4. SITE AND BUILDING DESIGN GUIDELINES

Site and building design are integral pieces in the creation of a successful urban place. The pedestrian and public realm is framed by buildings and adjacent open spaces. It is the arrangement and character of the buildings, as well as the quality of the spaces in-between, that determine the quality of the urban form as a whole.

The following section builds on the principals in the Urban Design section of the Comprehensive Plan with detailed examples of how to implement those concepts. Photographs, diagrams and design suggestions provide guidance on how to approach the complex design challenges that arise when transforming an existing suburban environment into a new urban one. These Guidelines do not prescribe an architectural style, but it is hoped that a variety of designs will work together to create a unique and identifiable destination that is Tysons.

The Plan’s vision for Tysons encourages an urban form that achieves the following:

- A consistent build-to line or street edge that frames the public realm but also allows for architectural variation and interest (A).
- A street edge that is fronted by active uses, such as retail, commercial, or residential, along which frequent entrances are located to activate the public realm (B). Blank walls should be avoided.
- Variation and creative articulation of the building façade to create diversity and an interesting, vibrant pedestrian experience (C).
- Buildings that accommodate their intensity using greater heights and smaller building footprints (D).
- Varied building heights, with the tallest located on Boulevards, Avenues and Collectors, and near Metrorail stations.
- Incorporation of parking in underground and/or internal structures wrapped by active uses.
- Inclusion of high-quality, well-integrated urban park elements and public spaces (E).
- Use of varied and high quality building materials.
- Use of step-backs to provide light and air at the street level.
- A commitment to excellence in site and building design.
Consistent Building Edge

Build-to Line

A: Michigan Avenue Building Edge, Chicago, IL. Image: 8Stours.com
B: Ground floor active uses, Reston, Virginia
C: Ground floor retail, Washington, DC
D: Urban mixed-use building, Reston, Virginia
E: Gramercy at Metropolitan Park, Arlington, Virginia
Once land uses, building intensity, street grid location, and streetscape dimensions have been determined (see Chapter 2), individual site design begins to take shape. Site design should balance the optimal locations for each use, spatial constraints, environmental conditions, adjacencies, and building regulations to create a cohesive, well-designed sense of place. Creation of a consistent street wall by adhering to build-to-line recommendations and successful location of program elements such as iconic buildings, parking structures, urban park spaces, and commercial and residential uses, will result in a functional and interesting urban environment.

**Design Suggestions:**

- Locate the bases of buildings along the build-to line (A) as described in Section 4.1A of the Guidelines.
- Orient the tallest buildings towards the busiest or widest streets (B), or when appropriate to highlight viewsheds or signature sites (see Section 4.7).
- Orient commercial and large-scale retail entrances towards Boulevards, Avenues, and Collectors.
- Locate ground-floor commercial uses to face the street, with one or more public entrances directly from the public sidewalk. Storefronts should be at the same grade as the sidewalk and building zone (C).
- Orient retail and residential entrances towards Avenues, Collectors and Local Streets.
- Conceal service entrances, loading docks, and trash collection areas from view within the building mass or by locating them along Service Streets. Some short-term retail loading may be located on the street.
- Locate public spaces and urban parks with careful consideration of adjacent uses, topographic conditions, solar orientation, and pedestrian connectivity (D). They should be accessible and easily viewed from public rights-of-way (See Chapter 6, Urban Parks).
- Locate building and service entrances safely and appropriately. Limit the number and width of vehicular entrances, when possible, to reduce potential conflict points with pedestrian flow.
Design Suggestions (cont.):

♦ Consider the placement and function of adjacent open spaces when locating public open spaces within a site, both existing and proposed within adjacent developments. This will avoid possible duplication of public space programmatic elements and functionality. Coordinating open spaces can also help enhance their overall value and impact.

♦ Integrate telecommunications equipment and other building appurtenances into the building design, and screen them appropriately.

♦ Utilize rooftops for private open spaces and/or resource conservation, energy collection and management. For instance, use green and blue roof technology for stormwater capture and treatment (E). All roof tops, including towers, podiums and parking decks should be treated or screened appropriately. Mechanical and utility areas may be excluded from treatment if necessary, but should be screened.

♦ Accommodate requirements for stormwater storage and discharge, and underground utility locations when locating buildings and landscaping.
4.1A Build-to Lines

Building placement and orientation is critical to enhancing a community’s character and promoting pedestrian activity. Buildings should be oriented toward streets and have easily recognizable pedestrian entrances. Build-to lines provide a way of creating visually interesting, pedestrian-oriented streetscapes by arranging buildings and entrances towards the street. As opposed to setbacks that establish areas in which a building cannot be constructed, build-to lines specify where a building is to be built on the property. Generally, the build-to line is located at the back of the building zone (as established by the streetscape) and establishes the limit of the building envelope.

Building facades should define a continuous street and highly articulated building by building wall mass along all build-to lines. Building projections, such as awning and canopies, should not be precluded when implementing the build-to line. Designated public open spaces which meet the urban parks typologies are allowed to break the build-to line.

**Design Suggestions:**

- Locate build-to lines by reviewing the streetscape requirements for each street frontage. The build-to line will be located at the back of the building zone, and should be indicated on all rezoning, site and building plans (F).

- Locate the first two stories of the building facade along the build-to line, but not intruding into the streetscape (G). This will provide a continuous building edge, but also allow for architectural variation.

- Provide recesses for important building entries and outdoor dining. Large recesses, greater than 10 feet in depth, should occupy no more than 25 percent of the street frontage (H).

- Provide steps and ramps within the building zone if they are necessary.

- Provide variation in the building façades on upper stories and roof lines to create variety and interest, as well as to accommodate step-backs for light and air.

- Awnings, canopies, and other building projections should be scaled appropriately and provide enough horizontal and vertical clearance to avoid conflicts with street trees.

- Buildings and any projections should avoid conflicts with trees and be located outside of the future right-of-way.
Opposite Left: Urban building edge along sidewalk, Washington, DC

Opposite Right: Building with unacceptable setbacks and no building presence at the streetscape

Top Left: Building plan indicating build-to-line, including building articulation

Top Right: Building axonometric indicating build-to-line, including building articulation
Sustainable site and building strategies described in the Leadership in Energy and Environmental Design (LEED) certification program and suggested by the Sustainable Sites Initiative (SITES) should be considered early in the site design process. These can include optimizing site potential through solar orientation, increasing resource conservation, preserving or restoring habitat, and effective stormwater management. Addressing these issues should not wait until a basic building design has been completed. Early consideration will help avoid issues that are difficult to resolve later and can assist in achieving green building certification.

**Design Suggestions:**

- Incorporate sustainable building practices in the site design. For instance: orient buildings to effectively benefit from sunlight exposure, solar energy collection, wind energy collection, and positive air flow within the building.

- Consider preserving or restoring natural habitat areas on-site. These locations may be incorporated into open spaces and landscape buffers. Mature trees with attractive canopies can also be preserved and integrated creatively into the streetscape or parks (A).

- Determine what kinds of systems will be utilized for stormwater treatment and/or reuse, so that locations for these systems can be identified and integrated appropriately into developments. Consider incorporating infiltration into the streetscape (B).

- Determine locations for rainwater collection, including rooftops, terraces, cisterns, and planting areas so that the site layout and building footprint can be designed to accommodate them as applicable (C).

- Incorporate strategies for reducing heat island effect. Include the use of green roofs, rooftop screening, and high-reflectance building materials (D).

- Implement building systems that facilitate reuse of rainwater, condensate, and stormwater.

- Include bird-friendly site and building designs that reduce mortality and provide habitat opportunities. These can include addressing glazing hazards and reducing lighting which attracts birds at night.
4.1B Sustainable Site Design

Opposite: Omega Center for Sustainable Living, Rhinebeck, NY, Image: Inhabitat.com

Top Left: Mature streetscape, Tysons, VA

Bottom Left: Bioretention planters, 1050 K Street, NW, Washington DC, Image: LandscapeOnline.com

Top Right: Rain/stormwater system at 1050 K Street, NW, Washington DC, Image: LandscapeOnline.com

Bottom Right: Green roof and terrace, 1050 K Street NW, Washington DC, Image: LandscapeOnline.com
4.2 Building Massing

Building massing refers to the height, volume, and general shape of a building and how it relates to other building masses in a city and in a neighborhood. Massing begins as a diagrammatic tool which allows a design to take shape in three dimensions.

Successful massing evaluates land use, spatial and architectural requirements, environmental elements, topographic relationships, technical requirements, and relationships to adjacent sites to create a successful urban space.

A creatively massed development incorporates techniques such as step-backs and building height variation to create urban spaces that function well for users. It creates a sense of place at the pedestrian realm and an interesting skyline that is viewed from afar and within Tysons.

**Design Suggestions:**

- Vary building heights to create an interesting skyline. Consider viewshed opportunities for all buildings. The Plan establishes a range of building heights varying by distance from the Metro and should be referred to when designing a building mass strategy.

- Avoid maximizing the height allowance for every building, create a variety of building heights and tower treatments to avoid a static skyline (A). The tallest building heights should be reserved for iconic and signature buildings.

- Relate the massing of proposed architecture to existing and proposed architecture on adjacent sites. This can be achieved by creative transitioning between building height tiers, or architecturally breaking facades into a series of smaller elements (B).

- Creatively integrate programmatic elements such as parking structures, large retail spaces, theatres, and lecture halls that require a footprint that dominates a given block into the core of a building mass; these should not dominate the adjacent street wall (C).

- Integrate building podiums and towers seamlessly. In some cases, they may be indistinguishable from each other. Their impacts, to the pedestrian realm and the character of the district, particularly due to size and scale, should be considered.

- Fire access and required setbacks should be considered in the design of building podiums and towers; if the buildings are located close together, an additional stepback may be required.
4.2 Building Massing

**Design Suggestions (cont.):**

A—Static or constant building heights are undesirable

A—Varied building heights are desirable

B

Opposite: New York City Skyline, Image: Skyspace International
Above Top Left: Undesirable Massing diagram
Above Top Right: Desirable Massing diagram
Bottom Left: E Street NW streetscape, Washington DC
Bottom Right: Mosaic District, Fairfax, VA, Image: LF Jennings, geostructures.com
4.2A Building Massing - Base

The building’s base generally comprises the first several floors at the bottom of a mid- or high-rise building. It includes the major pedestrian and vehicular entrances, general building facilities, and may include structured parking.

The base is an important component of the building mass because of its direct relationship to the pedestrian realm, both in scale and proximity. The base is the portion of the building which people directly experience when walking by or into a building. Podiums, which are a type of building base incorporating structured parking, pose particular design challenges which should also be addressed.

The building’s base spatially defines the public realm at an appropriate scale for adjacent streetscape’s, open spaces, and buildings. The base should be designed in a way to minimize the impact of parking, loading, and building services that are detrimental to the pedestrian experience.

**Design Suggestions:**

- Scale the building’s base or podium height to the width of the adjacent street and streetscape. The Plan recommends a ratio of street width (measured from building face to building face) to podium height from 1:1 to 1:2 (A). This proportion protects access to sunlight and the view of the sky from the public realm. It prevents the creation of large, imposing building facades on relatively narrow streets and prevents a wind-tunnel effect. On wider streets, this ratio can be relaxed, as the spaces will be less dark and windy due to the space created by the street width.

- When adjacent to existing buildings, the proposed base height should take into account the existing context. The base can relate directly in height, or utilize architectural details, step-backs, and/or materials, to address the adjacent buildings.

- Above the building base, step-backs should be utilized to reduce the impact of building height and shadows on the street and open space (B). Step-backs can vary in depth and location, depending on the size and proportion of the building, but generally should be a minimum of 10 feet in depth. Lobbies, building towers should come directly to the ground in some locations.

- Building articulation should be used to create interest in the building base and enhance the pedestrian experience. Material changes may be used in some cases to distinguish the building base (C).

- First floor heights should be tall enough to be flexible for a variety of uses, including retail. Heights should range between 16 and 20 feet tall.

- When podiums are utilized, vary heights, architectural treatments, and articulation to break up the monotony of large podium decks. The integration of tower elements so that the podium is not evident is sometimes preferable.
Opposite: Building podium and towers, L’Hermitage, Vancouver, BC, Image: SkyscraperPage.com
Above Top Left: Stepback Diagram from the Tysons Comprehensive Plan
Above Bottom Left: Building base defined by change in materials, Reston, VA
Above Right: Step-back above second floor, Reston, VA
The tower is the portion of the building located above the building base, and typically includes the majority of the habitable building area, whether office or residential. Towers do not include parking. Towers can vary in height, and should comply with the height recommendations found in the Plan.

In general, towers should be designed to limit their impacts (scale, shadow, wind) on adjacent streets, open spaces, and other public amenities. Towers should be located to maximize potential views while minimizing negative impacts on adjacent buildings.

Towers can greatly enhance the character of a district by contributing to an interesting skyline. Varying building heights and architectural styles can help identify the character of the area.

**Design Suggestions:**

- Orient towers to minimize shadow and wind impacts on surrounding streets and parks. In general, taller buildings should be oriented towards wider streets. Towers should be sited and spaced from one another in a manner that allows for light at the street level and minimizes long periods of shadow on the street, adjacent buildings, and open spaces. A shadow study, which is a submission requirement for all development plans, should be used as a tool to determine if towers are properly located.

- Consider the size of the tower floorplate. In general, smaller floorplates are preferable since they will have less impact views and create smaller shadows. Large floor plates can cast substantial shadows and block views. Multiple slender building towers may be more appropriate than a single massive tower (A).

- Larger floorplates should be articulated to provide visual interest and help create a unique skyline. This can be achieved through varying floorplate size, step-backs and the integration of balconies or terraces.

- Consider extending the architectural treatment of the building tower to the ground plane in some important locations, such as lobbies and other monumental entries to create variety (B).

- Provide appropriate spacing between building towers to allow for light and views.

- Vary tower massing to contribute to a more interesting skyline (C).
Opposite: Reston, VA
Above Top Left: Residential towers, Reston, VA
Above Top Right: Mixed-use building with building element intersecting ground, Reston, VA
Bottom: Variation in Tysons skyline, Tysons, VA
4.3 Building Articulation

Buildings gain their character and distinction from innovative articulation. Articulation is the use of building details to transform a rectangular mass into a composition of vertical and horizontal planes. Features such as architectural materials, fenestration, bays, doors, cornices, rooflines, terraces, and other elements can be used to express a building’s form and identity.

Articulation creates building detail and variety, an interesting building façade at the street, and defines the skyline. Variety in articulation will depend on the building’s style, uses, location, and relationship to other spaces, and will develop throughout the design process. Articulation must be considered early in schematic design as it conveys the vision for a building. Articulation should also be communicated in development plans and indicate how it will relate to the public realm.

**Design Suggestions:**

- Create a variety of horizontal and vertical planes to break up the mass of large buildings and to create visual interest along the facade (A).
- Consider breaking facades into sections through the use of different materials or architectural treatments (B).
- Emphasize the difference between the base and tower through step-backs, material changes, and/or changes in fenestration, when appropriate to the architecture.
- Highlight important building features such as entrances through unique façade elements. Awnings and canopies can also be utilized.
- Create different patterns of façade treatment for different uses, such as retail versus residential. Different uses have different architectural requirements, such as window types and patterns, which can be expressed on the building façade (C).
- Create an interesting street edge by introducing a variety of fenestration patterns, entries, and portals.
- Use largely transparent facades at the lower levels and adjacent to the streetscape where ground floor retail, commercial, community or other non-residential uses occur (D). Opaque, mirrored and translucent glass should be avoided as they are not transparent.
- Utilize a variety of high-quality materials to create architectural interest.
4.3 Building Articulation

Design Suggestions (cont.):

- Avoid exposed parking garages. In addition, lengthy parking garages (exceeding 180 feet) which have architectural treatment should incorporate articulation and detailing to provide visual interest and break up monotonous facades.

- In residential buildings, use less ground floor transparency for private uses, such as living areas. Residential lobbies and other common spaces should exhibit higher transparency and should provide a visual connection to the pedestrian realm.

- Grade-separate residential uses located at the ground level from the public sidewalk to distinguish the units and to provide privacy. This creates the opportunity for stoops, bays, porches or entries that establish a distinct transition between the private realm and the public realm (E).

- Locate the sill of ground floor windows above the eye level of passers-by on adjacent sidewalks to provide some privacy in residential buildings.

- Locate entry stairways to residential units, such as walk-ups, so that they do not impinge on the public right-of-way, including the sidewalk zone.

Opposite: Building articulation, Reston, VA
Above Top Left: Building articulation façade treatment, Washington, DC
Above Top Right: Building articulation, Reston, VA
Bottom Left: Ground floor articulated façade with at least 60% transparency.
Bottom Right: Walk-up units, grade separated from sidewalk, Washington, DC
4.4 Parking Design

In order to create an activated and pleasant pedestrian realm, the vision for Tysons calls for parking that is accommodated below grade. However, when above grade parking is proposed, it should be located within the building mass and be hidden from view from the pedestrian realm. As parking needs drop over time, there is an opportunity to transition unneeded parking at or above the ground level into usable square footage; therefore, when above-grade parking is designed, the future reuse should be considered in the initial design phases. Structural design elements such as ceiling heights, structural column locations, and the placement of other features that could impact the future reuse of those floors should be considered early in the process. Surface parking lots and stand-alone structured parking lots are highly discouraged. The following design suggestions build on the general recommendations and examples for parking design in the Comprehensive Plan.

**Design Suggestions:**

- Parking should be located underground as much as possible.

- Parking may also be located partially above grade when located in the center of a block (A). For most pedestrian corridors, above-grade parking decks should be completely wrapped by active uses (office, residential, retail, etc.) so that parking is not visible from the street (B).

- The top floor of parking structures should be covered with green roofs, park spaces, or recreation amenities so that the parking is not visible (C).

- Drop-off areas should be located within parking structures or located along the curb to reduce vehicular conflicts with pedestrians.

- The number and width of curb cuts and parking access points should be limited to reduce conflicts with pedestrians.

- Access to parking facilities should be limited to Service Streets, Local Streets, and in limited cases, Avenues or Collectors, and should be located to maximize continuity of the active street frontage (D).
4.4 Parking Design

Opposite Left: Santa Monica Civic Center Parking—Moore Ruble Yudell Architects and Planners

Opposite Right: Example of consolidated parking entrance away from continuous activated building frontage.

Above Left: Example of below-grade and above grade parking within a building mass.

Above Right: Example of recreation and park amenities on top of parking that is wrapped in active uses and hidden from view.
4.4 Parking Design

**Design Suggestions (cont.):**

- Site constraints may occasionally preclude the ability to bury or wrap a parking structure so as to fully screen it from the street. In such cases, any visible edge should be oriented to the least significant pedestrian corridor (see Section 2.4). Additional architectural treatment should be provided that screens the garage exterior from view, such as public art installations, appropriately designed vertical planting (see Section 3.6, Planting Design), or other architectural features.

- Creative façade treatments and architectural form should be used to accommodate the mechanical and ventilation appurtenances associated with parking facilities.
First floor of parking garage is lined with retail uses, and architectural treatment is provided above (A). This is appropriate for garages with only a few levels facing secondary or tertiary pedestrian corridors.

Parking garage on a Tertiary Pedestrian Corridor is lined with two story townhomes, and includes a small front yard for landscaping and additional screening (B). Architectural treatment of the garage is provided above the townhome liner.
4.5 Safety and Security Design

Safety is a concern in all communities. Design strategies can be implemented that help increase visibility and foster positive social interaction. In addition, Tysons will be a destination for many kinds of uses, including public facilities and government offices, in addition to private businesses. Public and certain private buildings can be subject to additional rules and regulations regarding security and access. These requirements can directly impact site and building design in a way that is detrimental to the public realm. Heavily fortified buildings can be contrary to an active and inviting Tysons if they are designed inappropriately. Creative steps can be taken to integrate security measures while still creating a welcoming and attractive Tysons.

Life safety is an important aspect to be considered in urban design of public spaces. Spaces and buildings should be designed to accommodate fire truck and ambulance access while not detracting from the high-quality design envisioned for Tysons. Fire access should be one of the early considerations in the design process, and it should be integrated into the design.

The following recommendations provide some strategies to meet this goal.

**Design Suggestions:**

- Consider Crime Prevention through Environmental Design (CPTED) strategies which help to increase natural surveillance and discourage criminal activity.

- Consider using security elements such as hardened planters that are in harmony with the site and architectural conditions and integrated in a manner that will not stand out in well-designed streetscapes. See Chapter 3 for streetscape recommendations that might be considered related to security.

- Provide retail or other active uses on the site in the areas required as security setbacks for the main building. Generally such uses do not require the same setbacks or security measures. As a result, they may be oriented along the build-to line to help create an urban building edge.

- Locate parking garages that are not subject to setback requirements close to the street as appropriate. Integrate retail or other uses at the ground floor, and utilize attractive garage screening or architectural treatment to hide the garage.

- Provide functional outdoor spaces that invite use by employees, visitors, and the general public. Such spaces can be integrated with security setbacks and act as welcoming locations for public facilities. Open spaces also establish a strong civic presence for public buildings.

- Provide wiring and other hardware for public safety communications, as well as locations for emergency and back-up generators.

- Identify life/safety access needs and integrate them into the public space design early in the process to avoid unsightly retrofits.
4.5 Safety and Security Design

Above Top Left: Portland State University, Portland, OR, Image: www.insituarchitecture.net
Above Bottom Left: Avenir Place, Merrifield, VA
Above Top Right: Ecology Building, Image: cornell.edu
Above Bottom Right: Navy Yard Walk, Image: CapitolRiverfront.org
4.6 Topography and Building Design

Many parts of Tysons have significant changes in elevation and other variations in topography that can provide a challenge when designing urban neighborhoods. As a result, consideration should be given to designing building edges that respond to the topography without compromising the pedestrian experience along the streetscape. For example, steep slopes should not result in large retaining walls or long expanses of blank building walls. Creative design strategies can allow appropriate active uses and pedestrian movement even in areas with significant grades. Further, topography can provide additional design opportunities within parks and open spaces.

Design Suggestions:

- Storefronts along steeply sloped streets and sidewalks can be a challenge. Consider varying first floor heights to accommodate changes in grade and still allow direct pedestrian access from the sidewalk into active uses (A). Also, extend glazing to the ground to avoid blank walls.

- Steps and ramps for building access should be located within the building zone (B). They should not extend into the sidewalk zone or obstruct pedestrian flow.

- Long and/or tall retaining walls are discouraged. When such features are necessary to accommodate significant grade changes, consider integrating active uses at sidewalk level. Tiered plantings and other landscape elements should be considered as a way to break up large walls.

Above Left: Typical storefront elevation on a sloping street.
Right: Rendering of stoops/steps located within the building zone.
4.6 Topography and Building Design

Above Top Right: Retail Streetscape, San Francisco, Image: http://urbanland.uli.org

Above Top Left: Residential streetscape with Grade Change, Image: pedbikeinfo.org

Above Bottom Right: Retail streetscape with Grade Change, Image: www.dbarchitect.com

Above Bottom Left: Residential streetscape with Grade Change, Image: www.plannerdan.com
Signature sites are recognized by their strategic locations within the urban fabric. They may highlight a particular vista or viewshed, or they can frame the edge of a special open space or terminate an important public street. Signature sites may also include unique and important civic uses, such as museums or theaters. Signature sites can act as enhanced placemaking opportunities described in the pedestrian hierarchy plan (see Section 2.4).

Signature sites may not include buildings at all. In fact, combinations of buildings and quality open spaces can be considered signature sites. These often help define a neighborhood and establish a sense of place. Innovative and unique designs should be considered for these sites. Although all new buildings in Tysons must complement the public realm and should adhere to the guidelines outlined in this document, a creative approach to signature sites is particularly important.

**Design Suggestions:**
- Display a commitment to the highest quality design, with an enhanced level of architectural treatment.
- Acknowledge the importance of the site by accommodating important views, corridors, and open spaces, and by providing visual interest.
- Not all sites require tall buildings or tower elements, although they may be appropriate in certain instances.
Opposite: Bryant Park, New York City, NY

Above Top Left: Strawberry Park, Merrifield, VA

Above Bottom Left: The Good Line, Sydney Australia. Image: Florian Groehn

Above Top Right: Dilworth Park, Philadelphia, PA

Above Bottom Right: Reston Town Center, Reston, VA