Division of Facilities Development
BUILDING ENVELOPE DESIGN CRITERIA

V1.0
June 24, 2025

This section has been written to cover most, but not all, design conditions you may encounter. Depending on the requirements of your specific project, you may have additional considerations in the drawings and/or specifications. The items below are not comprehensive and the Division of Facilities Development (DFD) expects the A/E to take charge of the design, documentation, and quality control.

When there are unique masonry components, assemblies or installations being proposed the AE is encouraged to contact the International Masonry Institute (IMI), Pat Conway PConway@imiweb.org
IMI Details: https://imiweb.org/detailing-series/?assembly=floor|wall|other

DRAWINGS

Civil/Landscape:

- Grade and adjacent site paving shall slope away from the perimeter of the structure.
- Review landscaping materials at perimeter of structure with the Agency. DFD recommends a maintenance strip.
- Review locations of serviceable site paving that are directly adjacent to structure with the Agency. Ensure that durable materials are used and details are developed which mitigate change of materials and damage/degradation from snow removal activities, including use of salt.
- Confirm that typical details are provided for the intersection of grade materials with the perimeter of structure. These shall be coordinated with Architectural sheet base-of-wall details.
- Identify roof discharge locations to ensure they are coordinated with Civil/LA to mitigate washout and impact of winter conditions; and address maintenance issues. Overflow scuppers would not be identified, but best practice requires a review of what is located beneath.
- Where plantings are located adjacent to the building, ensure that canopies and plantings will not mature into the building façade and there is ample room for maintenance.
- Confirm plantings adjacent to area wells and other areas requiring access have ample clearance.
- Plantings are not recommended to grow upon/expand to the building façade except for a specifically designed feature, such as stand-off trellises.
- Ensure serviceability of the façade and confirm the Agency is aware of all required maintenance.
- For site wall details which include masonry or any other type of cladding (i.e. anything other than a rock or block wall) confirm the top of wall details, bottom of wall details at grade intersection, and wall composition (cavity wall or composite wall) conform to DFD standards.

Demolition:

- Identify all extents of demolition.
- Ensure horizontal and vertical extents clearly align with a definitive point or are dimensioned.
- Include section cuts to clearly depict components of the assembly to be removed and what, if any, is existing to remain.
- Identify prepping or patching requirements prior to new work being installed for all components or areas indicated as existing to remain.
- Identify all components to be salvaged, if they are to be reinstalled, and what actions are required by the Contractor.

Architectural:

Plan Views

- Ensure all intersections of differing exterior wall assemblies are detailed and referenced accordingly in plan view (including where columns are within the wall assembly).
- Provide a detail when columns are depicted just inside the exterior wall assembly.
- Provide details where there is limited space between the exterior wall and interior partition to confirm accessibility for HVAC or custodial maintenance (ex., partition wall running parallel to exterior wall).
- Ensure movement joints are located on exterior wall assemblies, and they meet guidance on location and frequency. Typically, this will be interior wythe joints located in plan view and exterior wythe joints located in elevation view or plan view. These should not be aligned.
- Provide details where a partition wall intersects the fenestration (i.e. curtain wall, storefront). The partition should align with a vertical mullion. Consider head and sill coordination if this is not a full story fenestration condition.
- In general, plumbing fixtures shall not be located on exterior walls.

- Provide details of building components outboard of or intersecting with exterior walls (i.e. clad columns, screen walls, site walls intersecting with exterior walls, fencing, etc.)

Elevation Views

- Ensure all building façade-mounted features are included and coordinated with MEP fixtures/equipment.
- Identify exterior movement joint locations, and confirm they meet guidance for location and frequency.
- Identify locations of roof drainage (downspouts or scuppers) and ensure locations are coordinated with fenestration, windows, doors, louvers, and building-mounted equipment/fixtures.
- Roof overflow drainage shall not be hidden and shall be visible to the Agency for maintenance.
- Confirm fenestration locations are coordinated with plan views.
- Identify and dimension, as appropriate, any specific patterning associated with exterior cladding materials.

Section Views

- Detail all intersections of differing exterior wall conditions, including wall material change, changes in overall plane of wall, and the associated changes to head and sill/threshold conditions of fenestration.
- Detail all roof-to-wall intersections, including but not limited to awnings/soffits, penthouse and elevator overruns.
- Detail all base-of-wall intersections at the intersection of grade and below grade wall assemblies.

Details

- Provide continuous air vapor barrier (AVB) or weather barrier, from below grade water/damp proofing (if applicable) up to the roofing assembly. Confirm the continuity at all details.
- Provide a continuous thermally insulated plane, with insulated glass units (IGU) within the plane. Reduce thermal bridging when thermally conductive material (i.e., metal) meets the plane.
- Ensure that all flashings (base-of-wall locations, fenestration heads/sills, shelf angles) are coordinated with AVB/weather barrier and are appropriately lapped and detailed.
- Ensure that all fenestration rough openings are coordinated with AVB/weather barrier. The goal is for the primary seal to engage the AVB/weather barrier.
- Detail all head, jamb and sill/threshold conditions for all fenestration.
- Detail all penetrations in the exterior wall assembly.

Structural:

- Ensure that structural details related to exterior walls, above and below grade, are coordinated with Architectural.
- Water/damp proofing shall be included at all occupied below grade locations and drain tile shall be located below floor elevation.

MEP:

- Confirm all exterior mounted MEP fixtures/equipment attached onto/within exterior façade are coordinated with Architectural (and vice versa).

SPECIFICATIONS:

Mockups:

- Recommend including a mockup for the specified building envelope elements for an exterior wall assembly mockup. For large projects, the mockup shall be a large scale, free-standing multi-component mockup. For smaller scale projects and/or components in-situ may be specified.
- When AVB, DEFS, EFIS, exterior wall panels, exterior siding, masonry, sealants, sheathing, thermal insulation, and WRB are specified, they shall be included in the mockup.
- Specifications shall include a required damp/waterproofing in-situ mockup.

Commissioning & Testing:

- Specifications shall include a pre-installation meeting for all specified building envelope elements. Require Contractor to include all impacted subcontractors and discuss responsibilities for installation of all elements. Discuss all required testing.
- Ensure all CV forms are coordinated with the associated specification sections.
- Fenestration Specifications shall include testing by the Division 8 Contractor to follow the American Architectural Manufacturers Association (AAMA) standard AAMA 501.2 (Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems).

- Ensure that the frequency/quantity of testing is clearly identified. At minimum the mockup is recommended to be tested. Additional testing of an identified percentage of windows should be discussed by the design team with DFD. Testing shall be coordinated with DFD, the end user, and AE to facilitate witnessing the testing. All test results shall be documented and distributed.
- When window washing equipment or facility fall protection is included, ensure testing and certification of this equipment is included in the specifications. If accessories and components (i.e. fall arrest harness, lanyard, etc.) are required to utilize this equipment these shall be included in both the testing and required owner training.
- Ensure the Agency is aware of all required ongoing testing and certification of this equipment, for which they are responsible after substantial completion.

Division 3:

- Ensure precast panels, GFRC or other architectural elements are coordinated (the elements specifically) with the DFD standard 04 20 00 spec section which includes language for precast sill components.

Division 4:

- If DFD templated 04 20 00 specification section is used, confirm if the bricks listed which are noted as an aesthetic and performance match meet the requirements listed in the performance table. The AE shall provide brick test reports to confirm this. These are available from the manufacturer at no cost.
- Confirm brick size and coursing have been coordinated (i.e. modular, utility, norman, etc. for size and 1/3 running, 1/2 running, stacked, etc. for coursing). Confirm CMU thickness and coursing is also coordinated.
- Ensure that weep and vents are specified at flashing/base of wall details and top of wall, beneath flashing locations respectively. DFD preference is a mesh style vent, which is condition dependent (i.e. if we are trying to match an existing condition).
- Cavity drainage material is typically not specified unless cavity wall air space is approximately 1". Review with DFD for these conditions.
- Confirm with the Agency if attic stock of brick is required.

Division 6:

- Confirm sheathing has been coordinated to accept WRB or AVB.
- Pressure Treated Plywood and Lumber: These products shall not be specified nor provided for use anywhere within the new roof system as a substrate material intended to receive mechanical fasteners used to secure metal roof panels, panel clips, metal coping, roof penetration curbs cap and counterflashing, all other metal flashing, roofing insulation and membrane installations that are a part of the roof system.

Division 7:

- If AVB is fluid applied, require ABAA certification for installers and field testing by Contractor.
- If large quantities of exterior sealant are specified include adhesion testing (typically by manufacturer's representative).

Division 8:

- Include a minimum 5-year product guarantee by the window manufacturer and a 2-year labor warranty by the installing Contractor. The AE shall coordinate the manufacturer's warranty length during design.
- The DFD "window warranty" form is no longer required or permitted to be used.

Division 13:

- Where there are typically delegated design components, ensure that specifications are comprehensive enough to ensure the basis of design will be received or exceeded.

****