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INTENT OF GUIDELINES

These Guidelines shall be used by architects/engineers in the design of new Hampton Roads Sanitation District (HRSD) pump stations and pump station support facilities. They shall also be referenced when designing additions, renovations and modifications to existing pump stations.

The Guidelines shall direct the aesthetic design of pump station facilities, and shall supplement the engineering, technical and operational standards and requirements, including HRSD’s current edition of Standards and Preferences for Engineered Construction Projects, as directed by HRSD.

The Guidelines are intended to be a “living document” and updated periodically by HRSD to address new materials, new building systems, new technology and refinement of aesthetic design standards.

PRINCIPLES OF DESIGN

The design of the pump stations should strive to achieve the following principles:

+ Overall site and building design should respect the community in which the facility is located.
+ Architecture should blend into the local context of the site and community where feasible.
+ Building façade should show quality detailing and finely tuned proportions.
+ Materials should be selected for durability and low maintenance.
+ Building design should balance aesthetic form and operational function.

CONFORMANCE WITH LOCAL DESIGN GUIDELINES

Designs shall meet the guidelines of the City/County, including design standards, overlay districts and community character corridors. Designs shall also meet any guidelines adopted by the local community. If local design guidelines conflict with these Architectural Guidelines, the local guidelines shall take precedent.
SITE DESIGN

Site Layout and Views
+ General site characteristics of neighboring properties should be considered in pump station design.
+ Consider views from adjacent streets, public spaces, and neighboring buildings and lots.
+ Particular attention should be paid to sites located near cultural landmarks, significant buildings, and public spaces.
+ Buildings shall be sited to screen any visible electrical, plumbing, and mechanical items from primary views.
+ If land is needed for future expansion, consideration should be given to interim use of this land as a park, greenspace, or other public/community use.
+ Where possible, locate emergency pump connections away from primary views.

Building Setbacks
+ Building setbacks shall follow local zoning requirements, and also reflect the setback already established by buildings on adjacent properties.
+ Depending on scale and mass, it may be appropriate to site pump stations further back than adjacent buildings to avoid overwhelming the adjacent structures.

Driveways and Hardscape
+ All pump stations should be designed with pervious pavement systems, in keeping with the environmental focus of HRSD.
+ Pervious pavement (asphaltic or concrete) should be used for all access drives at a minimum. Where secondary or emergency drives are required, pervious paver or grass paver systems should be used.
+ Concrete or asphalt paving should only be used where heavy equipment or vehicle loading is expected.
+ Where possible, driveways should not be placed against the building. A green space of 3’ is recommended between drives and the building foundation.
+ Width of driveways should be the minimum needed for vehicular access, and consistent with neighboring properties when possible. Site paving should be the minimum needed to maintain appropriate access for maintenance and operations.
+ Edge treatment should be provided at all access drives visible to the public.
Fencing
+ High durability and low maintenance materials such as aluminum, closed-cell PVC and fiber cement should be used for fencing.
+ Fencing should only be used where needed for visual screening or building security.
+ In general, fencing should be consistent with the character of surrounding properties.
+ Privacy fencing should be used when appropriate to hide unsightly elements of the architecture or site, such as louvers, exhaust, piping, monorail, etc. However, elements that are low to the ground (manholes, concrete pad) or other less visually impactful elements may be left outside of fencing.
+ When possible, fencing the buildings and other elements as necessary is preferable to fencing the entire site.
+ Fencing should expose at least the front façade of the building – more if possible within design constraints.
+ If fencing is needed for security, use decorative black aluminum fencing, 6’ high.

Landscaping
+ Existing vegetation should be considered in site design as it can provide screening and visual softening of pump stations.
+ Design landscaping that is sustainable, low maintenance and drought resistant.
+ Decorative landscaping shall be minimized, but may be needed as a tool for shielding unsightly facades or softening visible foundations on larger buildings.
BUILDING DESIGN // GENERAL

Building Massing

+ In general, buildings should be designed to a scale and style that is sympathetic to residential structures, or sympathetic to adjacent contextual buildings.
+ Smaller pump stations should be designed to appear like traditional “outbuildings”, with scale that is appropriate for those buildings.
+ Avoid large monolithic walls and roof surfaces. Break larger masses down into smaller elements with plan offsets, gables, roof breaks, etc. Use porches and other residential elements where needed to soften larger masses.
+ Large pump stations in small-scale neighborhoods should be designed with smaller elements reflective of the neighboring buildings.
+ Buildings should be carefully articulated with functional doors and louvers, placed in an organized method that is appropriate for architectural balance on the elevations while supporting the functional requirements of the facility. Avoid haphazard placement of louvers, openings and other elements on walls.

Building Façade Design

+ Several factors may influence the overall height of a building: a high capacity pump station may require greater height for equipment, or a building location in a flood plain may require the floor to be raised significantly above grade. A variety of techniques should be used to achieve good proportions on the building façades.
+ Consider raising the first floor slab at least 12” above grade to avoid water infiltration and contribute to a well-proportioned elevation.
+ For taller buildings, consider simulating a half story above the first floor. Alternatively, a half story of false windows at grade can create an “English basement” aesthetic.
+ A water table (a traditional masonry projection at the foundation line) of up to 4’-0” above grade can be utilized to break down the overall height of a building, regardless of the actual floor level.
+ Head and sill heights, widths, and overall spacing of doors, windows, louvers, and other elements should be coordinated and provide visual balance.
BUILDING DESIGN // PRIMARY ELEMENTS

Exterior Wall Cladding
+ Primary exterior wall finish shall be brick, in color and size to blend with adjacent structures. Where no structures are in the vicinity, brick should be standard size (6 courses per 16 vertical inches) or oversize (5 courses per 16 vertical inches).
+ Where no structures are in the vicinity, brick should be a Tidewater Virginia traditional red blend, with a full range to include a percentage of flashed bricks.
+ Mortar shall be straw or natural color. Mortar joints shall be grapevine or concave.
+ Optional exterior cladding shall be fiber cement siding (Hardiplank or equal), weatherboards, smooth finish with 6” to 7” exposure. Fiber cement siding should be factory finished in color to blend with neighboring structures.
+ If appropriate to the context of the site, other styles of siding (board-and-batten, shingles, etc.) may be used. Material and finish shall be the same as described above.

Roofing
+ Sloped roofs (pitch 8:12 or greater) are strongly recommended, unless a different pitch is needed for compatibility with surrounding structures.
+ Roofing materials shall be either standing seam metal or architectural shingles.
+ Standing seam metal roofing color shall blend with adjacent structures. Where no structures are in the vicinity, color shall be medium or dark bronze. Roofing shall have an 18” maximum exposure on panel size.
+ Architectural shingles shall be 40-year warranty asphalt-fiberglass shingles, with medium to dark color to blend with adjacent structures. Where no structures are in the vicinity, color shall be slate blend, dark gray blend or weathered wood blend.
+ Avoid gutters and downspouts unless absolutely necessary for adequate roof drainage.
+ Where ground gutters are needed, provide materials that blend with the building and landscaping.
+ Fall protection anchors should be included in roof design.

Doors and Windows
+ Depending on the needs of the pump station, functional doors will be located on various faces of the building. When they are highly visible it may be appropriate to clad them with an architectural finish. For less visible locations, painting doors to match the exterior siding will allow them to recede from view.
+ Decorative doors could be located at the front of buildings to create a focal point for the building.
Decorative windows & false widows should be used to break down mass of larger blank walls, and provide articulation to facades. Unless other window styles are needed to blend with adjacent structures, windows should be double-hung in appearance, with a width-to-height proportion in the range of 1:2 to 1:2.3. In general, primary windows should not be smaller than 2'-8” x 6’-2”. Larger windows may be needed for larger scale buildings. Half story windows above should match the size of one sash of the double hung windows below.

When windows are needed for natural light, care should be taken in areas of high vandalism. Second story windows or dormers can provide natural while mitigating security issues. When windows are added only for aesthetic reasons, glass can be blacked out and openings blocked up on the interior side.

Brick inset windows and shuttered windows can be used to break up a blank façade. Sill and header details should match other building penetrations for visual uniformity, and sizing should fit into the overall proportions for the building. Shutters should be constructed from high durability low maintenance materials such as closed cell PVC, fiberglass or fiber cement.

Trim and Cornices

High durability and low maintenance materials such as closed cell PVC, fiber-cement, fiberglass, or composites should be selected for cornices, exterior trim, and columns.

Cornices should be designed appropriately for different scaled buildings: while a small pump station may resemble an outbuilding and have only a crown moulding and short roof overhang, larger buildings will require larger cornices with multiple members.

Use square or round porch columns with an 8” minimum width. Avoid overly ornate columns.

6” corner boards should be used at weatherboard siding.

Handrails should be included with any stairs of more than 3 risers. Personnel entrances, porches, and other occupiable spaces should receive guardrails and handrails as required by code. Decorative, non-occupiable porch rails should be at an appropriate height, but not above 36”, unless mandated by code.

Louvers

Functional louvers have a very large impact on the exterior of a pump station; therefore, their design must be carefully coordinated.

All visible louvers should receive a high quality fluoropolymer finish and color to match other exterior elements.

Where possible, the top of louvers should align with the top of adjacent windows, doors, or closed shutters. The widths of louvers should also correspond to adjacent architectural
items. Placement of louvers should align with the overall spacing of exterior elements.
+ Locate oversized and odd louvers on the rear elevations or behind screening elements.
+ Where possible, fans should be mounted on the interior with only architectural louvers on the building exterior.

**BUILDING DESIGN // OTHER ELEMENTS**

**Emergency Generators and Stand-by Pumps**
+ Locate generators and pumps within an enclosed building where feasible for both visual screening and noise control.
+ If enclosure of equipment is not feasible, locate generators and pumps at rear of building or at least visible side of building, away from view by the public and adjacent properties.
+ Provide screening of all generators and pumps located outside enclosed buildings, using screen walls, fencing, evergreen landscaping or combination thereof.
+ Care should be taken where generators or pumps must be elevated due to flood zone requirements. In these cases, enclosure in a building may be the only way to effectively screen equipment.

**Monorail**
+ Only use monorails where absolutely necessary, and other solutions have been ruled out.
+ Locate monorail on rear elevations to decrease street visibility when possible.
+ Monorail can be simplified to a single column and beam, or can be disguised with roofs and architectural columns.

**Odor Control**
+ Integrate odor control into building interior when possible.
+ Secondarily, provide high privacy fencing or wall to screen from view.
+ Where soil conditions allow, odor control systems may be placed below grade for concealment.

**Vertical Exhaust**
+ Vertical exhaust elements should be placed at rear when possible.
+ A decorative masonry chimney may be used to help to disguise a number of smaller exhaust and/or venting elements.
+ Avoid large exhausts on roof.
Signage
+ Safety signage should be placed at the personnel entrance to the building.
+ The location and size of HRSD property signage may vary depending on context and intent of signage.
+ Locate street address signage on the front façade over the front door or other prominent location.

Exterior Lighting and Security Cameras
+ Use motion sensors to control exterior lighting unless building is in a high traffic area or urban area.
+ Use full cutoff light fixtures to minimize spillover of light to adjacent properties.
+ Lamp type/color should match context: HPS, HID, LED, etc. If no other exterior lights are present in the vicinity, lamp shall be LED.
+ If pole mounted lighting is required on site, care should be given to placement, finish, and height of poles. Light poles should be factory finished aluminum and no more than 12 feet above grade. Style and color should match the building scheme, with the color usually dark bronze or black.
+ If security cameras are needed, placement should be discrete and screened from view if possible.
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EXHIBITS // DRAWINGS

General Building Proportions

Small Pump Stations

The following example gives proportions and detail elements appropriate for small buildings.
EXHIBITS // DRAWINGS

General Building Proportions

Large Pump Stations
For larger building, the following elevation provides recommendations for proportions, roof-lines, cornices, window and door detailing.
**EXHIBITS // DRAWINGS**

*General Building Proportions*

**Large Pump Stations**

This elevation shows an example of proportions appropriate for a large building highlighting the use of faux brick windows, louver and door locations to create a visual grid. The placement of these elements helps to create a visual hierarchy and break up long spans of solid facades.
If vertical venting is required, a chimney can be used to disguise the vent space. Chimneys should maintain a high level of architectural detail and be in proportion to the overall structure.
Window & Closed Shutter

**Window Elevation**

- 4" Casing
- Window Grille
- Window Sash
- Window Sill Wide Enough to Receive 4" Wide Trim

**Closed Shutter Elevation**

- Brick Arch Header
- 2" Trim
- Painted Shutter
- Brick Row Lock Sill

Shutter and trim shall be placed behind face of wall brick.
EXHIBITS // DRAWINGS

Architectural Louver & Dormers

**ARCHITECTURAL LOUVER**

- 3-5/8" CROWN MOULD
- FIBER-CEMENT SIDING
- 1X6 TRIM (NO BRICK MOULD)
- 1 1/2" X 1/2" OSGEE TRIM
- DOUBLE HUNG WINDOW (MIN. 2'-7" X MAX. 3'-1" WIDE AND MIN. 4'-5" X MAX. 5'-8" TALL)

**DORMER**
EXHIBITS // DRAWINGS

Doors

Examples of architectural door treatments are below. Corrosion-resistant doors may be simply painted, or when desirable or highly visible, can receive decorative treatment applied to the front.
EXHIBITS // DRAWINGS

Doors

Examples of architectural door treatments are below. Corrosion-resistant doors may be simply painted, or when desirable or highly visible, can receive decorative treatment applied to the front.
EXHIBITS // DRAWINGS

Cornice

The following cornice details are intended to give examples of the range of possibilities. Cornice details should be in proportion to the overall building scale.
EXHIBITS // DRAWINGS

Cornice

Large Cornice

Cornice Return
EXHIBITS // DRAWINGS

Porches

In some cases of high visibility or importance, a porch may be desired to maintain continuity in a neighborhood or hide unsightly but necessary elements.
**EXHIBITS // DRAWINGS**

**Fences**

A picket fence should be used where visual screening is less important, but perimeter security is still required. A solid fence may be used where visual screening is of primary concern.
EXHIBITS // DRAWINGS

Signage

Standard signage to be used to designate property & combined safety sign to be displayed at personnel entrances.

STANDARD PROPERTY SIGN

COMBINED SAFETY SIGN
EXISTING CONDITIONS // STREET VIEW
1. Immediate rural site in suburban surroundings.
2. No clear front setback created by neighboring properties, so location of pump station is acceptable.
3. Lack of established tree cover and close neighbors results in the pump station being highly visible.
4. Bright yellow fence should be eliminated or replaced with one more contextually appropriate.

EXISTING CONDITIONS // SIDE VIEW
1. Aluminum louvers of different styles and shapes should be standardized to the extent possible and painted to match brick or doors.
2. The roof slope is too low and displays a lack of detailing.
3. Electrical equipment is highly visible from the front facade and should be relocated away from views or screened.
4. Exhaust fans should be located inside with louvers visible on the exterior.
NEW SITE PLAN

EXHIBITS // CASE STUDY I
Big Bethel Road Pressure Reducing Station

1. Relocate electrical equipment to rear.
2. Service entrance at rear, and side if necessary.
3. L-Shaped Massing is broken up by faux porch extension.

NEW // STREET VIEW
1. Massing and material choices should reflect the surrounding areas.
2. Closed shutters at front facade are used to create visual interest.
3. Head heights for doors, windows, and louvers should be well coordinated.
4. Aesthetic front porches should be sufficient in depth.
5. Add Handrails at front entrance to create focus on doorway
EXITING CONDITIONS // STREET VIEW
1. This site has high visibility from four sides - Providence Road (elevated above the site) and Old Providence Road (the “front” entrance).
2. At Providence Road, fencing does little to screen view. Use of landscaping and vegetation would be recommended.

EXITING CONDITIONS // SIDE VIEW
1. Doors, louvers, and exhaust items should be painted to match existing brick.
EXHIBITS // CASE STUDY II
Providence Road Pressure Reducing Station

OPTION 1 // STREET VIEW
1. Extended roof structure hides unsightly monorail and helps to block unbalanced facade.
2. Full and clerestory faux brick windows create a rhythm to the facade.
3. The hip roof lessens the impact of large building.

OPTION 1 // SIDE VIEW
1. Louvers fit easily into established grid of brick window openings.
2. Large cornice details are used to match scale of building.
3. The hip roof lessens the impact of the large building.
EXHIBITS // CASE STUDY II
Providence Road Pressure Reducing Station

OPTION 2 // STREET VIEW
1. Painted doors blend into the brick and visually disappear.
2. A simple column dressed in brick lessens the impact of the monorail.

OPTION 2 // SIDE VIEW
1. Faux brick arches provide rhythm to the black facade and allow for well placed louvers.
EXHIBITS // CASE STUDY III

Atlantic Pressure Reducing Station

EXITING CONDITIONS // STREET VIEW
1. Existing pump station extends past the established setback line of the surrounding structures.
2. Massing shows no connection or response to adjacent houses.
3. Hip roof lessens the impact of such a large structure.

EXITING CONDITIONS // SIDE VIEW
1. The blank front facade of the existing pump station provides low architectural detail in contrast to the surrounding residential neighborhood.
New pump stations should respect the front setback established by existing adjacent buildings.

Corner views should also be considered in design. Where existing tree cover blocks the view, the architectural treatment can be lessened. Where no screening exists, attention should be given to side elevations.

Break up large massing into smaller elements with particular focus of the street side.

If hardscape is required at front, choose aesthetic and permeable pavers.

NEW // STREET VIEW
1. The hip roof lessens the impact of the large building.
2. 3'-6" Water table.
3. 7'-0" Fence for additional screening and to match scale of pump station.
4. Narrow driveway can widen behind fence.
EXISTING CONDITIONS // STREET VIEW
1. Electrical equipment could be moved to side or rear of pump station.
2. Driveway should be the same width as adjacent properties, or less - access at rear can be wider.
3. Fencing should be scaled back to front facade and replaced to match surrounding materials.

EXISTING CONDITIONS // SIDE VIEW
1. New vent piping should be added in a careful manner and not merely applied to exterior.
2. Existing flood protection was modified and should be removed.
3. Service doors can be painted to blend into brick.
Fence as little of the site as possible. If possible, fencing should be set back from the front facade.

Maintain a narrow driveway but still allow for wide service pad in fenced area.

Small manholes or access hatches at grade may be left outside of fenced area if properly secured.

1. Faux or real entry door at front can be laminate with architectural treatment.
2. Closed shutters provide simple pattern at the front facade.
3. Fence is set back from front facade as much as possible.
4. If necessary, protruding elements can be painted to blend into surrounding brick.
EXHIBITS // EXAMPLE PUMP STATIONS

Arctic Avenue, Virginia Beach

ARCTIC AVENUE
1. Front porch and trellis gives scale to the building and mirrors the surrounding shore architecture.
2. Aesthetic security fence is appropriate to surroundings and screening needs.
3. Since this pump station is quite visible, the monorail should be hidden or modified to reduce its visibility.
EXHIBITS // EXAMPLE PUMP STATIONS

East Beach, Norfolk

East Beach, Norfolk

1. High quality details are used throughout this pump station.
2. The generator and paved areas could be better visually screened.
3. If possible, the chimney/vent stack should be better proportioned to the building size.
4. Electrical equipment could be moved off of the façade adjacent the main street.
5. Use appropriate fencing for screening or security.
LOCUST VALLEY

1. The close proximity of adjacent houses demanded attention in exterior detailing.

2. Permeable paving is appropriate for the residential context and for amount of expected wear.
EXHIBITS // EXAMPLE PUMP STATIONS
Currituck County Waterworks, NC & James City County Pump Station

CURRITUCK COUNTY WATERWORKS
1. Architectural louver and door are similarly detailed and appropriate in height.
2. Large eave overhang is reflective of large building.
3. Half story closed shutters are used due to building height.

JAMES CITY PUMP STATION
1. Architectural louver and door are similarly detailed and appropriate in height.
2. Small eave overhang is reflective of a small building.
3. Light fixture should be cutoff type, and less obtrusive.
EXHIBITS // EXAMPLE PUMP STATIONS

Stonehouse Station, James City County

STONEHOUSE
1. Fence hides elements from view, but could provide more screening by wrapping the corner.
2. Steep roof, short eave overhang, and covered entry demonstrate appropriate scale.
EXHIBITS // EXAMPLE PUMP STATIONS
Bay Shore Lane, Suffolk

BAY SHORE LANE
1. Design challenges with pump stations retrofitted with emergency generators. This example is also elevated due to flood zone requirements. This is not appropriate for pump stations visible from public areas or adjacent to residential areas.