Portland Main Street

Design Handbook

A guide to neighborhood commercial district revitalization

Portland Main Street

PDC
PORTLAND DEVELOPMENT COMMISSION

COVER PHOTO:
Bike at Buckman Farmer's Market provided courtesy of Amy Nieto

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Portland Main Street Program

The Portland Main Street Design Handbook is not enforced codes or regulations but are helpful design tools for district improvements. Photo courtesy of PdxHistory.com

A strong example of how successfully designed storefront components make for a lively streetscape (NW 10th Ave and Everett St)

Goals & Guiding Principles

The Portland Main Street Design Handbook encourages good design by addressing issues that business and property owners face in planning commercial and retail improvements. The principles give advice on how to improve the unique physical environment of commercial neighborhood districts. This includes storefront design, streetscape improvements, sustainability considerations, and maintenance of buildings and the public way.

These principles do not supersede the City of Portland's planning and zoning codes nor any of the pre-existing design guidelines for city-defined districts. More specifically, they provide the framework for each District's Design Committee to develop their own set of principles that address issues related to the unique character of their community.

Portland Main Street works to increase awareness about the value of good design decisions to maintain the unique character of our business districts, by providing a support network for district project planning and implementation.

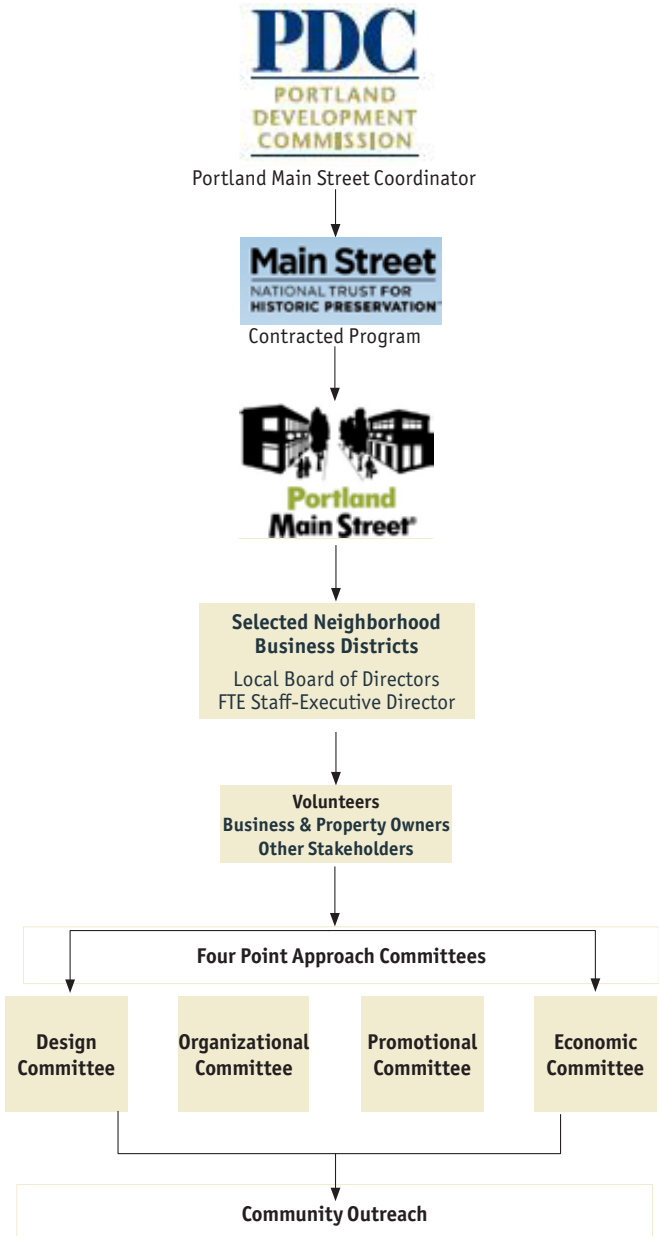
What is Main Street?

The national Main Street Program was developed by the National Trust Main Street Center, which is under the auspices of the National Trust for Historic Preservation. It uses a preservation-based strategy, the Four Point Approach, for rebuilding the places and enterprises that make sustainable, vibrant,

and unique communities. The City of Portland has adopted the program as part of Portland Development Commission's Neighborhood Economic Development (NED) Strategy which strives to support the creation of thriving commercial areas, successful neighborhood businesses, and equitable access to quality jobs. The Portland Main Street Program promotes local businesses providing essential neighborhood goods and services as a means of enhancing the local economy and image of the neighborhoods. Portland's neighborhood business districts selected for designation as a Portland Main Street District are also expected to place an emphasis on incorporating into their work, sustainability practices, projects, and programs that fall within the three pillars of sustainability, 1) environmental, 2) social, and 3) economic.

The Main Street Approach advocates a return to community self reliance and local empowerment. The organizational model is based on building broad based community support and tapping the collective wisdom of partners, with volunteers serving on a Board of Directors, and four committees: Design, Economic Development, Promotion and Organization. With a full-time paid Executive Director coordinating Main Street District efforts, volunteers focus on making incremental and comprehensive changes to create an economically thriving commercial center that can sustain itself into the future.

While designated Portland Main Street Districts are chosen through a competitive selection process, all commercial districts may benefit from organizing revitalization efforts around the performance standards of Main Street.



This flow-chart illustrates organization of the Portland Main Street Program

Population comparison 1900 - 1920

Portland, Oregon
1900: 90,000 people
1910: 207,000 people

Los Angeles, California
1900: 102,000 people
1910: 320,000 people

San Francisco, California
1900: 347,000 people
1910: 417,000 people

Seattle, Washington
1900: 80,000 people
1910: 230,000 people

Vancouver, British Columbia
1900: 20,000 people
1910: 100,000 people

An early Portland photo of SW Naito Blvd, looking south. Courtesy of Oregon Historical Society

Portland's Unique Neighborhoods

Portland played an important role in the history of development of the Northwest, and this early success impacted how the City is shaped today. In 1905, the city hosted the Lewis and Clark World's Fair, which brought worldwide exposure and coincided with a boom in growth. Portland more than doubled in size between 1900 and 1910, rivaling Los Angeles and Seattle for runner up to San Francisco in west coast dominance. The result of this early prominence is a wealth of historic buildings and entire districts that endure to this day. The Rose City's early settlement patterns were largely driven by the development of its streetcar system which created small town centers and pedestrian driven environments (spoke-and-hub plan). The limited transportation in the pre-automobile era resulted in natural main streets, each with independent identities and all the characteristics of the walkable "20-Minute Neighborhood". However, the rise of the automobile led to the decline of centralized transportation, increased development in outlying areas, and the atrophy of inner city commercial districts. Now a core goal of the City of Portland Bureau of Planning and Sustainability, the "20-Minute Neighborhood" is in the urban DNA of these early town centers and is a huge asset when working towards livable sustainable communities.

When considering our community wide goals for sustainability, it is also important to realize how existing building stock can help us realize those goals. Many of these buildings were designed before sophisticated artificial lighting and mechanical systems were available. Because of this, they relied on natural

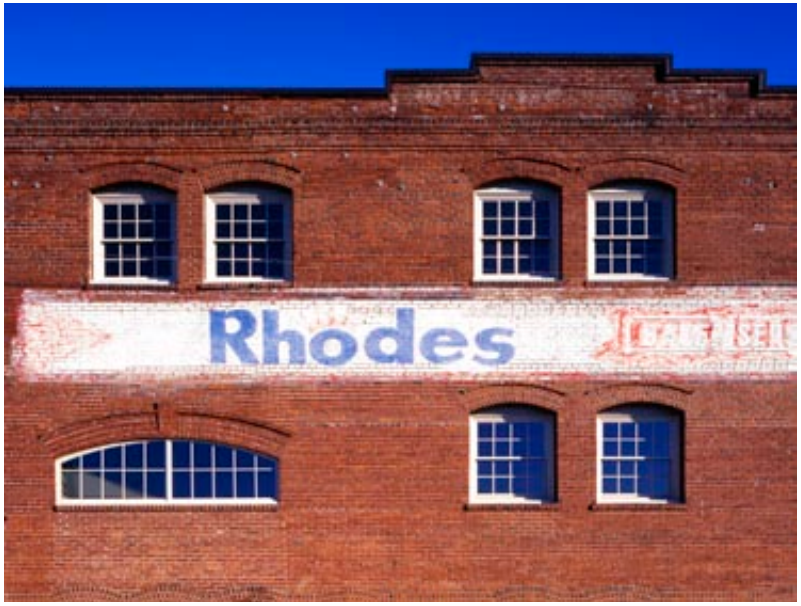
day lighting and ventilation strategies to provide the greatest level of comfort and efficiency available to them. These strategies helped give the unique look to the buildings we know and love today. Equally important to recognize is the incredible amount of embodied resources housed in these buildings and districts. With a little investment and effort, we can both preserve these treasures and make them perform to modern standards of efficiency.

Moving forward, Portland Main Street looks to preserve the authenticity of the districts by protecting, maintaining and energizing their existing resources; strengthen the continuity of the street by infilling missing buildings with new structures that are sensitive to the neighborhood identity; and understand the key components of successful storefronts so that each business improvement will contribute to the whole District's economy.

Organization of the Handbook for the Community User

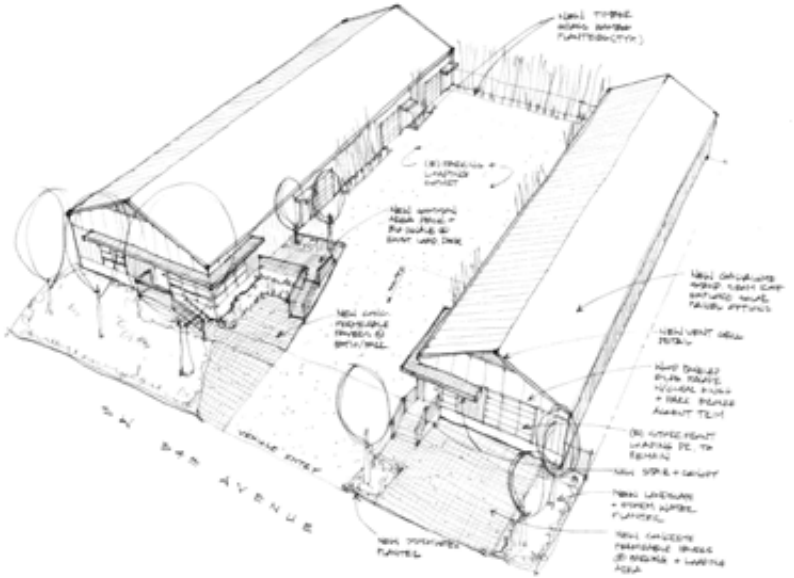
The intent of this document is to offer a base of design information to business and property owners who have little experience in making improvements to their built environment. These principles will stress protecting the authentic character of existing buildings. By enhancing architectural elements, the original neighborhood character can be maintained while adapting to new business types.

There are many factors to consider when beginning a project. This book offers guidance on the resources, processes and



This original wall signage was left intact to strengthen a sense of authenticity to the building despite a major 21st century restoration. (NE 11th Ave and Flanders St)

Seeking out an architect can help to identify important improvements to make and help set project scope priorities.



Multnomah Craft Commons Schematic shows improvements being made to the exterior of the building and the outdoor spaces.

Multnomah Craft Commons Completed Project (SW 34th Ave and Canby St)

agencies involved in the various undertakings your district is actively improving. Where the scope gets too large or technical information become too complex, this Handbook refers you to additional resources to address your needs.

Storefront Design chapter emphasizes the importance of the façade as a presentation of your business to the public. It addresses the components of the storefront and give examples on how to improve each part of the storefront.

Streetscape focuses on the public streets and walkways that communicate the character of your district. These public elements of Main Street are vital to its success but often require community wide collaboration to achieve unity. Larger group planning and organization will be necessary to make these public improvements. Therefore, this document focuses on broad-stroke principles and provides important resources to find more detailed guidance.

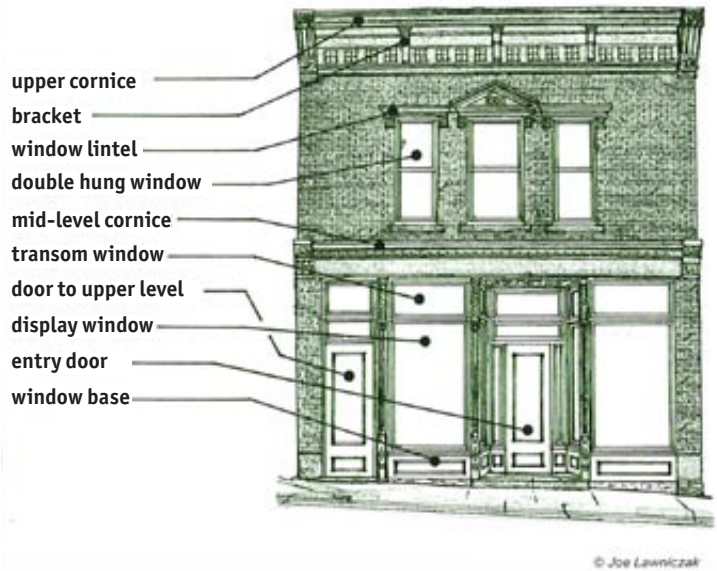
Sustainability introduces simple common-sense improvements to help conserve energy and resources. Larger more technological improvements will be mentioned, with additional resources providing more specific information.

New Development introduces the process of integrating a new building into an established fabric of buildings. The Handbook focuses on helping the potential developer understand basic planning considerations. A new construction project will require assembling a team of professionals to guide them through the complex process.

Storefront Design Principles

Sketch of a Main Street facade with re-stored storefront windows and new corner signage

Warehouse building converted into a successful storefront (NE Sumner St and MLK Blvd)



The storefront, arguably the most important segment of a commercial building, is often the portion that pedestrians and drivers notice the most.

The Importance of the Storefront

The storefront establishes the visual relationship between the interior of a shop and the sidewalk, and presents the character of a business. Framed by the building façade and structure, the storefront is transformed in time with each new owner. Its design is crucial to successful advertising and merchandising. Storefronts activate and unify the street and should be visually integrated with the building itself.

Rebuilding Storefronts

Over the years, storefronts frequently undergo many transformations, some better than others. Problems arise in storefront design when the storefront fails to remain within its defined opening. This makes the storefront appear "pasted on" the front of the building. Reducing the amount of glass in the storefront is another common problem. With a little research and investigative digging, it may be possible to restore a storefront to its original design or recreate it to meet the goals of the district.

Historic photos and original construction drawings are invaluable for defining original proportions and details. The basement or ceiling may show original layouts, such as a recessed bay for the entry door. Decorative architectural features may still exist, hidden behind more recent "improvements". Finding knowledgeable consultants to help with this process can be helpful.

Modern buildings with contemporary materials can still utilize many of these traditional elements in a new storefront design.

A new design should be simple and straightforward with minimal historical ornament. A simple design will ensure that the new storefront is compatible with traditional storefronts in the district. Understanding the characteristics of good storefront design is a key element for successful revitalization programs. Incorporating these design elements into storefront projects will be successful whether they are made of traditional materials and construction or with more contemporary techniques.

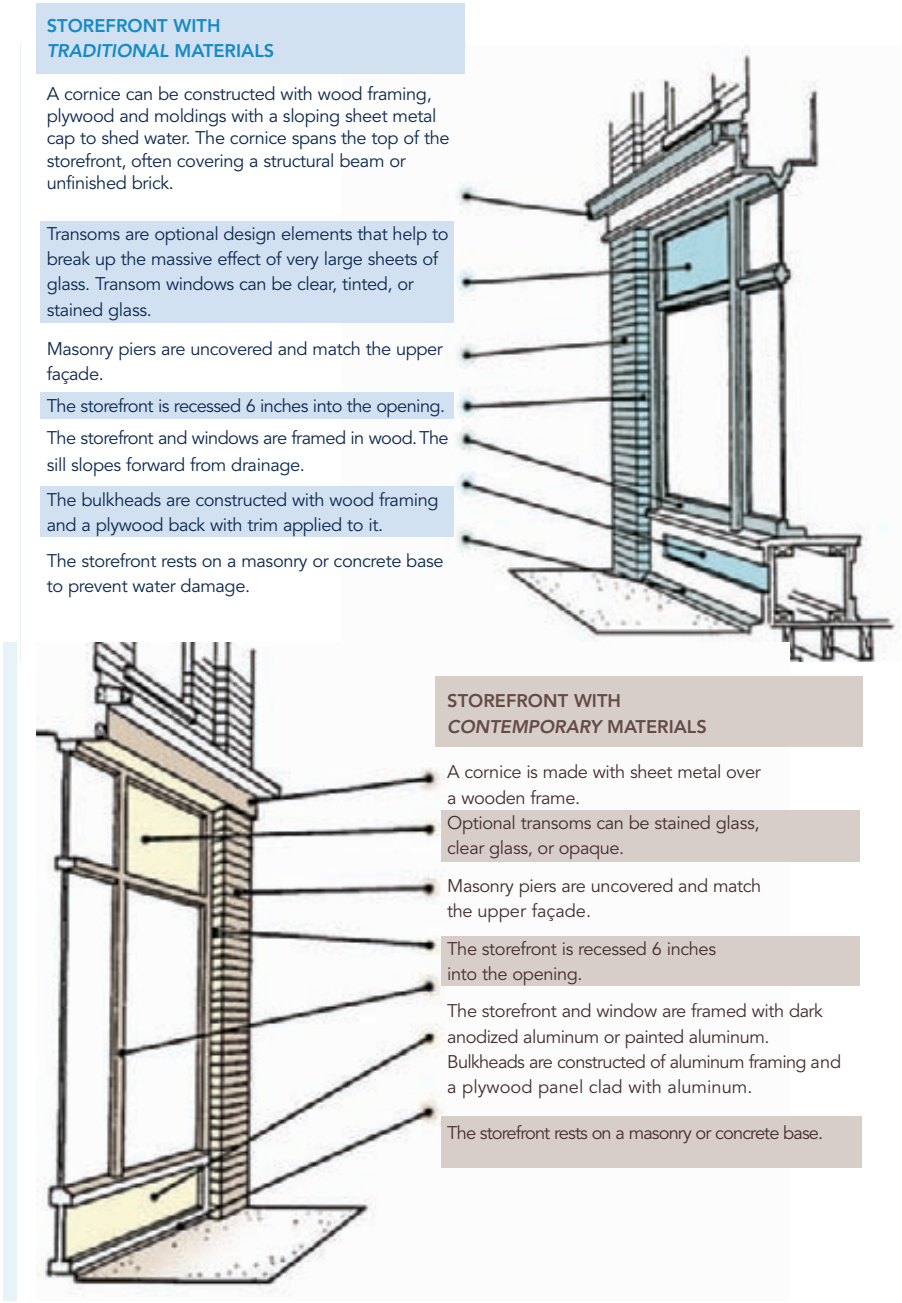
The first step to renovating a storefront is to identify the parts of a building. Each piece contributes to the overall image of a business. Consistency within the storefront and the neighboring storefronts helps provide continuity in the streetscape.

Storefront Bays

Most traditional commercial buildings had a well-defined opening that the storefront filled. The storefront is defined by the vertical piers on each end, a storefront cornice (sometimes decorative, sometimes just a beam), and the sidewalk. The storefront is usually slightly recessed within this opening. The storefront bay is an area typically one story in height. Construction and improvements which respect the framework of the building produces clear, clean results.

STOREFRONT BAY GUIDELINES

1. Storefronts should fit within the original storefront opening(s).
2. Replace missing or damaged storefront elements with high quality, durable materials.



The renovated industrial building has strong easy to read storefront bays (SE 11th and Division St)

Awnings fit within storefront bays allowing the historic details of this building to be clearly visible (SW 2nd Ave and Ash St)

3. Pay attention to continuity among individual storefronts, the entire building façade, and neighboring properties. Solid areas within a storefront frame need a clear distinction between the frame and infill, with a defined change in color, material, or texture.
4. Replacement materials should convey the same visual appearance as existing materials.
5. Make alterations that are compatible in scale, size, material, or color.
6. New signs, awnings or other elements should not obscure or damage original features.
7. Original windows and doorways should be repaired and maintained whenever possible.
8. Avoid changing a storefront's historic features or removing historic material.
9. Avoid introducing architectural details not related to those typical of the building or district.

Window Base

The window base supports and protects the display window from damage and weathering. It protects storefront windows from hand trucks, shovels, bicycles, and other hazards of daily commercial life. The base also raises the display area to a more easily viewed height. Typical materials include wood, marble, brick, concrete, and ceramic tiles. The window base is often simplified in new storefronts; however, it should retain the storefront line and proportions.

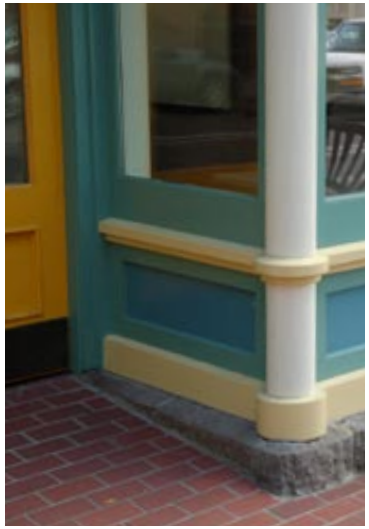
Note: Safety glazing is required for glass panels that are installed in doors, adjacent to doors and less than 18" from the ground. There are other safety glass requirements, refer to the Oregon Building Code for more details (see Appendix).

WINDOW BASE GUIDELINES

1. Design and construct replacement window bases consistent with a building's scale, size, and original materials.
2. If the window base is missing, the height of the storefront window base should be consistent with adjacent storefronts to give a sense of continuity.
3. Retain, maintain, repair, or uncover original materials where possible. If unable to do so, replacement materials should match or exceed the quality of the originals.
4. Use highly durable and easily maintained materials at the base of a building.

Doors

There are several door types in a commercial building. Entries must comply with all zoning and accessibility requirements. Recessed entries provide a sense of protection and transition for the customer. Recessed entries also prevent doors from swinging onto sidewalks. Clearly marked on the storefront, a recessed entry provides a sense of welcome and creates depth on the building's surface.



Wood window base on a durable stone base. The stone or concrete base provides extra protection from the water on the sidewalk.

Contemporary storefront system example with aluminum-clad wood framed windows and integrated wood window base.

Recessed entry with natural wood doors enhances the storefront. (NW 9th Ave and Davis St)

Garage door opens out onto patio seating strengthening the connection to the pedestrian zone. (N. Mississippi)

Contemporary carriage doors hark back to this fire station's original doors. Photo by Sally Painter. (SE Stark St and 11th Ave)

Contemporary buildings might allow roll-up doors, particularly restaurants or galleries. While these doors may not be compatible with all business types or commercial districts, they can contribute a strong street vitality to businesses where the passerby can easily spill into an interior space.

> Note: For storefronts that are being substantially rebuilt, the Portland Zoning Code, Oregon State Building Code and the Federal Americans with Disabilities Act have specific requirements for entry vestibules and doorways. (See Appendix)

DOOR GUIDELINES

1. Primary entries should be prominently located on the main street. Loading and service entrances are best located on the side or rear of a building where possible.
2. Doors with large glass panels provide visibility into a business.
3. New doors should be compatible with the building's overall character.
4. Door material should match the original window sash material. Wood is preferred; it is durable, has more detail and can be painted and repaired easily.
5. Avoid adding new or secondary entrances that are incompatible in size, scale, or material.
6. Avoid enclosing old entrances with solid materials. If the door is no longer in use, secure it and leave for future use.

7. Avoid blocking one side of a double door entry with merchandise. Consider constructing doorways that swing out onto sidewalks.
8. Maintain transparency. Avoid converting glass door panels to opaque materials. Use temporary applied films to give privacy, if necessary.

Display windows

Display windows establish the visual relationship between the interior of the shop and the pedestrian on the sidewalk. They are the character-defining element of the building. The windows original size, division, and shape should be preserved where possible. Preserving these original windows is very important to the integrity of the building. The original wood windows on a commercial building are often made from high quality materials.

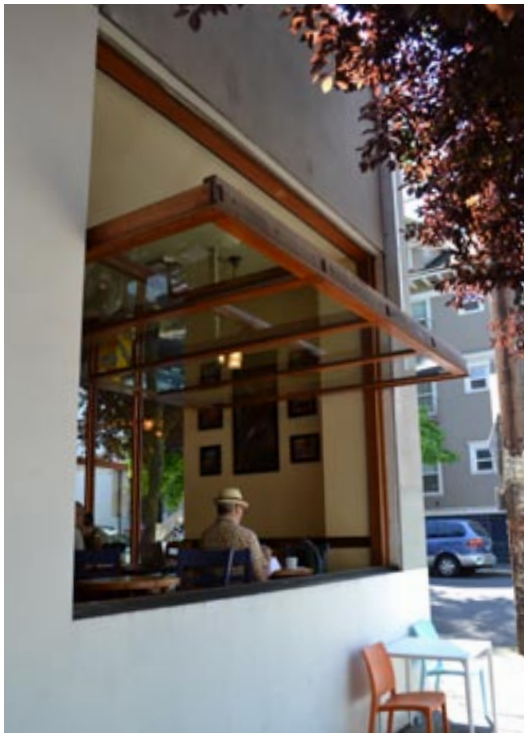
Display windows should be maximized in order to make businesses and their products appealing to customers. They are a simple, cost-effective way to promote products and market services.

> Note: Most commercial district zoning requires windows be at least 50% of the length and 25% of the ground level area. Refer to Portland's Zoning Code Title 33 Ground Floor Windows for more details (see Appendix)

DISPLAY WINDOW GUIDELINES

1. Use transparent glass. Replace dark, tinted or textured glass with clear glass.

Main Street building sketch showing storefront entrance and transom windows



A display window cleverly converted to a large pivot window gives a sense of intimacy and protection like an awning. The window also energizes the street connection (NW Flanders St and 21st Ave)

Historic storefront with painted wood windows and recessed entry (SW Oak St and 1st Ave)

2. Replacement windows and architectural moldings should have similar scale and shape as the originals. Match them exactly, especially when only a part of the window system is being replaced.
3. Integrate display lighting with your window displays as an extremely simple way to present your business and merchandise to evening foot and car traffic.
4. Create a cohesive storefront appearance by aligning window heights and unifying window sizes.
5. Where offices occupy former retail spaces, window displays and blinds are preferred to removing windows. Avoid covering a display window or filling the opening with non-transparent materials.
6. Use wood frame and sashes in traditional storefronts rather than aluminum frame windows; wood can be painted, has more detail, and is durable. Aluminum frame windows are best suited for more contemporary and industrial buildings.
7. Provide creative, interesting window displays.
8. Keep windows clean.
9. Avoid inserting new ceilings which block windows.
10. Avoid small-paned windows unless characteristic of building's architectural style or original design.

Note: Minimum transparency requirements for storefronts and windows are regulated by the Portland Zoning Code. Refer to Neighborhood District Regulations for the specific requirements. Additionally, Oregon State Building Code requires all glazing adjacent to sidewalks be tempered safety glass. (See Appendix)

Transom Windows

Transom windows are the horizontal band of small windows above display windows and doors. Historically, they provided ventilation and allowed daylight deep inside the building. On north-facing storefronts, omit awnings to allow as much daylight as possible. As a design feature, transom windows are an important element in the proportions of the storefront. Often during alterations transom windows have been hidden by dropped ceilings or covered on the exterior.

TRANSOM WINDOW GUIDELINES

1. Retain transom windows even when hidden by awnings, as they are visible when customers approach or when awnings are rolled up or removed.
2. Retain the original pattern of transom windows.
3. Avoid obstructing the transom glass with non-transparent materials.
4. Make the transom window frame of a compatible material and design with that of the display windows and door frames. Match moldings and details.
5. A dropped ceiling should have a raised soffit at the storefront in order to preserve the full window height and bring light inside.

Contemporary storefront with lots of display lighting (NW 23rd Ave and Hoyt St)

Contemporary storefront transom windows (NE Alberta St and 14th Ave)

Elegant historic storefront with transoms above and wood window base gives a great sense of transparency to the interior. Note the operable transoms. (SW 9th Ave and Burnside St)

Sign Band (Frieze)

The sign band or frieze is the horizontal segment of the storefront located above the display window and below the second floor windows, storefront trim, or building cornice. In many

Sign contained in the sign band (SW 2nd Ave and Ash St)


Storefront with nicely proportioned transom windows. (NW 23rd Ave and Johnson St)

Blade sign
(NW 9th Ave and Davis St)

storefronts this area is designated by a distinct band of masonry, plaster, wood, or other material and is the typical location for business signs. As part of general maintenance, the sign band should be kept clear of extraneous pieces of wood or metal so that new signs can be mounted flush against the surface. This measure prevents weathering of signs and minimizes nesting places for birds.

SIGN BAND GUIDELINES

1. Fit signs within the original space of the sign band. Avoid extending beyond the band area.
2. Attach awnings to the building at or below the lower edge of sign band.
3. Where building detail does not include a traditional sign band, locate signs in a consistent location on adjacent storefronts.

Signs

A well-designed sign is one of the most important elements of a storefront. As publicly displayed information, it reflects the personality of a business. While locating and advertising a business, signs also add visual interest to the streetscape experience and contribute to the character of the neighborhood.

Signs are a powerful graphic tool. Consider how your patron will see the sign. "Bigger and more" is not always the best strategy. An automobile passenger can only perceive an average of four words or symbols on a storefront, and this number decreases according to the total amount of signage on adjacent

buildings. Large, repetitive messages contribute to visual clutter and results in the viewer blocking out information.

Clear, well-designed signs best market a business through quick impact. In the context of a streetscape, a well planned storefront is a sign in itself and can effectively communicate business character. Small blade signs are most effective for pedestrians on the sidewalk. Wall mounted signs are best seen from across the street. A combination is ideal.

Note: The Portland Zoning Code and Neighborhood District Regulations define the size, type and placement of signs . Refer to Zoning Regulations Title 32 and Oregon Building Code Chapter 32 - Encroachments into the Right of Way. (See Appendix)

SIGN GUIDELINES

1. The scale of a sign should consider the design of the storefront, building and neighboring buildings.
2. Graphics and lettering should be well designed and easily legible.
3. Place signs in clear, architecturally defined areas on windows, awnings, or suitable wall spaces such as the sign band.
4. Blade signs or projecting signs perpendicular to the sidewalk, are very effective when scaled for pedestrian use.
5. Iconic, graphic, or three-dimensional signs are great variations when scale is appropriate.

Contemporary storefront back lit lettering creates an elegant halo effect to silhouette signage on the building's sign band. Photo by Sally Painter. (NW 9th Ave and Flanders St)

High contrasting colors are important to a successful pin-mounted letter sign.

Icon signage can contribute to the overall character of the district

Blade sign with external lighting

Blade sign with neon lighting

Blade sign

Blade sign

Blade sign

Marquee sign

6. Remove old and non-functional signs and brackets.
7. Use durable material types such as painted MDO plywood, metal, or molded letters.
8. Wall signs should be painted on surfaces other than the natural building material. Paint signs on a durable sign material that mounts directly to the wall.
9. Restore historic signs if they are adaptable to business image.
10. Use opaque letters or letter cut-outs that are illuminated from behind to create elegant halo signage.(These are different from internally illuminated plastic letters, which are not acceptable in historic districts).
11. Iconic neon signs are acceptable and encouraged when they bolster the neighborhoods identity.
12. Painted window signs provide an additional level of information about the business, such as store hours or types of services.
13. Window signs should not be excessive as to obscure transparency into the store.

14. Sign lighting should be focused and cropped to avoid glare and light pollution to meet "dark sky" goals for sustainability.
15. Temporary signs and cloth signs are to be short-term and event specific so as to not convey an image of deterioration or a poorly maintained business.
16. Consider astronomical clock timers combined with photo cell sensors for seasonally sensitive on/off switching that is consistent and energy efficient.
17. Avoid high-intensity sign lights or excessive external illumination of signs.
18. Avoid obscuring or removing building elements such as windows, cornices or decorative details to accommodate signs.
19. Avoid internally-illuminated or backlit plastic sign boxes.

Awnings

Awnings cover the area between the sidewalk and building. They protect pedestrians and shelter display windows from sun and precipitation. Awnings add depth to the building surface and embellish entrances. Awning locations should respect the storefront framework in order to maintain a visual connection with upper floors and reinforce the rhythm of the streetscape. When used in appropriate locations, awnings can be an effective investment, such as on south facing storefront locations to minimize heat gain in hot weather.

Remodeled storefront with clad windows and steel awning. Wood detail provides warmth to the underside. Photo by Rick Keating. (NW 12th Ave and Glisan St)

Exposed awning with signage (NW 22nd Ave and Davis St)

Retractable awnings are flexible especially for south and north facing glazing. (NW 23rd Ave and Flanders St)

Double wooden south-facing canopies provide shade and weather protection for both windows and people. Photo by Stickley Photo. (NE 41st and Halsey St)

Awning example of maximizing transom day lighting while giving extra rain protection at the entry (NW 23rd and Irving St)

Fabric awning provides shading on south and west facades (NW 23rd Ave and Savier St)

Retractable awnings give flexibility to weather and day lighting (SW 2nd Ave and Ash St)

Even though awnings may appear temporary in nature, they can affect the overall image of the building. Proper maintenance and repair of awnings are important in conveying a positive visual image. While awnings that incorporate signs or graphics may be cost effective initially, long-term maintenance as information changes or as awnings fade is potentially problematic and unattractive.

Note: The Oregon State Building Code has restrictions for projections into the Right-of-Ways. Consult Chapter 32 of the Oregon Building Code for detailed information (See Appendix)

AWNING GUIDELINES

1. Use durable materials, like metal, glass, canvas, or wood. Avoid vinyl or plastic.
2. On multi-storefront buildings, separate awnings should be located within each storefront bay so that the building frame and details are revealed.
3. Awnings with open ends are preferred and are less susceptible to vandalism.
4. Both retractable and fixed type awnings are acceptable.
5. Awnings on a single building should be consistent in size, profile, and location.
6. Keep awning shapes simple. Avoid unusually shaped awnings or bull nose awnings that are not compatible with existing architectural forms.

7. Avoid excessive signage on awning. If necessary, signage should be located primarily on the valance.
8. Avoid concealing architectural details with continuous or oversized awnings.
9. Consider under-awning lights to illuminate the sidewalk and storefront. Avoid back lit or internally illuminated awnings.

Lighting

Lighting illuminates the businesses, creates an evening ambiance, and discourages crime. Lighting creates a feeling of security for the passerby and is an important factor in a commercial setting. A variety of light sources and locations should be considered in carrying out storefront renovations. Sign lights, display window lights, architectural lighting, and general area lighting is encouraged to advertise the business, highlight building features, and to illuminate dark corners of the property or street. In some cases, where general street lighting is sufficient, a storefront may require minimal illumination. Resist overlighting a storefront. Display lighting and one other source is often plenty.

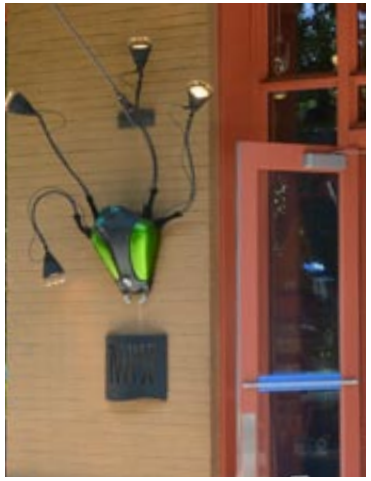
LIGHTING GUIDELINES

1. General exterior illumination is typically provided by street lighting. Where this lighting is minimal, providing a focused and even level of illumination.
2. Indirect lighting is encouraged.
3. General interior lighting of display areas helps prevent break-ins by allowing both police and passerby to see the activity inside a store.

Traditional gooseneck style lights illuminate this wall sign and limit light pollution. (SE 13th Ave and Nehalem St)

Up-down lighting located on the columns strengthens the rhythm of the Porter Building's bays. Photo by Rick Keating. (NW 12th Ave and Glisan St)

Colored lights add warmth to this building sign. Gooseneck lights focus light down on signage & sidewalk. (SE 13th Ave and Malden St)



Sculptural lighting is a fun means to light this entrance. (NW 23rd Pl and Westover Rd)

Neon signage lighting (SE 13th Ave and Bidwell St)

4. The scale and style of light fixtures should be consistent with the storefront. Fixtures should enhance a building's architectural details.
5. Lighting should attract attention to signs, store information, or building details, but not to itself.
6. Seasonal lighting can bring a festive spirit of the district, but it should be appropriate to the current season.
7. Avoid flashing, pulsating, dynamic, or moving lights.
8. Avoid lights that glare onto the street, public way, or adjacent properties, these are a nuisance and ruin the evening atmosphere. Supplemental security lighting such as floodlights should be hidden or shielded.

Certain types of sign lights, such as dynamic lights are regulated by Portland's Community Design Standards & Neighborhood District Regulations. (See Appendix)

Security

Storefront security is a concern in most retail environments. Elements such as metal bars and grates reflect a feeling of fear and insinuate the presence of crime. These perceptions, whether real or not, result in a decrease in popularity and prosperity of a commercial zone. Solid grates are a liability for several reasons: they detract from the neighborhood quality of the street, they feel unsafe, they conceal the interior from view, and they are hard

to keep free of graffiti. Where roll-down, open, mesh grates are an absolute necessity, they are best built into the interior of the storefront ceiling where they are concealed during the day.

There are a variety of ways of securing a business without evidence of fortification.

SECURITY GUIDELINES

1. Large, transparent windows and doors allow pedestrians and traffic to visually monitor business safety.
2. Security measures can also be enhanced through discrete solutions such as quality locks, internal alarms and notification systems, laminated safety glass and community watch efforts.
3. Lighting, especially at the entry and the sidewalks, is a good crime deterrent.

Materials and color

Materials and color are both important aspects of storefront design. Materials and color contribute to the store's advertising strategy, as well as to the building's overall image. Depending on the character of the district and its architectural stock, recommended materials and colors will vary. Protection and maintenance of building features are important in rehabilitation work. The Secretary for the Interior's Standards for Rehabilitation (See Appendix) provides information regarding methods for approaching preservation. Following appropriate repair and restoration techniques ensures a quality, durable storefront finish and eases maintenance needs over time.

A custom designed light shade offers an opportunity to communicate the craft of a business.

A heavy brass lock set is both beautiful and secure.

Whimsical colors and a variety of materials can be exciting or overwhelming. (N Mississippi Ave and Fremont St)

This building's strong colors give life to the street corner . (NW 21st Ave and Johnson St)

Infill areas of wood siding breaks up a long concrete facade while creating rhythm. (N Mississippi Ave)

Unprotected mill finished steel and natural wood give warmth to this renovated industrial building. (NW 22nd Pl and York St)

Paint color is an inexpensive and dramatic way to define a business or storefront. Even though color selection is the owner's choice, the color scheme should be compatible with neighboring businesses. While loud color schemes can be successful, loud colors used to simply attract attention are often counterproductive as they appear to be merely a gaudy choice.

MATERIALS AND COLOR GUIDELINES

1. Original material should be retained, maintained, repaired or uncovered whenever possible.
2. Replacement materials should be of compatible quality, color, texture finish and dimension to the original as closely as possible. New brick must match original.
3. Highly durable and easily maintainable materials should be used at the base of a building and at entrances for ease of maintenance.
4. Avoid materials that are hazardous to people or the environment. Refer to the Living Building Challenge Red List for information on materials to avoid.
5. High quality materials such as stone, terra-cotta, and brick are durable and convey a feeling of permanence.
6. When selecting color, consider building style, historic character, and business type. Highlight the architectural details of the building. Rosettes, dentils, and trim can be painted to contrast with the background wall color.
7. The orientation of a building affects the appearance of col-

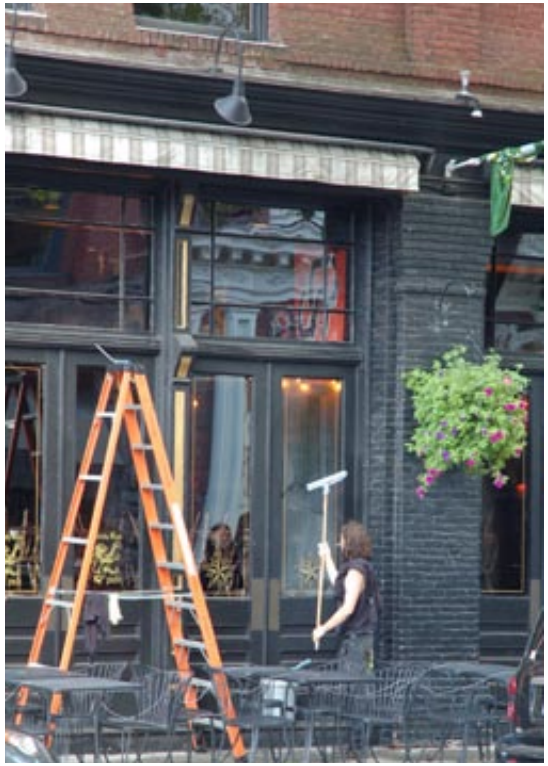
ors. Colors appear warmer in a south or west orientation and cooler in the north or east orientation.

8. Matching natural colors of materials such as brick and stone may be desired in some projects.
9. Removing existing quality materials from a building contributes to a loss of district identity. Such actions must be viewed in the larger context where the cumulative effect can lead to a decline in the overall appearance of the business district.
10. Avoid using materials that are unrelated to the original building or cover/alter architectural features, such as corrugated metal or galvanized panels.
11. Avoid artificial sidings such as aluminum, vinyl, imitation brick, and imitation stone.
12. Avoid chemical washes, sandblasting, and other cleaning methods that damage exterior building materials.
13. Brick should not be painted unless absolutely necessary to prevent further deterioration. Generally, repointing and repairing brick is a more durable solution.
14. Avoid arbitrary painting of decorative lines, bands or graphic devices directly on to wall if not related to architectural detailing.
15. Graffiti is a common issue of concern and often leads to painting of the original masonry. Graffiti sealers can be applied, which provide a clear layer to protect the masonry

These vibrant colors and well maintained planters give vitality to the street. (NW 22nd Ave and Davis St)

This recently updated storefront uses durable materials - wood + cement stucco. (SE 5th Ave and Clay St)

Various shades of green (N Mississippi Ave and Fremont St)



Scheduled maintenance is important to good business and a healthy district (SW 2nd Ave and Ash St)

Clean places follow a timely schedule of maintenance.

Awning in need of cleaning

Base in need of paint

while preserving the original look.

General Maintenance

General maintenance is a first step in the improvement of existing buildings and in changing the appearance of a neighborhood business district. Neglect such as peeling paint, torn awnings or broken window panes contributes to a look of overall deterioration. Fixing broken items can help deter subsequent vandalism by asserting ownership. Basic tasks, such as cleaning, repairs, or washing windows can transform a building and have a large impact at a low cost.

Graffiti must be removed immediately to discourage repeat vandalism and promote a positive image of the district. Investigate graffiti sealers to prevent damage to natural materials.

Sweeping entries, cleaning sidewalks, maintaining window displays, and caring for plantings demonstrates that there is a sense of pride in both business and the neighborhood. Over time, maintenance practices pay off.

MAINTENANCE GUIDELINES

1. Organize businesses and volunteers for regularly scheduled district clean-ups or encourage groups to "adopt" portions of the district.
2. Arrange partnerships with city agencies for maintaining plantings, trash cans, and sidewalk spaces.

3. Remove all fliers from sign poles and lamp poles.
4. Clean and repaint a storefront regularly.
5. Wash windows, sidewalks and street furniture regularly.
6. Use durable materials and hire reputable contractors.
7. Keep sidewalk sandwich boards well maintained.
8. Remove all old signs, brackets, fixtures and wiring.
9. Keep planters and window boxes in good repair, replace dieing vegetation and make a watering schedule to keep plants healthy.

Original building

Garbage corrals help keep districts tidy.

After storefront improvements (NE 15th Ave and Brazee St)

Streetscape Design

A successful open space on Mississippi Ave.

A bustling street in NW Portland (NW 10th Ave and Lovejoy St)

Streetscape is the collective parts of the public domain which make a Main Street District unique in its overall shopping environment. It is the initial introduction that a patron or visitor will have when arriving at your district, and the area the community moves through on a daily basis.

This chapter focuses on the public streets and walkways that communicate the character of your district. These public elements of Main Street are vital to its success but often require community wide collaboration to achieve unity. Larger group planning and organization will be necessary to make these public improvements.

Open Spaces

Open spaces are a vital part of your main street. They provide gathering spaces for a variety of functions; music performances, festivals, relaxation, socializing, sidewalk sales, playing, and a myriad of other uses. Open spaces must be carefully designed. Definition of the edges and flexibility of the space itself is essential. Ideally, an open space should feel like an outdoor room with some area providing protection from the elements, while also allowing open areas for sunlight. Open spaces provide an active gathering place for the neighborhood, so they should feel safe. They should be in close proximity to the main circulation of the district, while also having a sense of separation.

The design of your commercial district's open spaces can be used to reinforce the character of the neighborhood. If you have multiple open spaces in proximity to each other, they can

serve as a form of pedestrian continuity throughout the district. There are many elements that can be incorporated into a public space. These include street furniture, water features, landscaping, open-air structures, or hardscaping. Above all, remember that these open spaces need to be at human scale, so don't make them too big.

VACANT LOTS

Vacant lots can be found in almost every district of the city. Not only are they opportunities for new development but also they can be energizing open spaces for the community. Vacant lots disrupting the continuity of a street edge and left in disrepair can drain a main street of its vitality. It creates a fragmented commercial core that prevents patrons from continuing their shopping stroll. Urban planners have studied the habits of shopping pedestrians and they have learned that gaps in continuity of retail storefronts over 75 feet result in shoppers turning around. Therefore it is important that each district address the active role of vacant lots in their master plan.

OPEN SPACES AND VACANT LOT DESIGN GUIDELINES

1. Based on the location of the lot, determine functions that will best support the activities in that part of the district. Central lots should host the most active events.
2. Vacant lots need to communicate a pleasing aesthetic at all times. Cleanliness and well-maintained vegetation go a long way
3. Keep open spaces open and allow them to be flexible for many activities.

Food carts are a unique Portland phenomenon. Designed thoughtfully, the carts can define edges of a public space and encourage pedestrian activity in the district. (N Mississippi Ave)

Vacant lots can disrupt the continuity of your Main Street and discourage shoppers from walking along pedestrian corridors.

The Moreland Farmers Market adds vitality to this parking lot (SE Bybee St and 14th Ave)

Community gardens add joy to a vacant lot. (NE Ainsworth & Albina Ave)

4. Plan events that are frequently engaging this space: weekly farmer's market, seasonal events, community social events, district events and sales, develop facilities (utility hook-ups) for temporary-use food carts.
5. Develop edges that are rich and varied. Think Italian piazzas: places to sit, sheltering elements (temporary or semi-permanent), vegetated planters.
6. Keep these lots safe by removing litter, minimizing obstructions where people can hide from public view, adding area lighting and removing all graffiti and vandalism.
7. Community gardens can be an active use for a vacant lot. Consider the layout and screening for winter months.

ALLEYWAYS

The urban alleyway offers an "off-district" opportunity to provide a hidden culture to the Portland neighborhood district. Often Portland was developed without the alleyway but occasionally alleyways appear in neighborhoods as access to the back door to businesses. They primarily function as service access for deliveries and trash collection. However, as densities increase these alleyways often become entry ways to live-work offices and small businesses. Each alleyway should be considered uniquely since the current requirements demanded of each throughway will be different.

ALLEYWAY GUIDELINES

1. Functionality is the priority for alleyways. When used by utility vehicles make sure that all required clearances are

maintained for height and width of access.

2. Keep alleyways clean. Due to their nature as locations for trash and loading areas it is important to keep detritus contained to detour these areas becoming dumping grounds and attracting vermin.
3. Make alleyways safe. Minimize barriers that obstruct views. Add exterior area lighting. Consider building security. Clean away all graffiti and vandalism.
4. Where alleyways have become "entry ways" to businesses and residences, make sure that these alleys have a welcoming appeal. Review the Storefront Design Principles.

CREATE SOCIAL SPACES

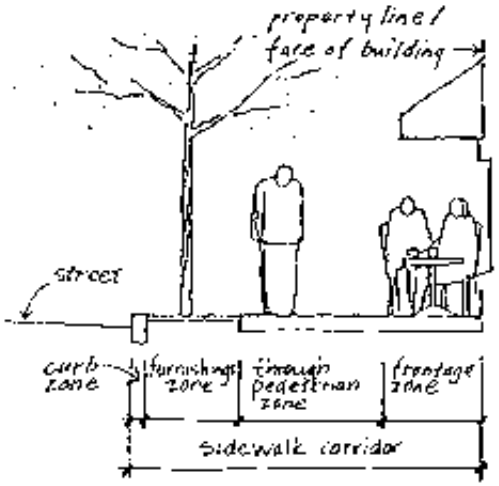
The goal of any streetscape improvement should be to increase the vitality of the street by making it inviting. One of the best ways to create activity on the street is to give people places to interact comfortably or just to sit and watch the world go by.

Many people consider shopping a social and recreational experience, shared with family or friends. The design of outdoor seating areas should be given careful consideration. Benches randomly placed along the sidewalk may not be comfortable or visually appealing. You can wrap benches around a tree pit or planter to give people a sense of shelter while they rest. Trees and planters can also be used to perceptually break up a large paved area into a series of "rooms," making the space feel friendlier and more human in scale. These small spaces offer places of respite for extended district stays, or can be used for outdoor dining.

Well maintained functional alley (N. Mississippi Ave)

Developed retail alley near NE 14th Ave and Alberta St.

This sunny courtyard serves as a resting place for passing pedestrians and provides additional seating for the adjacent businesses. (NE Alberta and 18th Ave)



Typical section of a Sidewalk Corridor in a commercial zone, Portland Pedestrian Design Guide (PBOT)

Seating in the "frontage" zone (N Albina Ave and Killingsworth St)

Seating in the "furnishings" zone (NW 23rd Ave and Kearney St)

Street Furniture

Street furniture includes lamp posts, trash receptacles, benches, tables, kiosks, way-finding signage. A district should address each of these pieces with the identity of the district in mind. Additionally, don't forget to address the functional side of a district's furnishings.

Accessibility: For patrons and service people.

Durability: Materials that are difficult to damage and easy to clean will pay-back many times the initial cost.

Security and Safety: Adequate night lighting and minimizing dark hiding places are important. Furnishings need to be located out of the way of traffic and congestion (people and cars.)

SCALE AND STYLE

Street furniture should make pedestrians comfortable; it is important to remember that it needs to be human scaled. Furniture that is too large/small or too far apart will be unusable.

Street furniture should reflect the care and intent of the neighborhood. A simple garbage receptacle can communicate a memorable image of the neighborhood. Paying attention to these small pieces in the streetscape will set your main street apart from the others. Once your district's street furniture is in place, make a maintenance plan to insure that it stays nice so people feel comfortable using it.

PLACEMENT

Street furniture is typically located in the furnishings zone of the sidewalk (between the pedestrian travel lane and the curb), the "frontage" zone of the sidewalk (directly adjacent to the building), or in common open spaces. Each districts public-right-of-way will be different so work with Portland's Bureau of Transportation to learn your options.

Items like trash receptacles need to be placed frequently because pedestrians are typically not willing to walk very far to discard garbage. Trash cans also need to be conveniently located for servicing.

> The City of Portland has specific requirements for many types of elements in the right of way; refer to the Bureau of Transportation Pedestrian Design Guide for more information.

AVOID CLUTTER

One of the keys to creating an attractive streetscape is to avoid clutter. When there is too much street furniture or if it appears messy, then street furniture can detract from the positive experience of the street. Items such as too many disparate newspaper boxes or utility poles with layers of outdated posters can overwhelm visitors. Screen or corral unsightly furniture such as garbage cans. Keep them off the street, if possible.

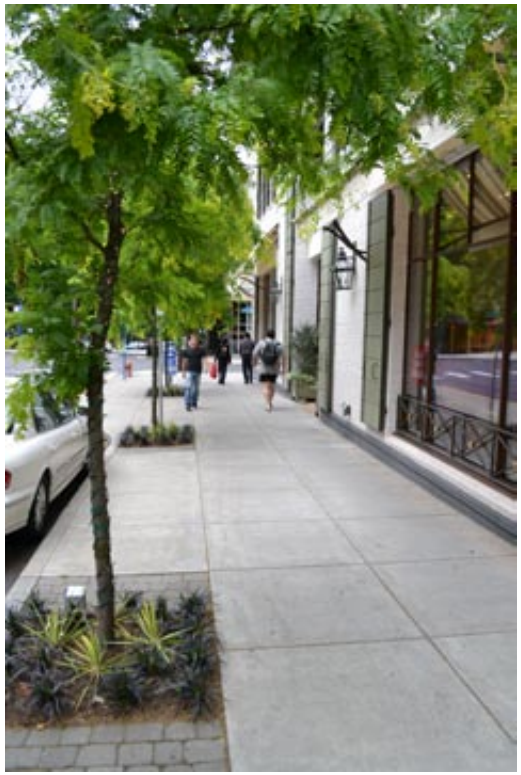
Street Trees and Plantings

A walkable retail district is more than a place where people run their errands. Central business districts are the heart and soul

Designed by a resident sculptor, Alberta garbage cans emphasize recycling with artistic flair.

This original railing with the plantings highlights the style of the Mississippi neighborhood.

Clutter can weaken the pedestrian/patron experience.



Successful street trees in NW Portland

Creative tree well grate

This planter also doubles as a bench.

of communities. They are places where people can enjoy an appealing atmosphere and have a memorable experience, which gives Main Street a definite edge over its online or mega-mall competitors. The design of a commercial district that uses landscaping and trees can enhance a customer's experience and further strengthen its competitive edge.

Trees positively affect judgments of visual quality, but more significantly, appear to influence other consumer responses and behaviors. Survey participants from all regions of the United States favor trees in retail settings; this preference is further reflected in positive perceptions, customer behavior, and product pricing. It is important to note that the highest ratings were granted to places having full, mature tree canopy, the result of careful maintenance across decades.

The urban forest is an important part of the vibrant, satisfying places that shoppers enjoy. Once they get to these districts, people report that they will stay longer, which could mean greater sales revenue.

MAKING TREES WORK IN YOUR DISTRICT

A comprehensive streetscape plan should include the addition of trees and a plan for their ongoing maintenance. Selecting the right trees and giving them proper care can help your community avoid potential problems and nuisances, such as sign obstruction, foliage debris, and sidewalk damage. A district-wide streetscaping plan is necessary to create a cohesive appearance as well as to choose planting patterns that are visually appealing.

TREE SELECTION

Trees vary dramatically in size, shape, and growth patterns, as well as in their soil, sun, and water needs. Different trees require different planting conditions, placement, and care. When selecting trees for your district, consider the local site conditions, as well as the trees' characteristics so that what you plant fits your community's vision. Tree professionals refer to this as choosing the "right tree, right place."

The City of Portland Urban Forestry department can provide a list of local or recommended species for the area. Trees that work well in someone's front yard may not thrive in a commercial setting. See Appendix A.

Native species may be good choices because they are often well adjusted to local growing conditions. Native trees are more likely to be resistant to regional tree diseases as well. They can also provide people with a connection to familiar and interesting local vegetation.

Many species have characteristics that may or may not make them a good fit for street plantings. For example, some trees are resistant to air pollution, which may make them ideal for a parking lot. A tree that produces fruits or large seeds should not be planted along the sidewalk.

SOILS

Adequate soil volume for tree roots is crucial. Urban soils are often compacted, which reduces the amount of oxygen and water that can get to the tree roots. Water or oxygen-starved

Lush planter boxes with a variety of colors and textures creates a place where patrons will want to linger. (SE Division St and 20th Ave)

Alternating rhythm of street trees and planters. When possible, plant between glass storefront bays. (NW 5th Ave and Glisan St)

Uniform street trees (SE Belmont St and 33rd Ave)

Well maintained street trees make it easy to see the storefront and signage. (NW 23rd Ave and Quimby St)

trees become stressed and are more susceptible to disease. New structural soils and root barriers, make it possible to extend a tree's root zone under sidewalk and street pavements while preventing root damage to concrete.

SIDEWALKS AND INFRASTRUCTURE

Sidewalks are the front yard of a business. Curb appeal starts at the sidewalk, which serves many functions, including pedestrian movement, ADA accessibility, and outdoor dining. Better sub-grade materials are making it easier to integrate such functions with the needs of trees.

Tree roots and branches can interfere with utilities and pavement. Many of these problems can be avoided by designing planting spaces to accommodate expected tree size. Plants are genetically inclined to attain a certain size in both canopy and root areas. Conflicts arise when such growth zones are too confined for the size of the mature plant.

Trees are living resources that change in character and form over many decades. While this dynamic design element offers opportunities, it also can create tensions in the built environment. Here are some suggestions for integrating trees into the retail streetscape:

PLACE BRANDING

Each species has a distinct mature form, size, and other attributes. Plant selections can "brand" a place through subtle, yet observable, distinctions of texture, seasonal color, and plant massing. Within a shopping district, diverse tree groupings and

arrangement can provide cues for orientation and way finding. Working within a selected plant palette, the landscape designer can promote variety within unity, creating a place with an overall coherence.

ORDER AND TIDINESS

Careful, routine maintenance is also important. The level of care for plants in the sidewalk zone provided cues about the level of care and customer service they might expect from nearby merchants.

SIGNS AND TREES

Merchants often express concerns about trees and the visibility of their signs, awnings, and storefronts. Extra attention to design is necessary to prevent tree-sign conflicts. Here are a few general principles:

Tree Choice: Trees with a more open canopy will permit better views. Tree species with a mature height that is ultimately higher than sign heights are good choices.

Maintenance: Ongoing maintenance should include pruning to guide the shape of the tree's canopy and remove hazardous limbs. Once the tree grows, the canopy can be "limbed up" to raise branches and foliage above signs and storefronts. The canopy can also be opened up with selective pruning to allow sunlight to filter down on to the sidewalk, making the street more pleasant for pedestrians. Avoid topping because it causes a flush of new branch and leaf growth that creates a more dense

CONCERN	SOLUTION
Trees block views of signs and storefronts.	**Co-design signs with trees.** In Palo Alto, Calif., businesses and a non-profit worked with the city to relax the sign ordinance to allow for adjustments while trees grew. Prune the canopy to open up views as trees grow larger, but don't top the canopy.
Trees cost money; what do we get back?	**Small investments pay off big!** Initial planting and maintenance costs for small trees may be about $500. As the tree grows, it generates greater economic benefits every year – air and water quality, property value, and human health.
Trees get into power lines and underground pipes.	**All trees are not the same.** Careful choices of tree species suited to the root and canopy space available can minimize damage to utilities.
Tree roots crack the sidewalk!	**Trees are living things and their roots need space to grow, as does the tree canopy.** Many new technologies are available to increase root space under sidewalks and give roots more space so they don't push up paving.
Trees are messy!	**Careful plant selection can reduce problems of falling flowers, fruit, and leaves.** In addition, a routine maintenance program takes care of debris before it becomes a problem.
Tree upkeep and maintenance is expensive.	**Choose the right tree for the right place to reduce problems.** Yearly tree care and maintenance will prevent major tree failures. As with other improvements, costs for a maintenance plan can be shared by all merchants in a district.

Business owners have many concerns about street trees. It is important to discuss a master tree plan that best works for your district. (Diagram by Main Street News Vol #263, Aug 2009)

On-street parking (NW Marshall St and 18th Ave)

Off-street parking has nicely designed vegetation buffers that double as storm water facilities. (NW Vaughn St and 19th Ave)

This non-traditional building with pull-in parking has a layer of plantings to screen cars from the walkway. (NW Kearney St and 23rd Ave)

visual obstruction. Repeated shearing of treetops often causes poor tree health in the long run.

Consider signage design: Color and material choices for signs should contrast with foliage. Monumental signage can be used to consolidate several scattered signs into a single street side structure that is readily seen and understood. Perhaps "iconic" signs, using quickly interpreted symbols for goods and services, could be installed, reducing the need for many highly individualized signs that are difficult for passing motorists to comprehend.

Parking

Parking is an essential part of attracting visitors to your commercial district. It should be easy to locate, simple and safe to use, and within close walking distance to businesses. Parking is the problem most often cited by merchants and business owners as the reason for a commercial district's decline. It is a feeling echoed in surveys of shoppers and employees, many of whom blame a 'lack of parking' for all ills. Rarely is the 'parking problem' the only reason for a downtown's deterioration. Parking is merely one of many interrelated elements that contribute to a healthy commercial district. Creating and enforcing a well managed strategy for street parking is essential to making the most of this resource.

BIKE PARKING

A significant portion of Portland visitors and business employees will come to your commercial district on their bikes. There

should be both short-term and long-term bike parking options to fulfill the variety of user needs. Bike racks make a commercial district more attractive by reducing the clutter of bikes attached to poles, parking meters, or railings. When they are properly located, they keep the pedestrian zone free of obstructions and keep bikes and bikers safely separated from moving traffic. The City of Portland has many helpful resources and programs to help with a successful design and installation. (See Appendix.)

SHORT-TERM BIKE PARKING

The bike rack is the most common type of bike parking, typically the hitching post type located in the furnishing zone of the sidewalk. If your location fits the City requirements, the City of Portland will install a bike rack free of charge. Contact the City of Portland Bureau of Transportation for more information. Art racks are non-standard bike rack with an artistic flair. They are privately installed, owned, and maintained. Portland also offers on-street bike corral parking if neighboring businesses are interested. On-street bike corral parking replaces existing on-street parking space(s) and provides room for many bikes, keeping the sidewalk and furnishing zone free. It presents a highly visible bike presence and creates a concentrated activity zone.

LONG-TERM BIKE PARKING

Long-term bike parking requires more security and protection from the elements, and may or may not be open to the public. Long-term parking would most likely be used by employees in the area. It might include a dedicated bike room or locked bike enclosure. Some of the best long-term bicycle parking areas take advantage of unused areas inside buildings or parking lots.

Bike racks should be easy to lock a bike to without damage to the bike. (NW 10th Ave and Lovejoy St)

Art Racks can help to identify a business. (SW 1st Ave and Oak St)

Bike corrals give a highly-visible bike presence and define area of the streetscape. (SW 1st Ave and Ash St)

Screening can provide an attractive barrier between parking and sidewalks (N Interstate Ave and Rosa Parks Way)

Parking Screen Wall

Street Screen Wall

ON-STREET CAR PARKING

There are several advantages to having on-street parking in a commercial district. On-street parking provides customers with a highly visible place to park. That visibility, coupled with the proximity to populated areas give the visitor a perceived sense of safety. On-street parking slows traffic because cars are coming and going. Parked cars provide a buffer to pedestrians from traffic, which can make the walking experience feel safer. As opposed to expansive parking lots or crowded parking garages, on-street parking is inherently more in scale with pedestrians and small commercial districts.

OFF-STREET CAR PARKING

There are two types of off-street parking facilities: parking lots and parking garages. Parking garages, have two or more levels: a surface level and additional levels either above or below grade or both. Parking garages are usually located in communities in which building densities and land costs are high. Drivers are often reluctant to use parking because of the higher costs and a perception that parking garages are difficult or dangerous to use.

Parking lots are constructed entirely on the surface, usually at grade level. Access to the parking lot take place directly from adjacent streets with one or more entries and exits. Parking lots may be gate or cashier controlled, or they may have open access with meters or 'pay and display' machines. Their advantages include high visibility, ease of use, inexpensive to build, more compatible with the scale of smaller communities, and perception of safety. Parking lots are the most common form of off-street parking.

PARKING DESIGN GUIDELINES

1. The facility should be safe with adequate sight distance at the lot's entrance and exit points.
2. Placing a lot in the center of a row of retail businesses should be avoided because it breaks up physical continuity of the street and disrupts the shopping pattern.
3. The lot should be compatible with adjacent building uses and traffic circulation patterns. Entries and exits should be easy to recognize
4. Include landscaping to present a pleasing appearance and to minimize the visual impact of the lot on surrounding properties and uses.
5. There should be a clear boundary, such as landscaping, to screen parked cars from other uses.
6. Large lots located in the middle of a pedestrian circulation corridor disrupts the continuity of the corridor and will discourage people from walking along that route.

Make sure to consult the Bureau of Environmental Services' Stormwater Manual for rainwater management requirements)

Parking Screen Wall

Sustainability

Vegetation wall at NW 18th Avenue and Pettygrove St

Salvage materials on display and available on N. Mississippi Ave.

The Purpose of Sustainability

Sustainability has become a broad and all-encompassing term permeating every aspect of urban improvements and development, as it should be. To generalize the subject, sustainability can be broken into three large categories:

- Environmental
- Economical
- Social

All aspects of sustainability should be considered in the group planning of your Main Street district. Because these guidelines are focused on design, this chapter will mainly focus on the environmental portion; however, all three parts are interconnected. A more sustainable environment will definitely influence the economical and social components on your main street.

The principles will introduce you to the potential of incorporating sustainable improvements into your building. Starting with simple improvements to an individual building, you will begin to understand the sustainable benefits associated with improving an existing building. Completing multiple energy conserving improvements will lead to measurable cost savings in your energy consumption.

Stormwater management will be addressed more as a design statement within the district rather than a technical guide. Stormwater has great potential for introducing water features and native vegetation to the streetscape. As a result, stormwater facility design can be considered as a possible public im-

provement to the district environment and not just individual properties. For this reason, this section will present successful systems and examples that might add to the unique character or your district.

The section on alternative transportation is meant to have each district consider how it is meeting the needs of its patrons arriving in numerous ways. When a neighborhood becomes known for successfully accommodating a group's needs, it can become a city-wide draw and give strength to it's identity.

Sustainability of Existing Buildings

It is important to realize that reusing a historic building is the ultimate form of recycling. With new construction comes the need for processing materials, energy consumption associated with manufacturing and shipping materials, site excavation, and possibly the development of new infrastructure. While new buildings can strive to make a lighter environmental footprint by incorporating recycled materials or energy-efficient systems, a lot of already expended energy and expenses went into constructing existing buildings. When historic buildings are demolished, their embodied energy (the amount of energy associated with extracting, processing, manufacturing, transporting, and assembling building materials) is lost and building material waste is hauled to overflowing landfills.

Reusing our historic buildings will almost always be more environmentally responsible than building new structures, even if those new structures are "green buildings". Many historic

Martha H. Terrell Community Services Center uses a green roof, living screen wall & large storm planters to make a rich environment. (NE Alberta St and 8th Ave)

Replacement windows on the ground floor restore the historical character of the building. Photo by Sally Painter. (SE Division St and 11th Ave)

Operable awnings and shutters control how much sunlight enters the building (NW 23rd Ave and Flanders St)

Historic photo from 1929 shows the benefits of retractable awnings and transom windows on a grey Oregon day.

buildings were constructed with features that made use of specific building materials and the local climate to maximize their performance. Up until the post-World War II era, buildings were designed to operate on much lower energy budgets and take advantage of natural elements. High ceilings, natural light, and windows for cross ventilation; shutters and canopies for controlling sunlight; and a variety of other traditional design elements are being rediscovered today as effective means to reducing a building's energy consumption.

Focusing on key envelope upgrades and state of the art mechanical systems that are sensitively integrated with the building can boost performance to modern building standards without compromising the original building integrity.

ENVIRONMENTAL BENEFITS OF EXISTING BUILDINGS

Older main street buildings are ideal models of sustainability. There is simply no method of construction that is more environmentally responsible than rehabilitating an old building. After reading about the strengths of your old building learn about applicable sustainable best practices for your situation.

Shared Party Walls: traditional main street storefront buildings are narrow and deep with shared side walls. The shared walls conserve heat, limiting the amount of wall surface experiencing significant heat loss.

Thick Masonry Walls: solid masonry walls store heat and cool air efficiently, helping regulate the temperature inside the building.

Operable Awnings: awnings that can be rolled down when the weather is hot can reduce heat gain by more than 65 percent, and rolling up the awnings when it's cold outside increases heat gain inside the building.

Operable Windows: Open windows help circulate air and regulate interior temperatures. For example, opening the top sash of a typical double-hung window on the sunny side of a room permits hot air near the ceiling to escape; opening the bottom sash of a double-hung window on the shady side of the room lets in cooler air.

Operable Shutters: operable shutters on upper-floor windows keep rooms cool during hot weather by shading out the sun while allowing ventilation.

Reflective Ceilings: shiny ceilings painted a light color, such as white or silver, reflect light back into the building, reducing or even eliminating the need for artificial lighting during the day.

Transom Windows: transom windows provide ambient light while intensifying heat in the area immediately behind the storefront window. They can also provide secure venting if operable.

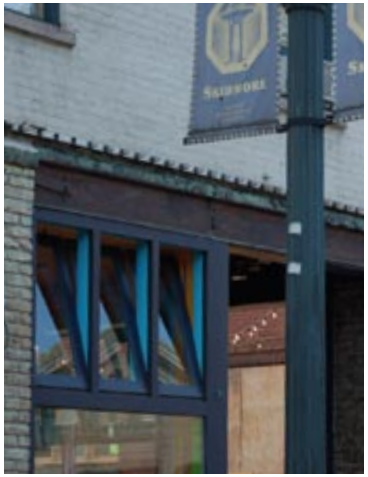
Skylights: skylights boost the amount of natural light inside, thereby reducing the need for artificial lighting.

Tall Ceilings and Ceiling Fans: hot air rises naturally, so tall ceilings help keep low air space cool in warm weather, while ceiling fans circulate the air above, moderating temperatures.

Narrow building maximizes day lighting with transom windows and a skylight (NW 23rd Ave and Johnson St)

This atrium with skylights above allows light to travel deep into the building. (SW 1st Ave and Pine St)

New project taking clues from the old (N. Mississippi Ave and Mason St)



Vented transoms are a great way to bring in natural breezes (W Burnside)

Passive Solar: as sunlight shines through windows, the masonry flooring inside the storefront window absorbs heat, radiating it back into the ground-floor space when the temperature cools.

Recessed Entryway: a recessed entryway helps prevent hot or cold air from rushing in when the front door is opened.

Atrium: whether protected by a skylight or open, an atrium illuminates the interiors of multi-floor buildings.

Embodied Energy: the energy it took to manufacture the materials used in buildings, transport them to the construction site, and construct the building has already been spent and is embodied in the building itself.

Materials Created Locally: historically, most main street building materials were purchased from local or regional sources, rather than being shipped in from long distances.

Walkability: one of the most environmentally friendly characteristics of older and historic main streets is that they are walkable.

Durability: older main street buildings were built to last for decades, if not centuries, with durable materials like stone, brick, copper, and dense heartwood.

Sustainable Building Improvements

At its simplest level, making main street buildings more environmentally friendly involves just two things: using fewer materials and using less energy. Using less energy means consuming less energy, primarily through passive methods such as using natural sunlight and heat gain or generating more "green" energy, or both. Using fewer materials means being thoughtful with design and construction. Retain and reuse as much of the existing building as possible. Here are some major actions that can make main street buildings greener:

SEAL AIR LEAKS AND MAINTAIN WINDOWS

Air leaks are one of the biggest energy-related problems in older commercial buildings. By most estimates, leaks can waste 20 to 50 percent of the energy spent on heating and cooling commercial buildings.

Make sure doors and windows weather-stripping is tight and that any gaps are caulked. Install interior storm windows, if desired, by attaching them to the interior window casing with magnets or brackets. Use duct insulation to wrap heating and cooling ducts. If the building has a basement or crawl space, be sure it is adequately insulated. If the building has a wood frame, make sure the external walls have adequate insulation in the cavities between the exterior siding and interior wall finish.

Older masonry – stone, brick, concrete block, etc. absorbs moisture from outside air and must be able to "breathe" to let moisture evaporate. Hire a contractor who has worked on older and

Contractors replacing a storefront with durable wood windows

Exposing original wood ceilings add visual warmth. Relite windows to the ceiling allow natural light farther into interior spaces

This solar array is used to charge electric cars (SE Water Ave)

On site solar PV's are hidden from street view by this building's parapet (SW 1st Ave and Harrison St)

historic buildings and understands how to install insulation and seal windows and doors in a manner that won't trap moisture inside walls or allow it to condense on wall or trim surfaces.

REPAIR OR REPLACE INEFFICIENT HEATING AND COOLING UNITS

According to the U.S. Department of Energy's Energy Efficiency and Renewable Energy (EERE) program, heating, ventilation, and air conditioning (HVAC) consume 40 to 60 percent of all energy used in commercial buildings and houses in the United States. Of all the ways in which the energy efficiency of main street buildings can be improved, HVAC is, without a doubt, the most significant.

There is no single solution for all main street buildings. The best HVAC system for a particular building will depend on its size and materials, its orientation, the local climate, and the availability of nearby energy resources, among other factors. The good news is that more options for making main street buildings' HVAC systems energy- and cost-efficient are available now than at any point in history.

GENERATE ON-SITE ENERGY

The range of options available for generating on-site electricity has expanded dramatically in the past few years. For older and historic main street buildings that have roofs with access to direct sunlight, roof-mounted photo voltaic solar panels that convert sunlight into electricity are becoming a practical option. Solar panels can provide part or all of the electricity required to operate a main street building, depending on how much sunlight the building receives and how much electricity it consumes.

Energy from a solar panel can be fed directly into a building's electrical panel for immediate use, stored in batteries for later use, or put back into the electrical grid.

Roof-mounted wind turbines can vibrate so much that they jar loose masonry and mortar, which makes them a poor choice for older and historic buildings.

OBTAIN BUILDING MATERIALS LOCALLY

Historically, it was common for building materials to come from manufacturers within the community or the region. Today, building materials are usually trucked in from many miles away. Buying materials locally or regionally cuts down on the amount of gasoline needed to transport materials and, ultimately, on costs. Consult the Living Building Challenge's "Materials Red List" to learn about avoiding hazardous materials and chemicals.

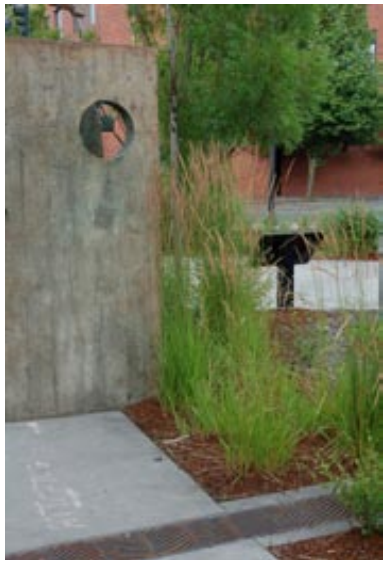
IMPROVE INTERIOR AND EXTERIOR LIGHTING

Compact fluorescent light bulbs are widely available, and their cost and energy savings are well known. Other choices are on the horizon as well; LED light bulbs, in particular, could surpass compact fluorescent in light quality, bulb longevity, and cost efficiency.

There are other things building owners can do to improve the lighting energy efficiency. Installing timers and occupancy sensors can ensure that lights are turned on only when needed. Removing the covering from a transom window can improve interior lighting. Be sure the ceiling is painted a light color with a glossy finish to maximize natural light transmission.

Storefront entry improvements built with local doug fir (SE Clay St and 6th Ave)

Deck and green roof (NE 8th Ave and Alberta St)



Reuse of building scrap material for landscape feature (SE Water Ave and Clay St)

INSTALL GREEN ROOFS

The rectangular, gently sloping roofs of most main street buildings are ideal candidates for "greening." A green roof is simple – it's basically just an engineered layer of vegetation on top of a building – but it helps the environment in two major ways: it improves air quality by absorbing carbon and releasing oxygen; and it absorbs rainwater, reducing runoff into the stormwater system. A green roof also provides other benefits for the building. It helps prevent heat loss during cold weather and helps keep the building cool during hot weather, reducing utility costs. By protecting the roof surface from harsh sunlight, a green roof lasts longer than a conventional membrane or built-up roof. The cost of an integral, extensive green roof is only slightly greater than the cost of a conventional roof.

There are two ways to install a green roof on a main street building: it can be integral to the roof structure itself, or it can consist simply of shallow planting boxes placed on top of the roof. See the section on Stormwater Possibilities

UNDO INAPPROPRIATE ALTERATIONS

The first step in (re)greening main street buildings is simply to undo the alterations that have, over the years, reduced their energy- efficiency. In a few instances, the alterations may be so extensive that undoing them would be prohibitively costly. But, in most cases, the alterations are relatively simple, and it is usually possible to reverse them on a minimal budget: removing a suspended ceiling, for example, uncovering transom windows, or restoring a storefront window.

Maintain and repair existing upper floor windows: it has become popular belief that replacing the upper-floor windows in a historic commercial building is an energy-wise improvement. The R-value of a double-glazed window, however, is only nominally better than that of a single-glazed window; and the historic window's heartwood frame will last decades longer than its replacement. It is usually more environmentally responsible, and less expensive, to simply repair the original window, seal any gaps or cracks around the molding to prevent air infiltration, and install an interior storm window.

Maintain and repair original ceilings: suspended acoustical tile ceilings erase several green characteristics of traditional main street commercial buildings – particularly in ground-floor storefront spaces. By lowering the ceiling height, they disrupt vertical air circulation. By blocking the transom window and covering up the bright, shiny original ceiling, they significantly cut the flow of natural light into the building.

Maintain and repair original storefront windows: some businesses – especially professional offices and bars – have a tendency to reduce the size of their storefront windows by partially enclosing them. This disrupts the passive solar benefits of large storefront windows and disrupts the visual rhythm of the overall streetscape.

Install or maintain functional awnings: often awnings are now frequently used as business signs, rather than for the energy-conserving purposes – allowing or preventing heat gain – for which they were originally intended.

New sustainability features are incorporated but the original rhythm & composition is maintained to give it the authenticity of a well restored building. (SE Water Ave and Clay St)

This stormwater planter is also a courtyard landscape feature (Mississippi Ave)

Retain existing rooftop water tanks: Unfortunately, many rooftop water tanks have been removed; but, by collecting rainwater and using it to fill toilet tanks, they helped manage the district's storm water, reduced demand for treated water, and saved property owners money. These practices are being rediscovered in new projects

Stormwater Management Possibilities

Cities, especially Portland, are rethinking the way that we manage simple elemental things like rainwater. A passage from the City of Portland's pamphlet Why Sustainable Stormwater Management Matters describes their new goals:

> Before Portland was developed, forests and open spaces absorbed rainwater. Today, rain falls on buildings, streets, sidewalks, and other hard surfaces and runs off into rivers and streams. Stormwater runoff causes erosion, carries pollution and sediment to the river, decreases groundwater recharge, and increases river temperatures.
>
> Stormwater management recognizes the relationship between the natural environment and the built environment, and manages them as integrated components of a watershed. Sustainable stormwater management is an alternative to the traditional piped approach. It promotes on site collection and conveyance of stormwater from roofs, parking lots, streets, and other surfaces to infiltrate into the ground or collect for reuse, often reducing the need for costly underground structures.

STORMWATER MANAGEMENT ON MAIN STREET

This is an opportunity to incorporate an active natural resource into your streetscape. Depending on the management system that you adopt, the design can add an attractive planter, paver pattern or water feature to your district's environment.

Urban life has been dependant on water being distributed and disposed of with little more to think of than where do we put the faucet and drain. With the growing populations and the huge expense associated with upgrading existing pipelines, municipalities have realized that upgrades can be minimized with the age old practice of letting the rain water become the ground water again.

SIMPLE IDEA WITH MANY SOLUTIONS

Stormwater management introduces a new complexity to building design. For new construction and additions, the City of Portland is requiring that every horizontal surface, whether rooftop, parking lot, sidewalk and street, be considered a place that stormwater needs to be responsibly managed on-site. The Bureau of Environmental Services is a valuable resource (see Appendix) and must be consulted to become familiar with all the criteria involved when selecting a stormwater system that is right for your property's situation.

Before briefly touching on the many different systems and inspiring examples that have been successfully completed, it is important to realize that your project could play a bigger role in the overall development of your district. Many stormwater management systems play a vital role creating fantastic public spaces, active water features or beautiful native planter boxes that embellish the streetscape. Scale is a big factor in the design of your stormwater management system. This is the strength of your Main Street district. If your business/property is small and poses a high expense for a small system, communicate with your neighbors to see if a larger, shared facility is possible. A

Planting strips along exterior walls

Artistic rainwater collection strip (Milwaukie, OR)

Planting strip in front of a food co-op on SE 21st Ave. provides curb appeal

A creative stormwater downspout and rainwater sculpture makes for an dynamic stormwater planter (SE Division St and 20th Ave)

A roof drain integrates into the landscape as a flow-through planter. (SE Water Ave and Clay St)

larger development has more potential to create a community gathering space for the district.

DISCONNECTED DOWNSPOUT

Existing roof downspouts can be disconnected on commercial and industrial properties where runoff can be redirected to a yard, garden, swale, stormwater planter or cistern for storage.

ROOF GARDEN

Also know as an intensive roof, this heavyweight roof system is used in place of a conventional roof. A flat, waterproof membrane, drainage layer and a thick layer of soil, vegetation and hardscape for garden access is typical for a roof garden. Weight will be a big consideration in choosing this system.

ECOROOF

An ecoroof (aka extensive roof or green roof) is a lightweight vegetated roof system used in place of a conventional roof. Ecoroofs are typically made of a waterproof membrane, drainage material, a lightweight layer of soil, and a cover of small plants. The plant selection is limited and small in scale. Ecoroofs are not intended to be accessed except for maintenance.

PERVIOUS PAVERS PARKING LOT

Pervious parking lots are made of materials that allow water to permeate through them. Pervious pavement or pavers let the water pass through the material to a precisely planned reservoir base of crushed aggregate, that allows the water to infiltrate into the ground

PARKING LOT SWALES

Swales are gently sloping depressions planted with dense vegetation (often grass) that treat stormwater runoff from rooftops, streets and parking lots. As the runoff flows along the length of the swale, the vegetation slows and filters it and allows it to infiltrate into the ground. Where soils do not drain well, swales are lined and convey the runoff to a dry-well or soakage trench. A swale can look like a typically landscaped area.

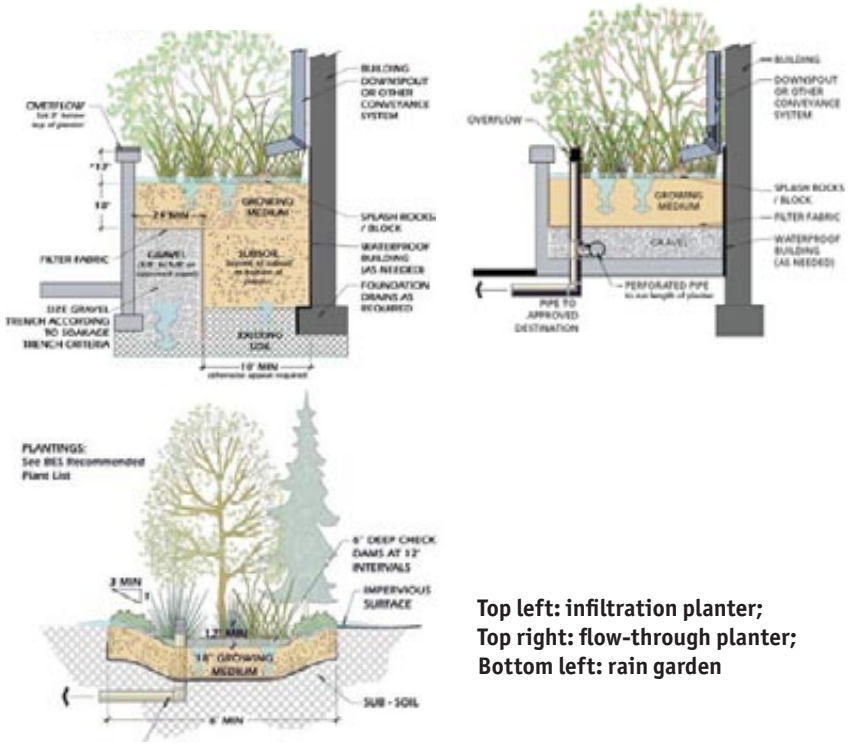
SIDEWALK PLANTER WITH TREES

There are two types of planters: infiltration planters and flow-through planters. Both types are similar in that they carefully layer gravel, soil and vegetation but the final destination of the water is different. The infiltration planter allows the water to filter directly back into the ground. Flow through planters are used when native soils don't drain well and it is necessary to put the water into the City of Portland's stormwater system after slowing down the flow. When these planters are handling more water than just run-off from the sidewalk, it is important that the soils are tested for adequate drainage. Plant and tree selection are important to ensuring the longevity of the planter.

NATURESCAPING

Whenever possible, it is beneficial to all parties to plant trees and native plants instead of constructing impervious surfaces. A single tree with a 30 foot crown can intercept over 700 gallons of rainfall annually. Evergreen trees will capture more rainwater in winter months.

Integrated rainwater-courtyard gives the gathering space a natural setting (Main and Harrison St, Milwaukie)



Top left: infiltration planter;
Top right: flow-through planter;
Bottom left: rain garden

Pervious surfaces allow water to drain into the ground

Granite paver inlays in Chinatown distinguishes this part of downtown

Alternative Transportation

Automobile traffic has dominated American cities since the mid-20th century but the general public is realizing that other forms of transport are more appropriate for moving about within local shopping hubs. It is important for a district to create a plan to accommodate all the various methods that people might arrive in your district to do their business.

PEDESTRIANS

Safety: sidewalks need to be continuous to all areas of your district. They should be well maintained and unbroken. Make sure that the over-sized street trees are not fracturing and raising sections of sidewalk that could be tripping hazards or obstacles for the disabled.

Crosswalks: pedestrian crossing areas should be clearly marked and frequent enough to be convenient for walkers to visit businesses on both sides of the street. Crossing signals and ADA corner ramps are helpful to stop car traffic and make pedestrians feel safe while crossing.

Shelter: awnings and recessed openings above business storefronts provide shelter from the frequent Portland showers and (less-frequent) hot summer sun.

MASS TRANSIT

First Impressions: many people arrive and depart from your district at the local bus and MAX stops. Does your district make this a place to feel welcome while waiting?

Support: provide convenient food and drink, way-finding signage, garbage receptacles and shelter near the transit stop (a dedicated structure, nearby awning, street tree).

Artwork: transit locations can be great places for art. It is an opportunity for a district to build a memorable identity.

BICYCLISTS

Safe pathways: bicyclists are a big faction in the Portland environment. They don't fit completely in either the pedestrian zone or the automobile traffic zone. Portland's Bureau of Transportation has made designated bike paths along the roadways as a means to address the needs of a bicyclist. Each district should evaluate how bicyclists are adequately accommodated within their boundaries.

Identify pathways: within a district there might be scenic parks, waterways or wetlands that offer opportunities to channel cyclists into your neighborhood. A new bike path through your district could bring daily bike-commuter traffic right by down your main street. Convenience plays a big role in offering services to a commuter.

Bike Parking: an important consideration to make. Read about the subject in the Streetscape bike parking section.

MOTORCYCLISTS

Frequently overlooked as a means of transportation in the metro-Portland area, motorcyclists are a growing means of transportation, when you include scooters. Because Portland win-

ADA crosswalk ramps with a tactile warning mat.

Bicycle racks

Ample bicycle parking a safe distance from the road adds vitality to neighborhood cafes and restaurants (N. Albina Ave and Blandena St)

Electric car charging stations offer an alternative fuel source

Companies provide convenient car-sharing (auto rentals) at various parking spots throughout the city

ters are not often compatible with motorcycle riding, it makes sense to have seasonal spots designated for them. Remember one parking space can accommodate 4-5 motorcycle patrons.

ELECTRIC POWERED AUTOMOBILES

As petroleum products become more expensive neighborhood districts will see more alternative energy source vehicles. Can your district accommodate an electric charging station? Could the station be supplemented with a solar panel? Talk to you local utility for programs available to your district.

CAR-SHARING

Does your community have a designated space for a car share? This could allow employees or business owners who frequently travel to out-of-office meetings to leave their cars at home rather than parking in a potential customer space.

New Development

The stepped-back facade integrates the main floor with the neighborhood storefronts but provides additional privacy and outdoor space to the upper residences (SE 13th Ave and Bidwell St)

New setback requirements can make street wall alignments difficult to maintain but this new development still relates to the neighboring context (N Mississippi Ave and Shaver St)

New Development Principles

Every district has vacant lots or incompatible buildings in the built environment. These properties present exciting opportunities for new construction. Buildings represent a tremendous investment and will outlive most of the community residents, they therefore need to be carefully considered. The design principles for creating a new building or significant addition are often complex and context specific. A professional design team will be required, along with a much deeper understanding of the municipal codes and requirements. For these reasons, the Portland Main Street Design Handbook will touch on the subject, and encourage the reader to explore additional civic resources or your district-specific design supplement.

Districts evolve over time and as a result, it is natural to see a variety of architectural styles and construction methods. A new building should be current, yet designed to respect the context of the existing structures around it. It is generally agreed that a new building should not pretend to be historic-kitschy. Detailing that mimics period architecture is easily recognized as fake and takes away from the authenticity of the real history in the district. At the same time, a building that feels alien in its context and calls too much attention to itself takes away from the unity of the district. A better approach is to compliment the character of its neighbors in terms of scale, storefront pattern and design details - these buildings will strengthen the district over time. The goal is to build a district that is more than the sum of the parts, with each element making an important contribution.

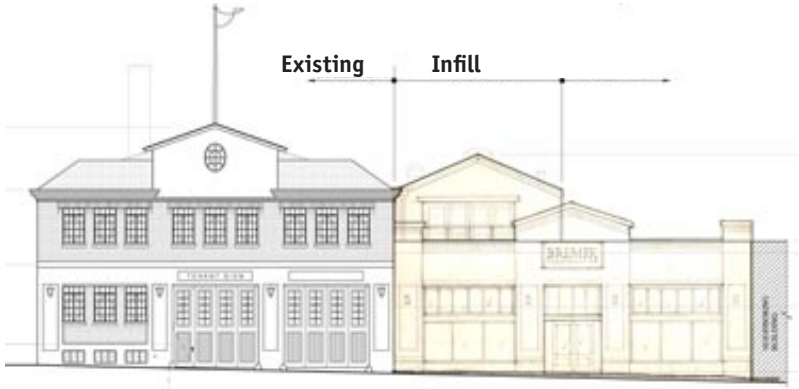
Beyond recommending a "good neighbor" policy for design, there are too many regulations specific to each building type, site, and the neighborhood to develop a concise set of fundamental guidelines. The risk is recommending advice that is contradictory to the city of Portland's comprehensive planning and building codes.

If new construction and infill projects play a major factor in the goals of a district, Portland Main Street encourages the Board of Directors to focus on developing a district design plan to define and understand the potential opportunity sites. Furthermore, the design committee should develop a district specific design supplement that can be attached to this Portland Main Street Design Handbook discussing the goals and principles for new development. A clear set of guidelines will make it a lot easier to uphold your districts expectations for new construction.

Contemporary Portland developers and architects have created many exemplary projects. This chapter includes a few photos of projects that have found successful design solutions that strengthened the urban fabric of their community. There are many more examples, and exploring the city for both the good and the bad is encouraged.

When planning a new project, it is important to remember that there are numerous codes and regulations set in place by the City of Portland for each zoning type. Additionally, there are often overlays of Community Design standards and/or Plan District regulations that may dictate more specific guidelines on the many different design considerations for your project.

Understanding your specific zoning and adhering to the various design guidelines will help define the parameters of your design process. Refer to the City of Portland's Zoning Code Title 33 for civic guidelines that apply to your district.



This drawing delineates the original firehouse with the new infill project next to it.

Carefully restored buildings along with new construction can work well to compliment each other. Changing brick color clearly defines these two buildings. (SE 11th Ave and SE Stark St)

This infill project adopts the scale and massing of it's surrounding context (NE 18th Ave and Alberta St)

The resurgence of mixed-use buildings give life to Portland's neighborhoods when retail and residential coexist in one building. (SE 33rd Ave and Belmont St)

Innovative use of durable materials and screened residential balconies make this infill project notable (SE 35th and Belmont St)

Creating a rhythm of forms to break up large facades is helpful when integrating into traditional neighborhoods. Modern materials should be sensitive to the architecture of the neighboring buildings. (SE 35th and Hawthorne St)

Appendix

Portland Main Street Organizations

Portland Development Commission (PDC)
222 NW 5th Ave.
Portland, OR 97209
General phone: 503-823-3200
http://www.pdc.us

Portland Main Street -- Main Street Coordinator
PDC
222 NW 5th Ave.
Portland, OR 97209
Phone: 503-823-3234
http://www.pdc.us/bus_serv/business_support/mainstreet.asp

DESIGNATED MAIN STREET NEIGHBORHOODS

Alberta Main Street
http://www.albertamainst.org/

Hillsdale Main Street
Http://hillsdalemainstreet.org/

St Johns Main Street
http://stjohnsmainstreet.org/

Regulatory Agencies & Internet Resources

Portland Bureau of Development Services (permitting services)
1900 SW 4th Ave., Ste. 5000
Portland, OR 97201
(503) 823-7357
http://www.portlandonline.com/bds/

Portland Bureau of Development Services (planning + zoning)
1900 SW 4th Ave., Ste. 5000
Portland, OR 97201
(503) 823-7526
http://www.portlandonline.com/bds/

Portland Bureau of Environmental Services - (stormwater)
1120 SW 5th Ave.
Portland, OR 97204
http://www.portlandonline.com/bes

Portland's Urban Forest-Parks & Recreation (street trees)
1120 SW Fifth Ave #1302
Portland, Oregon 97204
503-823-4489
http://www.portlandonline.com/parks/index.cfm?c=38294

Portland Bureau of Transportation (sidewalks+streets)
1120 SW Fifth Ave, Suite 800
Portland, OR 97204
503-823-5185
http://www.portlandonline.com/transportation/

CITY OF PORTLAND WEB LINKS

Portland Maps - (general property information)
http://www.portlandmaps.com

Portland Zoning Plan Districts (regulation overlays)
http://www.portlandonline.com/bds/index.cfm?c=43094

Portland Permitting Early Assistance (project start-up Q & A)
http://www.portlandonline.com/bds/index.cfm?c=36648

Portland Parks & Recreation Urban Forestry (tree permitting)
http://www.portlandonline.com/parks/index.cfm?c=39712

PP&R Brochure on tree installation, removal and pruning
http://www.portlandonline.com/parks/index.cfm?c=39712&a=164329

Portland Pedestrian Design Guide (curb cuts+street planters)
http://www.portlandonline.com/transportation/index.cfm?c=36167&a=84048

Portland Planning Atlas
http://www.portlandonline.com/portlandplan/index.cfm?c=51992

Portland Zoning Code Signage Requirements
http://www.portlandonline.com/auditor/index.cfm?c=28196

Portland Zoning Code Storefront Regulations
http://www.portlandonline.com/bps/index.cfm?c=31612

STATE

Oregon Main Street
http://www.oregon.gov/OBDD/mainstreet/home.shtml

State Historical Preservation Organization (SHPO)
http://www.oregon.gov/OPRD/HCD/SHPO/

NATIONAL

National Trust Main Street Center®
http://www.preservationnation.org/main-street/

National Trust Main Street Center®. *Revitalizing Main Street: A Practitioner's Guide to Comprehensive Commercial District Revitalization*. Washington DC: National Trust for Historic Preservation, 2009. Print.

National Trust for Historic Preservation
http://www.preservationnation.org/

Secretary of the Interior's Guidelines for Rehabilitation
http://www.preservationnation.org/resources/faq/historic-homes/secretarys-standards.html

BIKE PARKING

Installing bike parking
http://www.portlandonline.com/transportation/index.cfm?print=1&a=58409&c=34813

Bike Corrals
http://www.portlandonline.com/transportation/index.cfm?&a=250076&c=34813

Bike Parking Application
http://www.portlandonline.com/transportation/index.cfm?&a=270766&c=34813

SUSTAINABILITY

Sustainability at Work (sustainability chapter - intro)
http://www.bestbusinesscenter.org/

Sustainable Stormwater Management Solutions
http://www.portlandonline.com/bes/index.cfm?c=31870

Earth Advantage (sustainable new construction programs)
http://www.earthadvantage.org/programs/commercial-new-construction/

Living Building Challenge (self-sustaining building goals)
https://ilbi.org/

CONSERVATION, PRESERVATION, EDUCATION AND ADVOCACY

Historic Preservation League of Oregon
http://www.historicpreservationleague.org/

Office of Neighborhood Involvement (crime prevention - human safety)
http://www.portlandonline.com/oni/

Walk Score (streetscape chapter – vacant lot)
http://www.walkscore.com/

All images are from the Portland area and provided courtesy of Emerick Architects P.C. unless specifically noted otherwise.

Main Street
NATIONAL TRUST FOR
HISTORIC PRESERVATION