Issue Outline No. 4: Contextual Building Design

I. Purpose of this Outline
   A. Generally
   
   This issue outline is intended to provide background material to organize and stimulate discussion for the Advisory Committee meeting that is scheduled for May 17, 2018. It provides ideas for dealing with building design, and in particular, using building design to help ensure that a new building or a modified building “fits” into its context.

   Context can be experienced at a number of different scales (e.g., neighboring lots and the adjacent street; an entire neighborhood; an area of the City; or the entire City) and in a number of different ways (e.g., architecture, building mass, building placement, landscaping and topography, land use, traffic patterns, etc.), so it is important to consider the scales and perspectives from which the land development code should operate.

   Once those are settled, significant thinking and dialogue should take place to ensure that LDC standards will, on the whole, contribute to the desired character, quality, function, and vitality of the City in a meaningful way.

   B. Relationship to the Comprehensive Plan
   
   The Comprehensive Plan generally addresses community character and development quality. For example, Policy CC-1.2 says that the City “will promote integration and a sense of place within districts of the City through the context-sensitive design of new development.” Policy CC-1.3 says the City:

   will encourage new infill development to consider and be sensitive to the character of existing neighborhoods. Considerations shall include building scale, placement, size, height transitions, landscape, streetscape, and other design measures.

   Policy CC-2.2 says that the “City will promote high quality architecture, site planning, landscaping, signage, and lighting for new residential and commercial developments.”

II. Context
    A. Generally
    
    There are a number of different development contexts in the City (e.g., single-family neighborhoods, commercial strips, Olde Town, industrial areas, office buildings or office parks, open areas and parks, multifamily developments, and areas of adaptive re-use of single-family homes). Generally, within each context there is a certain amount of consistency with respect to the pattern of development. As such, there are two principal contextual challenges: (1) where the introduction of a new building or building expansion interrupts the existing pattern in a jarring and uncomfortable way; and (2) where the edges of two or more different contextual areas meet.

    Consider the five aerial photographs that follow, and how each of these two challenges is addressed in each:
B. Building Design

Context-sensitive building design may involve questions of use, scale, placement, massing, articulation, height, materials, color, windows and doors, architecture, and detailing. Consider the following architectural styles. Which of them, if any, complement each other? Would a neighborhood with multiple styles be comfortable? What are the elements of the building / architecture that matter?

Cape Code Style

Craftsman Style
Contemporary Style

Colonial Style

Dutch Colonial Style

Georgian Colonial Style

Mid-Century Modern Style

French Provincial
Greek Revival Style
Italianate Style
Mediterranean Style
Modern Style
Neoclassical Style
Prairie Style
Pueblo Revival Style
Western Ranch Style
Tudor Style
Spanish Style
Victorian Style
Cottage Style
Farmer Style¹

Neoclassical Style¹

Early 1970s Arvada²

Early 1970s Arvada Tri-Level²

Early 21st Century Arvada²

Early 21st Century Arvada²

¹ Source: https://www.diynetwork.com/how-to/rooms-and-spaces/exterior/26-popular-architectural-home-styles-pictures
III. Current Code

The current LDC addresses building design in Section 6.6, and Activity Center design in Section 6.9. What follows are summaries of the current standards, with a few footnotes and side-notes to stimulate thought and discussion about whether (and how) these standards are implementing the City’s planning priorities in a manner and to a degree that justifies their continued application.

A. All Buildings

As to building design (generally), throughout Arvada, all buildings must meet general standards regarding visual interest and compatibility, texture and relief, human scale detailing, public entries, materials, colors, and mechanical equipment screening.

B. Residential Standards

The LDC also includes specific building standards for all residential buildings:

- Architectural emphasis on location and importance of entryways
- Avoidance of tall, monotonous facades facing streets and parking areas
- Limitations on bright colors and reflective materials
- Standards for installation of siding materials
- At least 2 of the following elements on side facades of buildings on corner lots:
  - Changes in wall planes;
  - Changes in cladding materials;
  - Installation of porches, bay windows or balconies
  - Architectural detailing; or
  - Installation of windows or doors that overlook the street.

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2 Source www.realtor.com
Two-or-more story buildings on “through lots” (street in front and in back of lot) or abutting open space must:

- Have masonry finishes on 50 percent of the rear building elevation (excluding windows and doors, trims, and vents) from average grade to the eave or 9 ft. 6 in. above grade, whichever is lower; or
- A four-foot horizontal offset that affects at least 50 percent of the rear building elevation.

“Universal access” is “encouraged.”

C. Single-Family Residential Standards

In addition to the residential standards, there are a number of additional standards that apply only to single-family and duplex buildings:

- **Garages.**
  - 50 percent of all garages in a development must be designed in at least one of the following ways:
    - Recessed garage door
    - Separation of garage doors
    - Side-loading garage
    - Rear yard garage
  - Where 10 lots in a row face the same street, at least 2 must have a side or rear-loaded garage
  - Not more than 3 garage spaces on a single lot may face a street

- **Facades and Porches.** Facades and porches must be designed or provided as follows:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Minimum Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>75% brick, stone or stucco front façade up to the highest eve or 9’6”, whichever is lower</td>
<td>25% of all homes</td>
</tr>
<tr>
<td>Covered front porch with a minimum area of 50 sf., extending by 5 feet or more either forward or behind (courtyard) the front wall plane</td>
<td>An additional 25% of all homes</td>
</tr>
<tr>
<td>Either 50% brick, stone or stucco front façade up to the highest eve or 9’6”, whichever is lower, or a covered porch</td>
<td>An additional 25% of all homes</td>
</tr>
<tr>
<td>Neither a 75% brick or stone front façade up to the eave line, nor a covered porch</td>
<td>A maximum of 25% of all homes¹</td>
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</tbody>
</table>

¹The facade and porch requirements in the table above do not apply to the final 10% of lots or the final ten lots, whichever is smaller, in the approved final subdivision or approved final phase of a subdivision, provided that the number of homes with neither brick, stone or stucco cladding nor covered porches shall not exceed 30% of all homes.
• **Roof Design and Materials.**
  
  o **Roof Pitch and Design.**
    
    - Roof slopes, excluding covered porches and patios, shall have a minimum pitch of 5:12
    
    - Subordinate roofs can be of a lesser pitch, and shall have one-foot minimum overhanging eaves.
    
    - A house of a style that is traditionally associated with flatter roofs such as Prairie style may be allowed on a case by case basis as determined by the Community Development Director.
    
    - The maximum length of a continuous roof ridgeline is 35 feet. Roofs with dormers and other architectural details are exempt from this requirement.
    
    - At least 50% of all units shall have a roofline that changes elevation at least once.
  
  o **Roof Materials.** Roofs of single-family detached and duplex homes may be constructed of conventional asphalt roofs, but roofs constructed of clay or concrete tiles, slate, or similar material approved by the Community Development Director, or heavy duty/hail resistant dimensional composition material are preferred.

• **Repetitive Design.** Dwellings placed adjacent to or directly across the street from other dwellings shall have significantly different front elevations. For the purposes of this subsection, front elevations will be considered "significantly different" from one another if at least three of the seven design conditions set forth below are met as determined by the Director of Community Development:
  
  o The locations of at least 50 percent of the windows and doors differ by one foot or more.
  
  o The shapes of at least two window dormers and/or window bays differ by two feet or more.
  
  o The shapes of at least two gable ends differ by two feet or more.
  
  o The shapes of porches and/or other similar projecting design elements differ by two feet or more.
  
  o More than 50 percent of the front elevation cladding is of a different material.
  
  o The overall width of the front elevation differs by four feet or more.
  
  o The overall height of the front elevation differs by four feet or more.
D. Multifamily / Attached Residential Standards

In addition to the general residential standards, there are a number to standards that apply to multifamily or attached housing (except duplex). Multifamily housing must be designed to reflect the same level of quality, detail, and craftsmanship as single-family housing.

- Site Planning.
  - Multifamily sites of 10 acres or more shall include a minimum of one public street or private drive that is built to the City standards, is continuous through the site, and connects to a public street on both ends. The Community Development Director may waive this requirement for a through-access street or drive if the Applicant shows there are adequate alternatives available for residents and vehicles to travel through the development to adjacent properties and developments.
  - Primary structures must (to the extent practicable) be placed so that open space amenities occur between buildings, and so that open spaces are visible from curves in streets, to maximize the perception of open space within the development.
  - Primary structures and landscaping must (to the extent practicable) be located and designed so that residents can easily observe the common open spaces, circulation paths, and access points into the development.
  - At least 50% of required off-street parking has to be provided in garages, rather than surface lots. Where surface parking lots are used, they have to (to the extent practicable) be located between buildings, rather than adjacent to street frontages, “wherever possible.”

- Garages. Primary structures must be located and designed to avoid having more than five primary structures in a row presenting the same garage facade to the street, through the use of building orientation, side-loaded garages, and the use of non-garage units to break up the monotony of similar garage treatments.

- Wall Planes. Each facade greater than 100 feet in length, measured horizontally, must incorporate wall plane projections or recesses having a depth of at least 3% of the length of the facade and extending at least 20% of the length of the facade. No uninterrupted length of any facade may exceed 100 horizontal feet.

- Balconies, Porches, and Stairways. Multifamily residential buildings must provide at least 75% of the total dwelling units with at least one private outdoor yard, patio, or balcony with a minimum six feet along at least one dimension. The use of exterior staircases is discouraged without integrating into the overall design.

- Roof Design, Materials, and Equipment.
  - Roof Design. No continuous roofline may be longer than 100 feet.
    - Rooflines longer than 100 feet shall include at least one vertical elevation change of at least two feet.
The height of each multifamily building taller than 35 feet shall be stepped down from its highest roofline at least one full story on any end of the building located within 50 feet of a street-right-of-way or an adjacent area with single-family residential development.

All sloped roofs shall have overhanging eaves of at least one foot, and roofs with a pitch of less than 2:12 shall be screened by a parapet wall.

- Roof Materials. Roofs of multifamily residential buildings may be constructed of conventional asphalt (3-tab) roofs, architectural metal, or other acceptable material, but roofs constructed of clay or concrete tiles, slate, Masonite, or heavy duty/hail resistant dimensional composition are preferred. All composition shingle roofing shall be constructed using high profile, textured shingles.

- Rooftop Mechanical Equipment and Flues.
  - Rooftop mechanical equipment and appurtenances must be screened so that they are not visible from adjacent public streets or adjacent properties less than 200 feet away when viewed from five feet above grade level.
  - Screening enclosures must use at least one of the predominant materials used in the facades of the primary structure and one of the predominant colors used in the primary structure.
  - All air conditioning compressors must be completely screened.
  - All rooftop and wall vents and flues extending above the top of the nearest parapet must be painted with one of the predominant colors used in the primary structure.
  - Any rooftop equipment generating off-site noise must also be baffled or otherwise attenuated to direct unavoidable noise upward.

E. Nonresidential Standards

The current LDC also has standards for nonresidential buildings outside of the Olde Town Zoning District. Within the Olde Town Zoning District, the Standards of Section 6.2.5, Olde Town Building Form Standards, and the Design Guidelines for Olde Town Arvada, may be used to modify the general nonresidential standards.

- Materials and Colors.
  - All primary buildings must be constructed or clad with materials that are durable, economically maintained, and of a quality that will retain their appearance over time, (including but not limited to wood siding, pre-cast concrete, stone, brick, or stucco).
  - Architectural metals may be used only on industrial buildings. All buildings constructed of metal or metal cladding must conform to all applicable design standards for non-metal buildings.
Natural wood or wood paneling may not be used as a principle exterior wall cladding system, but durable synthetic materials with the appearance of wood may be used.

Materials intended for indoor finishes may not be used for exterior cladding.

Exterior siding may be of finish grade wood, plastic, or metal that simulates the appearance of wood siding, glass, natural or synthetic stone, brick, stucco, or textured block. Siding material must be continued down to within nine inches of finished grade on any elevation, except that siding shall be allowed to step to follow grade (for example, garden or walkout elevations) with the bottom of the stepped siding six inches minimum and 24 inches maximum from finished grade.

Except for windows (and spandrel glass within window units), glass is not permitted as an exterior surface. Windows must be confined to areas between floors. In all instances, the exterior building materials used at separations between floors shall be of non-reflective materials other than glass. No glass curtain walls or curtain walls of highly reflective materials other than glass are permitted.

All building projections, including, but not limited to, chimneys, flues, vents, gutters, and down spouts, shall match in color the permanent color of the surface from which they project or match the building's trim color.

Primary or other bright colors shall be used sparingly and only as accents.

- Facades.

Primary structures should not have continuous building frontages longer than 200 feet facing streets or parking areas. Adjacent buildings should be separated from each other by pedestrian walkways allowing passage from areas located behind the buildings.

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3 This outline assumes that "between floors" does not mean between building stories, but instead, between the floor and the ceiling of each building story.

4 This outline assumes that “floors” in this case means “stories.”

5 “Should” is not a mandatory standard.
Side Note: This industrial building on Geneva Street in Denver has more than 850 feet of building frontage along the street, and 160 to 200 feet (depending upon the building segment) between recesses in wall plane. Other buildings in the area (east of Stapleton Northfield) are even larger. These buildings provide essential floor area for logistics, wholesale, and light industrial uses. In industrial areas like this, streetscape and landscaping are used to mitigate the massive appearance of the buildings, if the massive appearance is of concern.

Each nonresidential primary structure must meet at least one of the three facade design standards listed below:

- **Transparency.**
  - A minimum of ten percent of each facade area that faces a street must be composed of transparent materials, unless the Community Development Director determines during the development approval process that such transparency would be inconsistent with the operational requirements of the building.
  - At least one-half of the amount specified above must be arranged so that the lowest edge of the transparent materials is no higher than four feet above the street level. In areas used to meet this transparency requirement, glazing shall have a visible light transparency percentage of at least 60%.

- **Relief.** Each facade greater than 100 feet in length, measured horizontally, must incorporate wall plane projections or recesses having a depth of at least three percent of the length of the facade and extending at least 20% of the length of the facade. No uninterrupted length of any facade may exceed 100 horizontal feet.

- **Surface Features.** Each façade greater than 100 feet in length measured horizontally must include 25% of its surface area in balconies, patios, windows, or natural materials (brick, stone, exposed aggregate concrete, stucco, or natural wood).

- Reflective Glazing. Reflective glass (with a percentage of outdoor, visible light reflectivity greater than 19% or having a transmittance factor of less than 60%) shall not be used on more than ten percent of glazed surfaces.

- **Standardized Buildings.** New primary structures that express a standardized corporate identity must incorporate at least two of the following elements to create a facade and building design similar to those on an existing primary structure visible from the new primary structure and located within 500 feet of the new primary structure. Significant departures from "off-the-shelf" buildings may be required to meet this standard.
  - A similar roofline or roof material;
  - Similar facade colors and materials;
  - Similar pedestrian entry locations and entryway architecture; or
o Similar amounts of glazing on facades visible from public streets.

- **Industrial, Self-Storage, and Distribution Buildings.**
  
o No facade of an industrial primary structure may exceed 35 feet in height without a change in cladding material or surface plane.
  
o Each primary entrance for employees or visitors that faces a public right-of-way must be emphasized through the use of differing colors or materials, arches, arcades, or other architectural treatments.
  
o All front facades of primary structures, and all side wall facades within 40 feet of the front facade, must be clad with masonry (brick, stone, and/or stucco).

![Composite material wall](https://source.com)

**Composite material wall**

![Insulated metal panel wall](https://source.com)

**Insulated metal panel wall**

Side Note: Many industrial and logistics buildings in the region are constructed with insulated metal panels that are lightweight, durable, energy efficient, cost-effective, and easier to install than brick, stone, and stucco. Other new, high-quality composite cladding materials are frequently introduced to the market.

o All primary structures with flat roofs must include a parapet or fascia around all sides of the building.

o Walls other than the front facade of a primary building may be clad with architectural metals, but when such metals are used on side wall facades they shall not extend closer than 40 feet to the front facade of the building.

o Facades of the primary structure must incorporate architectural relief through the use of at least two of the following tools: reveals, visible joint patterns, projected sills, belt courses, reporting brick header and stretcher courses, or differing colors and textures.

o Wherever consistent with the standards above, the design of primary structures must reflect the activities conducted within the building, or the mechanical or structural systems of the building, through the use of special roof shapes (such as skylights) or special corner treatments.

- **Self-storage buildings in the PUD-BP and PUD-I Zoning Districts** must comply with the Non-Residential Building Architecture requirements, as set forth above, and shall meet the following additional standards:

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6 Source: gen3construction.com
o Vertical Dimensions: All self-storage buildings must be multi-story. Self-storage buildings must be designed with at least one offset in building or parapet height of at least 2.5 feet, such that:

- The building appears to have a variation in height over an area that is between 15 and 40 percent of the building footprint (the "Primary Corner Element"); and,
- The Primary Corner Element must be designed so that it is a prominent feature of the front and, if present, a street-side elevation. If there is more than one street frontage, then this requirement applies only to the primary street frontage.

o Horizontal Dimensions:

- Vertical planes of building elevations must be horizontally offset at least one foot at intervals not to exceed 50 feet. Such offsets must have a horizontal dimension of at least five feet. Such offsets are not required on the ground floor. The roofline must be differentiated for each interval (e.g., variations in parapet design, vertical articulation, changes in materials, changes in forms, etc.).
- Vertical planes of the Primary Corner Element must be offset outward from other vertical planes of the building by at least two feet, regardless of the horizontal distance to the next vertical plane offset.

o Transparency:

- In the PUD-I Zoning District, street facing walls of the Primary Corner Element must include windows or glass doors of not less than 20 percent, and all other building elevations must include windows (or translucent cladding materials that closely resemble windows) of not less than 7.5 percent.
- In the PUD-BP Zoning District street facing walls of the Primary Corner Element must include windows or glass doors of not less than 25 percent, and all other building elevations must include windows (or translucent cladding materials that closely resemble windows) of not less than 15 percent.

o Building Access:

- The principal public entrance to the building must be incorporated into the Primary Corner Element as a prominent feature. All other doors (overhead doors and standard doors) that are visible from outside the building, directly or through the windows, must be de-emphasized through the use of colors that closely resemble the colors of the surrounding walls or façade. Bright, primary, and fluorescent colors are not allowed.
- No overhead doors shall be located within:
  - Fifty feet of a residential property line; or
Ten feet of a major building corner (i.e., the edge of a building elevation).

- In the PUD-I Zoning District not more than one overhead door may be located on the front building elevation unless the building is set back at least 40 feet from the property line abutting a street and a parking lot buffer is provided along the front property line.
- In the PUD-BP Zoning District, not more than one overhead door may be located on the front building elevation.
- All other exterior overhead doors must be screened from view from abutting streets and residential zone districts with a Type B buffer or equivalent screening approved during the PUD process.
- Elevated truck loading docks may not be located on the primary street frontage or on elevations that abut a residential property line.

- Cladding Materials:
  - Buildings must be clad with a mix of durable, low maintenance materials that convey an appearance of quality. Allowed cladding materials include:
    - High grade metal composite panels with a durable, factory-applied finish, provided that colors or textures are varied to prevent a monolithic appearance;
    - Brick, brick veneer, stone, simulated stone, or stucco;
    - Cement fiberboard;
    - Concrete masonry units ("CMUs") with integrated color, provided that the outer surface of the CMUs is either split face or ground face; or
  - Prohibited cladding materials include;
    - Un-backed, non-composite sheet metal products (e.g., standing-seam metal or flat panels that may oil-can or easily dent);
    - Smooth face CMUs that are painted or unfinished;
    - Board and batten siding;
    - Plastic or vinyl siding; or
    - Unfinished wood.
  - Other cladding materials that are not listed above may be approved during the PUD process based on a determination of their durability, quality, and appearance compared to the allowed cladding materials as described above.

- Outdoor storage is prohibited.
• Roof Design, Materials, and Equipment.
  o Roof Design. Roofs with a pitch of less than 2:12 must be screened by a parapet wall.
  o Rooftop Mechanical Equipment and Flues. Rooftop mechanical equipment and appurtenances must be screened so that they are not visible from adjacent public streets or adjacent properties less than 200 feet away when viewed from five feet above grade level.
  o Screening enclosures must use at least one of the predominant materials used in the facades of the primary structure and one of the predominant colors used in the primary structure.
  o All air conditioning compressors shall be completely screened.
  o All rooftop and wall vents and flues extending above the top of the nearest parapet must be painted with one of the predominant colors used in the primary structure.
  o Any rooftop equipment generating off-site noise must also be baffled or otherwise attenuated to direct unavoidable noise upward or away from residential uses.