens can have other advantages including obscuring undesirable views and contributing seasonal color and fragrance for the enjoyment of building occupants.



Vine Screen – City Walk, CA.

Water Management

Two primary water management techniques should be considered:

- Stormwater Management: Controlling water from both typical and atypical storms so that it does not damage vegetation and soil and cause flooding.
- Water-efficient Landscaping: Conserving potable water while maintaining healthy plants and an attractive landscape.

Stormwater Management:

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces such as driveways, parking lots, sidewalks and streets prevent stormwater runoff from naturally soaking into the ground. Traditionally, the aim of a stormwater management system has been to collect, conduct and dispose of stormwater as efficiently and as quickly as possible. Instead of infiltrating water into the ground, impervious surfaces direct stormwater into the nearest storm drain or combined sewer system. Such surfaces are so efficient at moving water that the time it takes for stormwater to arrive at any given point in the watershed is very short, translating into large volumes of runoff occurring in a short amount of time.

This method of stormwater management can result in serious environmental degradation. Stormwater can pick up debris, chemicals, dirt and other pollutants, which can then flow

directly into a storm sewer system, lake, stream, river, wetland or coastal water body. This polluted stormwater runoff can have many adverse effects on plants, fish, animals and people. For example:

- Sediment can cloud the water, reducing oxygen and the penetration of sunlight, and destroy aquatic habitats;
- Excess nutrients in sediments can cause algal blooms that also result in drastic reduction of dissolved oxygen in the water and thereby suffocate fish and other aquatic organisms;
- Bacteria and other pathogens can wash into swimming areas, requiring beaches to close;
- Debris that is washed into water bodies can choke or disable fish and aquatic birds;
- Hazardous wastes such as pesticides, paints and solvents can poison aquatic life, and cause people and land animals to become sick from either ingesting the contaminated water or fish, in whose fat these contaminants accumulate.

Landscape design strategies can slow down the flow of water across a site, absorb it and cleanse it. Designers should have creative leeway for facilitating the processes of water collection, retention, filtration and release of stormwater that can be as educational and attractive as they are instrumental to improving the environment.

Water-Efficient Landscaping:

Just 1% of the entire water supply in the world is available for human use; the rest is salty or locked in ice caps and glaciers. According to the U.S. Geological Survey, of the 26 billion gallons of water consumed daily in the United States, approximately 7.8 billion gallons, or 30%, is devoted to outdoor uses. The majority of this is used for landscaping. Rethinking how landscapes are designed can save significant quantities of water and engender the following benefits:

- Significantly reducing demand for irrigation (including irrigation with potable water) by using native and other “climate appropriate” landscape materials;
- Decreasing energy use and air pollution through less pumping and water treatment;
- Saving water as well as time and money spent mowing, fertilizing, removing green waste and maintaining landscapes by limiting the use of turf and other irrigation-intensive materials;

- Reducing runoff of stormwater and irrigation water, which deposit sediments, fertilizers and pesticides into receiving water bodies;
- Encouraging plants to develop a self-sustaining root system capable of withstanding moisture fluctuations by not watering in excess of a plant's essential need.

Techniques for Managing Stormwater:

STORMWATER TECHNIQUES	APPROPRIATE APPLICATIONS
Hardscape Techniques	
Pervious Paving	Parking lots, plazas, pedestrian paths, overflow parking areas, paved play fields, bike paths
Pre-Treatment Techniques	
Filtration Basin/Sand Filter	Fueling areas, truck washing areas, outdoor storage areas containing products that could contaminate soil
Vegetative Filter/Buffer	Parking lot islands, perimeter landscaped areas adjacent to paved areas
Bark Beds	Parking lot islands, perimeter landscaped areas adjacent to paved areas
Catch Basin Inserts	Loading docks, fueling areas
Structural Techniques	
Planters	Entry plazas, elevation changes adjacent to steps or ramps
Storage/Infiltration Beds	Under paved or planted areas where soil has good percolation
Water Quality Inlets	Parking lots, loading docks
Drywells	Under paved or planted areas where soil has good percolation
Subsurface Detention Tanks	Where soil has poor percolation and where sewer capacity is limited
Rooftop Detention Green and Blue Roofs	Where structural capacity, roof slope and waterproofing system permit
Rain Barrels/Cisterns	For low volume rainwater collection
Bioengineered Techniques	
Infiltration Areas	Landscaped area, courtyards, plazas, parking lot islands
Tree Pit Enhancement	Sidewalks, plazas, courtyards
Infiltration Swale	Parking lots, road edges, narrow landscaped areas where soil has good percolation
Rain Garden/Bioretenion	Small landscaped areas under downspouts or impervious surfaces
Underdrained Bioretention	Plazas, parking areas or roads where soils exhibit poor percolation
Recharge Basin	Plazas, parking areas or roads when site is located over an aquifer

Slope Reduction Bench	Large to medium-sized sloping vegetated area
Shoreline Restoration	Any site adjacent to a freshwater or intertidal wetland , fresh, brackish, or salt water body
Plant Material/Design	Any application of vegetation used for bioengineered stormwater management
Vegetated Roofs	Any flat or gently sloping roof with adequate structural capacity (see DDC <i>Cool and Green Roofing Manual</i>)
Berms	Medium to large sites whose construction will generate excess soil

Light-Colored Paving and Hardscape:

To mitigate the heat island effect, paving can be lightened by using concrete in lieu of asphalt, selecting another light-colored material or surface coating, or using lighter colored aggregate in asphalt. An alternative strategy is the use of porous pavers with light aggregate fill, which cool by evapotranspiration as well as reflectance.

Paving and hardscape materials are selected to resist the urban heat island effect based on two criteria: albedo (reflectance) and emittance. Albedo is a percentage scale expressing the ability of a surface to reflect solar rays, rather than absorb solar energy as heat. It is measured in increments from 0 to 1, with 1 being the highest reflectivity index (white surface) and 0 being the highest absorptive index (black surface). New asphalt pavement has an albedo of 0.04 while light colored granite has an albedo of 0.54. Increasingly, manufacturers of paving materials give reflectance values for their products. The higher the albedo, the more solar energy a material reflects as light and the cooler it remains.

Light Colored Pavement Types:

PAVEMENT TYPE	APPLICATION
Typical new gray concrete	All paved surfaces; Surface reflectivity is affected by color of cement and color of aggregate. Can meet LEED-NC 2.2 Credit SS 7.1
Typical new white concrete	All paved surfaces. Through weathering, surface SRI is reduced to 45. Can meet LEED-NC 2.2 Credit SS 7.1
Light colored pigment or natural concrete	All paved surfaces. Lighter color than standard grey concrete; lighter color aggregate will further lighten. Can usually meet LEED-NC 2.2 Credit SS 7.1
Light colored stone or concrete pavers	Plazas, entries, high visibility areas. Surface reflectivity is affected by color of cement and aggregate. Can usually meet LEED-NC 2.2 Credit SS 7.1
Light colored loose aggregate	Paths, planted areas. Surface reflectivity is determined by color of aggregate. Possible to meet LEED-NC 2.2 Credit SS 7.1
Stabilized crushed stone	Paths, plazas. Surface reflectivity is determined by color of aggregate. Possible to meet LEED-NC 2.2 Credit SS 7.1
Porous pavers (planted)	Overflow parking areas. Surface reflectivity is affected by color of cement and aggregate. Possible to meet LEED-NC 2.2 Credit SS 7.1
Permeable pavers (aggregate-filled)	Parking, loading zones. Primary benefit is cooling through water filtration. LEED credit does not currently acknowledge this benefit. However Credit SS 7.1 can be obtained if light color paver and aggregate fill are used
Wood decking (weathered or stained light)	Seating areas. Color is variable and based on wood type and aging. Cannot achieve LEED-NC 2.2 Credit SS 7.1 unless light colored stain or bleaching oil is applied immediately.
Light colored aggregate asphalt (integral)	Roads, parking, service areas. Difficult to meet LEED-NC 2.2 Credit SS 7.1
Asphalt with light colored aggregate (surface applied)	Access roads, parking, service areas. Reflectivity determined by color of aggregate and thickness to which it is applied. Difficult to meet LEED-NC 2.2 Credit SS 7.1
Light colored coating or synthetic binder coatings on asphalt (surface applied)	Recreation areas, paths. Surface reflectivity affected by binder, aggregate and coating color. Possible to meet LEED-NC 2.2 Credit SS 7.1
Pavers with light colored or reflective exposed aggregates	Plazas, entries, high visibility areas. Surface reflectivity is affected by color of cement and aggregate. Possible to meet LEED-NC 2.2 Credit SS 7.1

Use of Recycled Products:

Designers should assess their site components for the potential to use recycled or reused products. The following chart highlights recycled products that are typically available for specific site and landscape uses:

Component	Consider
Parking Lots	Rubber curbs Recycled timber curbs and wheel stops, RAP or RAC or glass or PCC with fly ash as pavement, base or subbase material; glassphalt
Walkways, Plazas	Glass content in pavers Fly ash in concrete pavers Resilient surfacing or rubber pavement Salvage suitable materials from site demolition
Athletic and Recreational Surfaces	Rubber and/or plastic resilient surfacing
Planting Beds	Paper, wood or glass mulch Compost Soil amendments Recycled plastics in irrigation/hoses Rubber infill in artificial turf
Site Furniture	Fiberglass Plastic lumber for seating or planking Glass content in cast concrete planters Coal fly ash content in concrete planters Aluminum or steel fences with recycled content Plastics in play equipment, signage, fencing, waste receptacles
Utilities	Glass cullet bedding Coal fly ash in flowable fill Copper or steel pipe with recycled content
Fill	Coal fly ash Crushed in situ masonry or concrete

APPENDICES:

APPENDIX A – ARCHITECTURAL HIGHLIGHTS OF ASHLAND

Architectural Highlights of Ashland

The following section displays maps of downtown Ashland, Pleasant Street, Route 126 and Route 135. There are also photographs displayed which show architecturally significant buildings in downtown and along those roads.

Downtown Historic Buildings



Ashland, Massachusetts, Pleasant Street



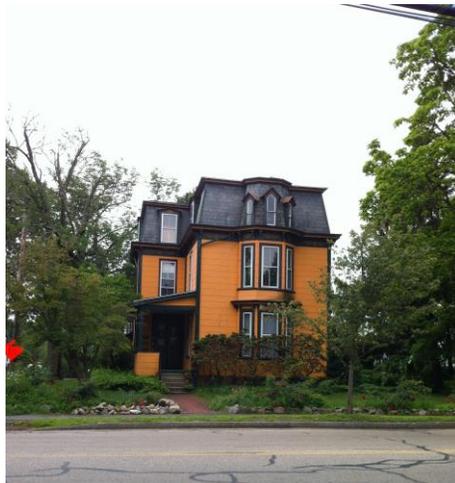
A.



B.



C.



D.

Ashland, Massachusetts, Pond Street- Route 126- Page 1

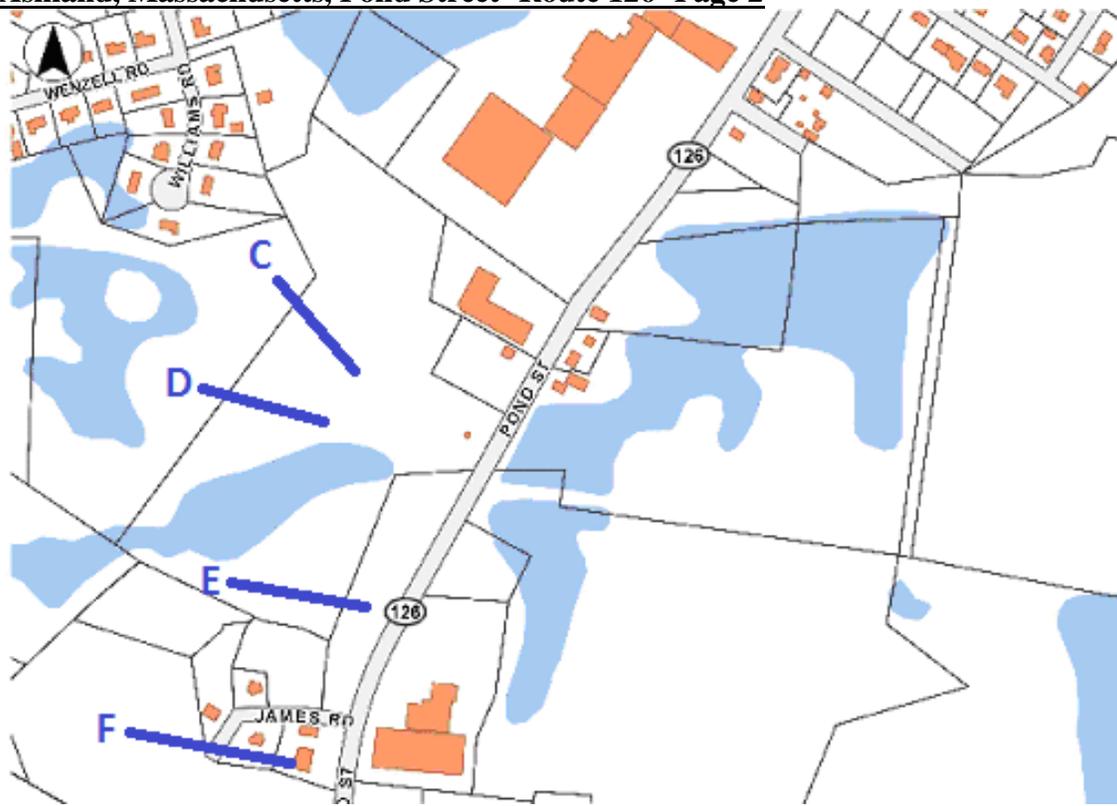


A.



B.

Ashland, Massachusetts, Pond Street- Route 126- Page 2



C.



D.



E.

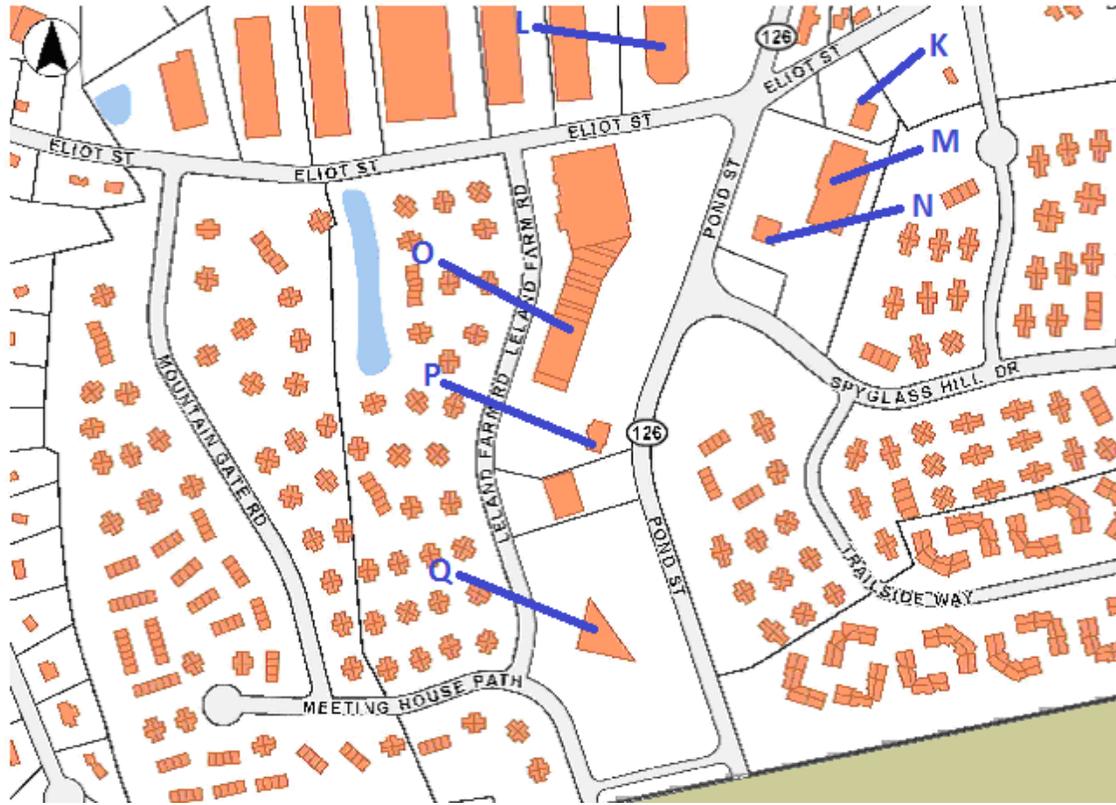


F.

Ashland, Massachusetts, Pond Street- Route 126- Page 3



Ashland, Massachusetts, Pond Street- Route 126- Page 4



Ashland, Massachusetts, West Union Street- Route 135- Page 1



A.

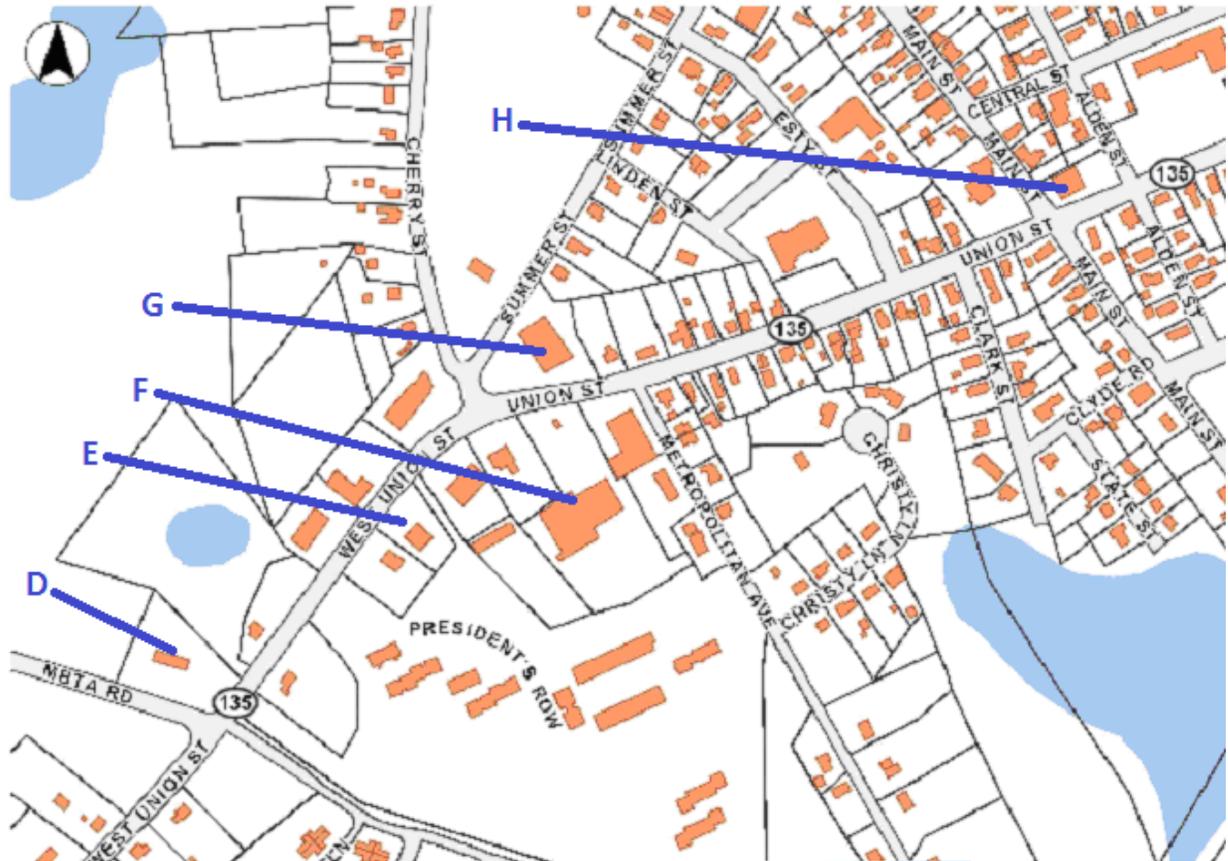


B.



C.

Ashland, Massachusetts, West Union Street- Route 135- Page 2



D.



E.



F.



G.



H.

Ashland, Massachusetts, Waverly Street- Route 135- Page 3

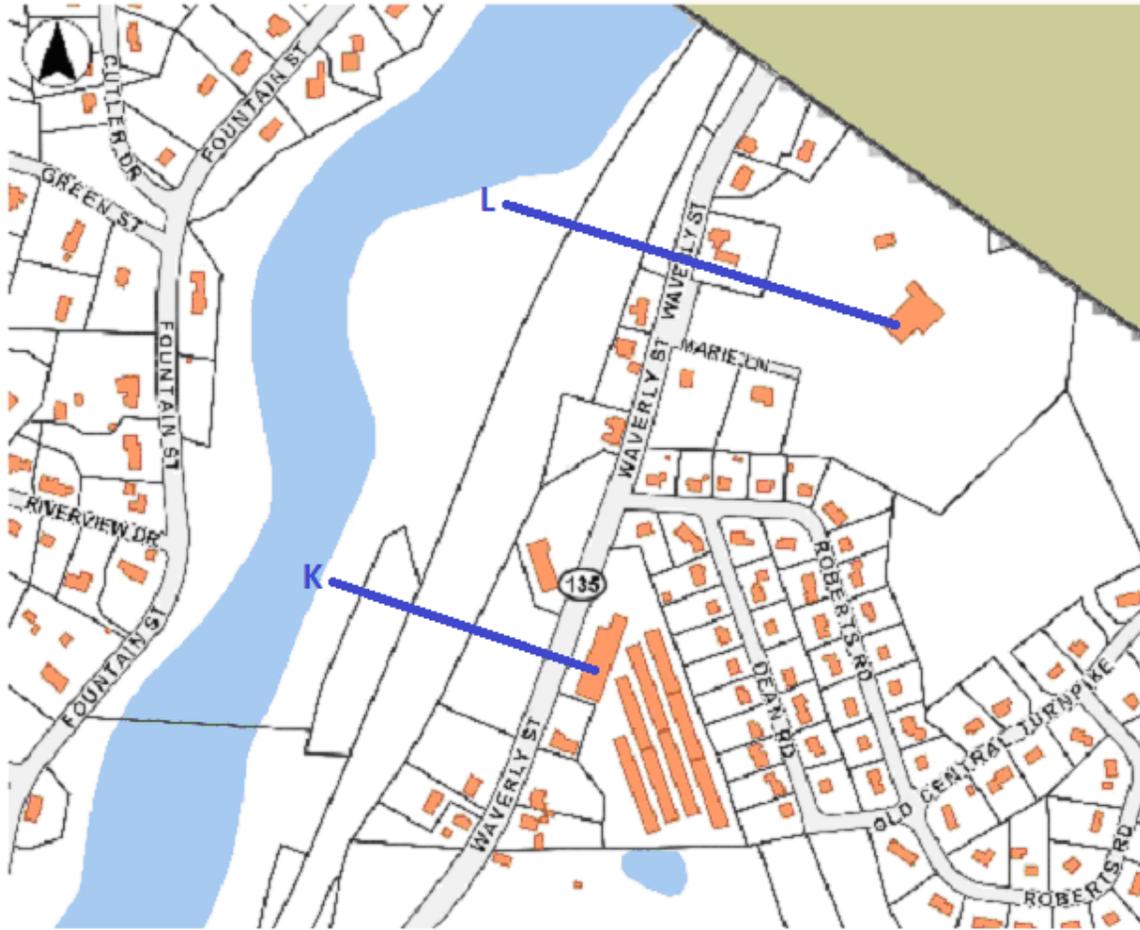


I.



J.

Ashland, Massachusetts, Waverly Street- Route 135- Page 4



K.



L.

APPENDIX B – HISTORIC PRECEDENT

Historic Precedent

As shown in the following photographs, Ashland’s architectural style and signature reflect those of a typical New England small town: buildings are of a relatively small scale, have sloped roofs or raised false front facades, have brick or wood siding, offer architectural period moldings and details, and include awnings and canopies at stores and restaurants.

Town residents have a strong desire to preserve the local architectural history, as shown by recent town projects that include the restoration of Ashland’s Town Hall and restoration and expansion of the Ashland Public Library. The Town has also recently built a new Community Center, constructed on a residential scale, and featuring clapboard siding and trim, a defined covered entrance and ornamental site lighting.



Ashland Town Hall – Main Street (1905)



Ashland Town Hall (2011)



Ashland Public Library – Front Street (1904)



Ashland Public Library (2011)



Ashland Community Center – Route 135 (2011)

Precedent-Setting Architectural Features on Renovated and New Structures:

Renovations to existing structures and new structures recently built in Ashland have held to a small town scale and have featured historic architectural characteristics including sloped or raised false front roofs, covered or canopied entrances, divided storefront glazing, brick and wood siding, awnings, and period style moldings and detailing.



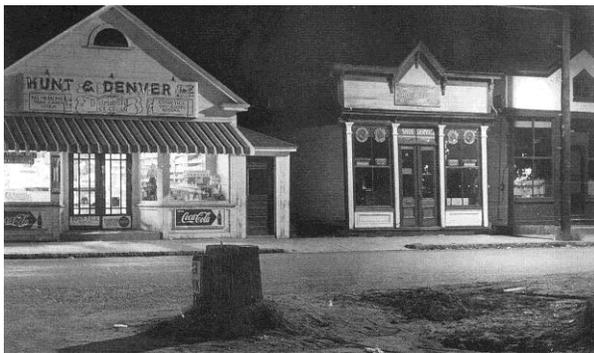
Homer Avenue (1911)

The storefront displayed above features a central entrance on the front façade, divided storefront glazing, ornamental lighting, and a canopy.



Main Street (2011)

The structure displayed above is small in scale and has a brick front with wood trim and storefront glazing. This storefront façade offers an original raised roofline with architectural molding at the roofline, and canopy window trim.



Front Street (1940)



Front Street (2011)

The buildings in the above photographs feature similar architectural characteristics in that they are all small residential scale structures with traditional sloped roofs, canopied entrances, divided glazing at storefronts and windows, wood siding, and architectural trim and details.



Summer Street (1900s)



Route 135 (2011)

The buildings in the above photographs feature similar architectural characteristics in that they appear to be small scale structures with raised false front facades, canopied entrances, divided glazing at storefronts, and architectural trim and details along the roof line.



Main Street (1940)



Route 135 (2011)



Route 135 (2011)

The buildings in the above photographs feature similar architectural characteristics even though they vary in scale. The newer structures feature traditional architectural characteristics that include sloped roofs, cupolas, awnings, brick and clapboard siding, divided glazing at storefronts, recessed or defined entranceways, and architectural trim and details.

APPENDIX C – SUGGESTED PLANT SPECIES

Suggested Sidewalk Plants

LARGER GROWING TREES		
COMMON NAME	BOTANICAL NAME	COMMENTS
American Elm	<i>Ulmus Americana</i>	Only DED resistant varieties, such as “Valley Forge”
Red Oak	<i>Quercus rubra</i>	Acorns
Pin Oak	<i>Quercus palustris</i>	Low branches and acorns
Swamp White Oak	<i>Quercus bicolor</i>	Acorns
Tupelo	<i>Nyssa sylvatica</i>	Hard to obtain large specimens
Red Horse Chestnut	<i>Aesculus x carnea</i>	Obtain seedless varieties
Green Ash	<i>Fraxinus pennsylvanica</i>	Best is Marshall’s Seedless Ash
European Linden	<i>Tilia cordata</i>	Many varieties. Susceptible to aphids and Japanese Beetles
Yellowwood	<i>Cladrastis kentuckea</i>	Extensive surface roots
River Birch	<i>Betulus nigra</i>	Obtain single stem specimens
Freeman Maple	<i>Acer x freemanii</i>	Hybrid Red Maple / Silver Maple
Kentucky Coffeetree	<i>Gymnocladus dioicus</i>	Slow growing
Honeylocust	<i>Gleditsia triacanthos</i>	Many cultivars. Shademaster might be best
Zelkova	<i>Zelkova serrate</i>	Form is similar to American Elm
London Plane	<i>Platanus x acerifolia</i>	Exfoliating bark
European Hornbeam	<i>Carpinus betulus</i>	Can get columnar varieties for narrow spaces
Pignut Hickory	<i>Carya ovata</i>	Round nuts
SMALLER GROWING TREES		
COMMON NAME	BOTANICAL NAME	COMMENTS
Japanese Tree Lilac	<i>Syringa reticulata</i>	Fragrant, attractive to honeybees

Korean Mountain Ash	<i>Sorbus alnifolia</i>	Colorful fruit
Kousa Dogwood	<i>Cornus kousa</i>	Late May flowering
Flowering Dogwood	<i>Cornus florida</i>	Plant in morning sunny areas
SMALLER GROWING TREES CONTINUED		
COMMON NAME	BOTANICAL NAME	COMMENTS
Rose of Sharon	<i>Hibiscus syriacus</i>	Late summer flowering. Attractive to humming birds
Crabapple	<i>Malus</i> sp.	Many varieties. Adams might be best along sidewalks
Amur Maple	<i>Acer ginnala</i>	Requires frequent pruning
Redbud	<i>Ceris candensis</i>	Many have winter dieback
Paperbark Maple	<i>Acer griseum</i>	Exfoliating bark
Hedge Maple	<i>Acer campestre</i>	Dense branching. Little fall color
Callary Pear	<i>Pyrus callaryana</i>	Many cultivars. Avoid Bradford
Kwanzan Cherry	<i>Prunus serrulata</i>	Vase shaped, profuse pink flowers
English Hawthorn	<i>Crataegus laevigata</i>	Crimson Cloud is thornless
PLANTS FOR HEDGES AND BUFFERS		
COMMON NAME	BOTANICAL NAME	COMMENTS
NOTE: Should not plant shrubs higher than 32" within 10 feet (10"-0") of driveways or intersections.		
Lilac	<i>Syrnga vulgaris</i>	Many varieties. Needs sun for blooming
Rosebay Rhododendron	<i>Rhododendron maximum</i>	Native. Large growing
Red Cedar	<i>Juniperus virginiana</i>	Native, salt tolerant evergreen
Arborvitae	<i>Thuja occidentalis</i>	Evergreen
Bayberry	<i>Myrica pensylvanica</i>	Native, salt tolerant semi-evergreen
Rugosa Rose	<i>Rosa rugosa</i>	Salt tolerant, withstands drought, thorny
GROUND COVERS FOR SUN		
COMMON NAME	BOTANICAL NAME	COMMENTS
NOTE: Consider height, aggressiveness, walkability, drought and salt tolerance.		
Bearberry	<i>Arctostaphylos uva-ursi</i>	Small, trailing evergreen, 7" high, pinkish-white flowers in May, Red berries in Fall
Creeping Juniper	<i>Juniperus horizontalis</i>	
Lowbush Blueberry	<i>Vaccinium angustifolium</i>	Deciduous shrub to 2'-0", small white-pink flowers

		May-June, Blueberries June-August, red fall foliage, native, can take part shade, likes dry soil
GROUND COVERS FOR SUN CONTINUED		
COMMON NAME	BOTANICAL NAME	COMMENTS
NOTE: Consider height, aggressiveness, walkability, drought and salt tolerance.		
Sedums		Low-growing, succulent plant that tolerates hot, dry conditions and poor stony soils. Many varieties with different leaf and flower colors.
Thymes	Thymus praecox, Thymus serpyllum, etc.	Aromatic evergreen ground cover, small flowers late spring/summer (depending on variety), good for dry infertile soil. Attracts bees.
GROUND COVERS FOR SHADE		
COMMON NAME	BOTANICAL NAME	COMMENTS
Wild Ginger	Asarum canadense	Deciduous native with large heart-shaped leaves, moderately moist soil.
Hay-scented Fern	Dennstaedtia punctilobula	Lacy, yellow-green leaves, dry soil, native.
Green and Gold	Chrysogonum virginianum	Yellow flowers May-September, 8", can take full sun, moist soil.
Creeping Phlox	Phlox stonifera	Pink-violet flowers, May, 6", moist soil.

APPENDIX D – FUNDING AND LOAN ASSISTANCE

This appendix lists funding options for individual businesses that could potentially assist with design improvements.

- 1) Local banks may offer loans at reduced interest rates for businesses. Check with individual banks for such programs.
- 2) The **Massachusetts Business Development Corporation** (www.mass-business.com) administers funding programs for businesses. Programs include:
 - SBA 504 Term Loans for businesses with a net worth of \$6 million or less and \$2 million or less after tax profits. The loans can be used for renovations.
 - The Capital Access Program is geared toward small businesses that need credit enhancements to start, expand, or continue their business.
 - Loans are available to businesses that are owned by women or minorities or that predominantly employ women or minorities.
 - The Business and SBA 7(a) Loan is available to larger businesses for real estate, growth needs, long-term working capital, and other needs. For more information, see their website
- 3) **MassDevelopment** (www.massdevelopment.com), which provides financial tools and real estate expertise, offers real estate loans to businesses that can be used for renovations.
- 4) The federal **Small Business Association** (www.sba.gov) offers numerous programs, most of which provide guarantees for loans from other entities.

For funding opportunity updates, consult with the funding agency.

APPENDIX E – DESIGN REVIEW PROCESS

Applicant’s Process for Design Review

The first step, after reviewing these guidelines, is to obtain a copy of the Ashland Zoning Bylaws. Make sure that you understand all applicable zoning requirements and these design guidelines. Hiring a professional architect, landscape architect and sign designer will help you create a good design and appropriately navigate the design review process.

The schedule for design review is discussed in Section 9.6.6 of the Zoning Bylaws.

Documents that should be submitted for Design Review include:

- A project Site Plan showing all site information, including but not limited to site signage, utilities, parking layout, light poles, bollards, loading and delivery areas, dumpster locations and an accurate building footprint with a roof plan that shows screening materials and structures for mechanical equipment.
- A project Landscape Plan, drawn at a scale of 1” equals 10’.
- Building Elevations and Rendered Presentation Drawings for all sides of the building that accurately show materials of choice and color.
- Material cut sheets on exterior building materials and site signage.
- Landscape plan and schedule of plantings with planting detailing.
- Perspective streetscape including adjacent structures.
- Photographs of the site’s existing conditions and surrounding properties.

If you are unsure as to whether you need to submit these items, consult with the DRC early in the process.

The DRC will review the issued documents during its public meetings and then forward its report and recommendations to the Planning Board. Check the Town of Ashland website for future Design Review Committee meeting times and schedules at www.ashlandmass.com

The DRC is required by the Ashland Zoning Bylaws to follow these guidelines, but since the guidelines cannot accommodate every situation, the DRC can extrapolate their intent in order to address unanticipated circumstances. Regardless, the burden remains on the applicant to demonstrate that the proposed design would enhance the Town of Ashland.

The applicant may appeal the decision of the DRC to the Planning Board at the public site plan review meeting. The applicant will provide the Planning Board with necessary documentation to support the appeal, such as precedence studies, material boards and photographic presentation boards. The final design outcome will be determined through the appeal process and mandated by the Planning Board.

Compliance with the Zoning Bylaws and Other Regulations

These guidelines do not supersede the Ashland Zoning Bylaws or other applicable local or State regulations.

APPENDIX F – APPLICATION FORM

ASHLAND DESIGN REVIEW COMMITTEE

In accordance with the Ashland Zoning Bylaws, the Ashland Design Review Committee (DRC) shall review applications for projects that are subject to the provisions of the Town of Ashland Design Review.

It is the responsibility of the applicant to distribute five (5) copies of the project documents that require design review to the members of the DRC. For convenience, the applicant shall submit the review documents in a preliminary distribution package in PDF format to the Planning Board office one (1) week prior to the scheduled design review meeting date so that the DRC members can review the information and become familiarized with the project. The applicant shall make sure that an original copy of the PDF is filed with the Zoning Board of Appeals office at least two (2) weeks prior to the hearing date.

Applicant Name _____ Tel. No. _____
Address _____

Address of Proposed Work _____

Description of Work _____

To whom it may concern, the following documents are being submitted for your review:

No. of Copies	Plan(s)	Form(s)	Description

Received By: _____ Date: _____

Planning Board Office 508-881-0100 x651 or planning@ashlandmass.com

Reviewed by ASHLAND DESIGN REVIEW COMMITTEE members:

Member Name _____

Member Name _____

Member Name _____

Member Name _____

Member Name _____