

Vernacular Architecture

The Architecture of the U.S. Virgin Islands

Vernacular Architecture²⁴ – architecture that makes use of common regional forms and materials at a particular place and time; usually modest and unpretentious, and often a mixture of traditional and modern styles, or a hybrid of several styles.

Vernacular architecture is the architecture of a specific place that has evolved over many years and embodies both the culture and the collective wisdom of many generations, literally starting when people first created homes and places for community and commerce in that place. As the architectural typologies evolve over time they are tailored to their specific functions and context including:

- Climate
- Available local materials and technologies
- Skill level of workers and craftsmen
- Location and physical context
(Urban or rural; near the sea, on a plain or mountain)
- Local culture and economy
- History of both the place and immigrants who move there

Unsurprisingly, local builders learned and adopted best practices to respond to their context – in other words, they adopted architectural typologies that mitigated the effects of their climate to promote health and comfort and expressed their cultural values while being functionally effective and resource efficient.

Vernacular architecture at its best is the embodiment of triple-bottom line sustainability that promotes positive environmental, social, and economic outcomes.

While the three islands, St. Thomas, St. Croix and St. John, share much of the same context that shaped their vernacular architecture, one of the biggest differentiators is the topography. St. Croix has more rolling hills and flat plains, especially at the center of the Island, which allowed for towns and neighborhoods to be planned on a more regular grid with planned open squares or parks.

Similarly, several of the larger schools were placed on large relatively flat sites and designed around central rectangular courtyards. In contrast, the topography of St. Thomas and St. John is much steeper hills and mountains with very few flat sites that are not man-made. The towns and neighborhoods follow irregular paths up the steeply sloping terrain. Likewise, the schools must step up the hills and mitigate the change in elevation.

²⁴*Vernacular Architecture*
Illustrated Dictionary of Architecture. The McGraw-Hill Companies, Inc. (2012)
<https://encyclopedia2.thefreedictionary.com/Vernacular+architecture>

All three islands have the advantage of the trade winds coming predominantly from the east, and the vernacular architecture takes advantage of this by locating living spaces on the second floors of buildings that are designed to shade the interior spaces and capture/utilize cross-ventilation. More private rooms (e.g. bedrooms) are arranged around common living spaces with openings that are large and aligned to facilitate the movement of air. Further, ceilings are typically high and most often follow the shape of the high hipped roofs that vent out the top. Corridors and stairs are typically on the outside of the main rooms in covered but not enclosed galleries which serve to keep the heat gain in the interior occupied spaces to a minimum.

It is also important to understand what current materials and construction means and methods will result in the highest quality and longest lasting facilities. A vernacular building expresses the time and place where it exists, so it will also take advantages of new technologies as well as traditional typologies.

A positive example of the vernacular architectural principles being utilized in contemporary buildings can be found at the University of the U.S. Virgin Islands St. Thomas Campus. At the top of a hill are a series of four classroom buildings arranged along a generous central outdoor walkway with the library building at the end of the axis. The buildings step down the hillside with lower levels below the main level. Each smaller classroom building utilizes the typologies found in the historic homes with classrooms on either side of a central space.



Top University of the Virgin Islands St. Thomas Campus, Academic Buildings
Credit: UVI

Bottom Aerial view of the University of the Virgin Islands St. Thomas Campus.
Credit: UVI



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The constriction at the entrance to each building combined with the open stair on the opposite side of the building and the high hipped roof space with venting cupola promotes a cooling wind that moves through the building. The outdoor space and courtyards between the buildings are landscaped to create gathering areas. Future school modernizations and new buildings should look to the principles of vernacular architecture and understand how they can best be applied to create wonderful contemporary buildings that are beautiful, comfortable, functional, and efficient.

Bottom University of the U.S. Virgin Islands St. Thomas Campus



Top University of the Virgin Islands St. Thomas Campus, Dormitories
Credit: UVI

Bottom University of the Virgin Islands St. Thomas Campus, Dormitories
Credit: UVI





Historic School Structures in the USVI

The Virgin Islands State Historic Preservation Office reviewed 15 public schools on St. Croix, St. Thomas, and St. John and determined that the following schools, for age and significance, meet the requirements for listing on the National Register of Historic Places;

- 1 Edith Williams Alternative School
- 2 Joseph Sibilly Monroe Annex
- 3 Guy Benjamin Elementary School
- 4 Ulla F. Muller Elementary School
- 5 E. Benjamin Oliver Elementary School

Additional historic sites include:

- Leonard Dober Elementary School
- Lew Muckle Elementary School
- Positive Connections Alternative Academy

Left University of the U.S. Virgin Islands St. Thomas Campus

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Design Guidelines for a Vernacular Architecture

Key components of architecture in the U.S. Virgin Islands from a historic perspective.

Guiding Principle:

Cultural, Local and Economic Competence and Resilience

Planning, design and construction efforts will embody cultural, local and economic competence and resilience by:

Vernacular architecture being incorporated into designs

Local and M/WBE participation in design and construction being encouraged and tracked with goals.

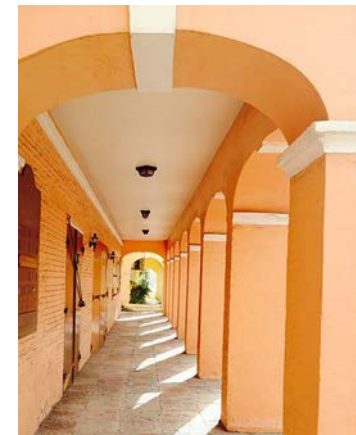
Vocational programs and opportunities for certification

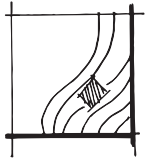
The designs presented throughout the Educational Facility Master Plan are the result of divergent thinking that explored ways of recreating historic shapes, forms and materials through modern interpretations of key design principles exhibited in the historic Danish architecture of the islands.

Outlined in the following spreads, the design team has identified 10 criteria that reflect historic design principles.

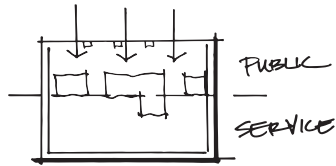
Images Left to Right

1. Christiansted, St. Croix, Credit: Wikipedia Common Media
2. Downtown Christiansted, St. Croix
3. Historic Arcade King Street, Christiansted, St. Croix, Credit: Pinterest: Taller Larjas LLC
4. Exterior Stairs, St. Thomas, Credit: Jana Silsby
5. Clock Tower, Christiansted, St. Croix
6. Sunday Market Square, Christiansted, St. Croix, Credit: Pinterest: Taller Larjas LLC

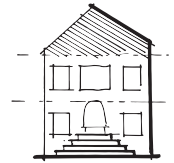




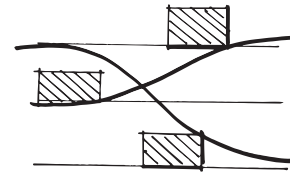
1. Topography & Site Orientation



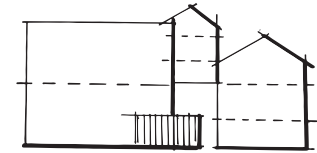
2. A Civic Presence



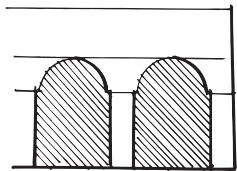
3. An Arrival Sequence



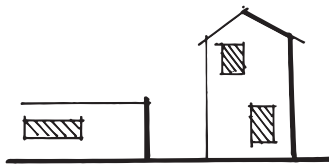
4. Pathways, Patios & Courtyards



5. Volumes & Forms



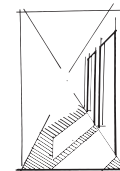
6. Solids & Voids



7. Horizontals & Verticals



8. Punched Openings, Shutters & Curtain Walls



9. Light & Shadow

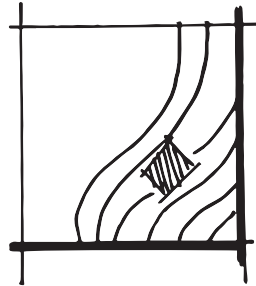


10. Scale, Materials, Texture & Color



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1. Topography & Site Orientation



Lower Left *St. Thomas Boardwalk*

Lower Right *St. John Aerial*



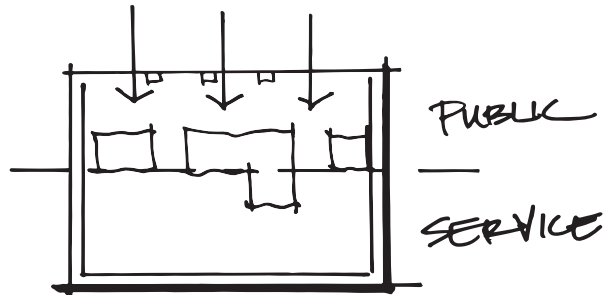
The historic fabric of St. Thomas, St. John and St. Croix are in distinct contrast with each other.

St. Thomas has little level land, composed primarily of a ridge of hills running east and west. Similarly, St. John has steep, lofty hills and valleys but little level land. In fact, more than three-quarters of St. John's land area is preserved as Virgin Islands National Park. Contrary to St. Thomas and St. John, St. Croix is generally flat and much larger than its sister islands. St. Croix is more than twice the size of St. Thomas and four times the size of St. John.

This diversity in topography and scale creates great opportunity for island specific design that responds to the land in a sustainable and celebratory way.



2. A Civic Presence



Lower Left Lutheran Church, St. Thomas.

Lower Right 1830s Danish School (Police Station), Frederiksted, St. Croix.



Many of the historic designs of the Virgin Islands incorporated a sense of grandeur at the public face of the street.

This feeling of scale, mass, and presence was reinforced by strong masonry foundations, and wide, regal entries. Repetition of this approach along a street scape often created urban edges throughout the more populated areas.

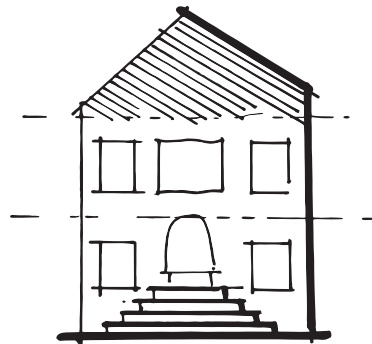
Contrasting with the forward face of the building, designs utilized service and support areas at the back. This approach and the supporting circulation created opportunities for passages and courtyards as towns became more dense.

New construction and modernizations to existing can respect this vernacular tenet by observing the presence and approach of the building entry and integrating exterior passages and courtyards into the design.



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3. An Arrival Sequence



Traditionally, the historic designs of the Virgin Islands built an arrival sequence that began at the street level, guiding one through different scaled spaces and a series of thermal zones.

This approach marked the public entrance with grand stairs, porches, and porticos and helped to control heat gain in the interior occupied spaces of a building. The covered porch and portico structures protected the entrance, providing shade for the building façade and area for social gathering.

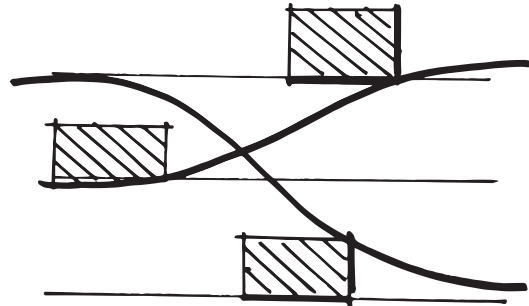
Contemporary designs for the islands should incorporate an entry sequence that provides diversity of scale and transitions between interior and exterior environments.

Lower Left *The Fred Boutique Hotel, Frederiksted, St. Croix*

Lower Right *Governor's Mansion, St. Thomas*



4. Pathways, Patios & Courtyards



Between, in, and around the historic buildings of St. Croix, St. Thomas and St. John are pathways, patios and courtyards that provide access to breezes and a variety of thermal zones.

These transitional spaces afford shelter from the heat and inform characteristic features of island design, including arcades, terraces, and paved outdoor areas.

The beauty of the islands provides great opportunity for pathways, patios, and courtyards that elevate the social and physical aspects of new design and construction.

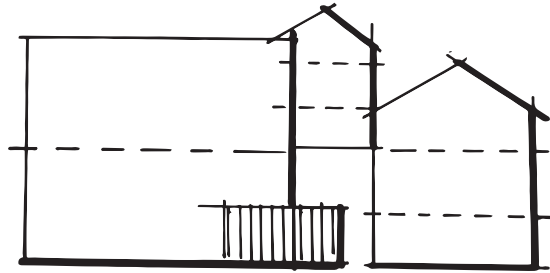
Lower Left *Governor's Mansion, St. Croix*

Lower Right *St. Thomas Campus, University of the Virgin Islands*



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5. Volumes & Forms



Lower Left *Historic Lawaetz Family Museum, Frederiksted, St. Croix*

Lower Right *Figure 19, 12 King Street, Frederiksted, St. Croix
The Vernacular Architecture of Frederiksted, Robert S. Brown*

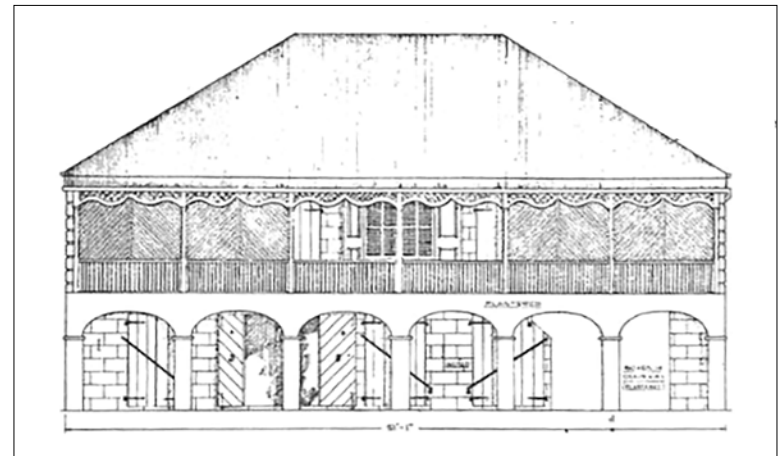


The historic architecture of the Virgin Islands utilized repeated patterns of scale and proportion to establish the shape of their buildings.

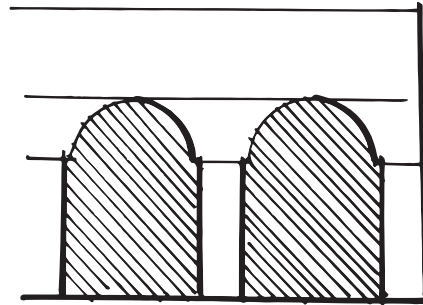
Key to these proportions was the incorporation of 1/3 story volumes that allowed for the passive draw of warmer air from the building up through a hip roof designed specifically to deflect high winds typical of Caribbean hurricane zones.

Traditionally, building plans were arranged about a central hall that allowed an open plan to develop around it.

Leveraging the 1/3 rule and integrating traditional strategies for air distribution and vernacular space planning will create thermally comfortable designs that fit into the urban fabric of the islands.



6. Solids & Voids



The heavy masonry forms of historic Danish architecture are often offset with a more whimsical architecture constructed out of wood at the upper floors.

This approach created buildings that were firmly anchored at their foundation but with a lightness above that culminated in roofs designed to mitigate negative pressures from recurrent tropical storms. "In traditional residential design, the main structure had a hip roof, the front and rear galleries had shed roofs, and the kitchen wing a gable roof."²⁵

New construction and renovations should observe the juxtaposition of solid and void in their designs, to reinforce the character and efficiencies of traditional island architecture.

Lower Left Historic Merchant Townhouse, Frederiksted, St. Croix.

Lower Right Frederiksted, St. Croix. Credit: Prayitno

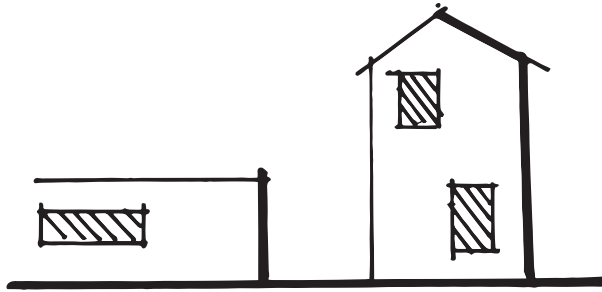


²⁵Robert S. Brown
The Vernacular Architecture of Frederiksted, Robert S. Brown (Page 8)



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7. Horizontals & Verticals



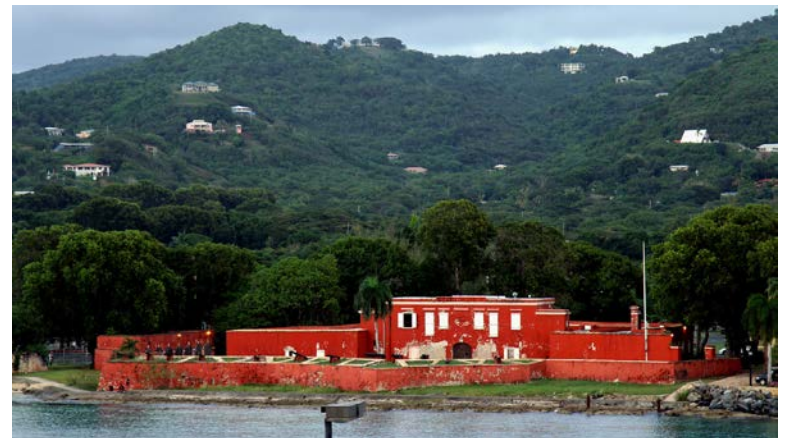
The topography of St. Thomas and St. John shaped an architecture that is often vertical in its orientation as individual building masses step up, or stack against, the steep terrain.

In St. Croix, given its flat, tillable, land, building masses were often located side by side, creating long horizontal expressions.

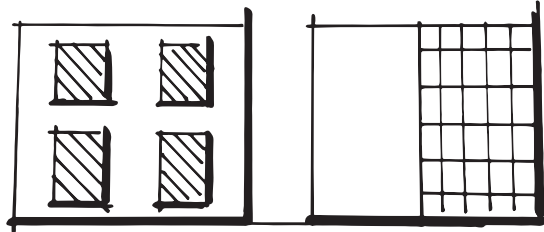
New construction in the islands should respond to the topography and celebrate the opportunity for island specific design.

Lower Left *St. Thomas Shoreline*

Lower Right *Fort Frederiksted, St. Croix. Credit: Prayitno*



8. Punched Openings, Shutters & Curtain Walls



Lower Left St. Thomas Campus, University of the Virgin Islands

Lower Right Left: Charlotte Amalie, St. Thomas
Right: Figure 14, *The Vernacular Architecture of Frederiksted*, Robert S. Brown

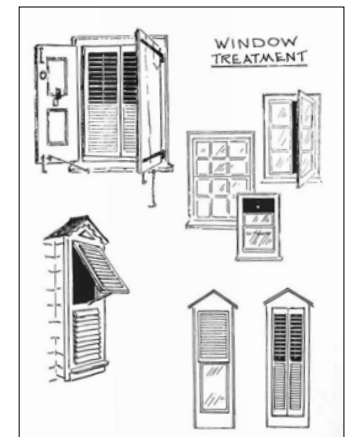


The historic architecture of the Virgin Islands exhibits a wide vocabulary of patterns and proportions when considering window size, shape and placement.

Windows were usually of the jalousie type to maximize air ventilation and light penetration. “Larger scaled openings, porches or galleries were typically open air and supported cool shaded rooms for one to sit and relax—while being able to carry on conversations with friends, as they might pass by in the street below.”²⁶

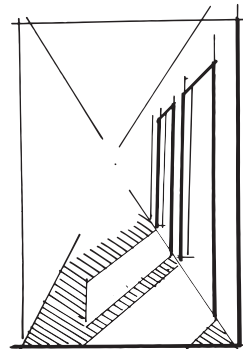
The variety of size, rhythm, and proportion of traditional building openings in the Virgin Islands creates great opportunity for new construction in the islands to artistically and sustainability connect the indoors and outdoors.

²⁶Robert S. Brown
The Vernacular Architecture of Frederiksted, Robert S. Brown (Page 10)



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9. Light & Shadow



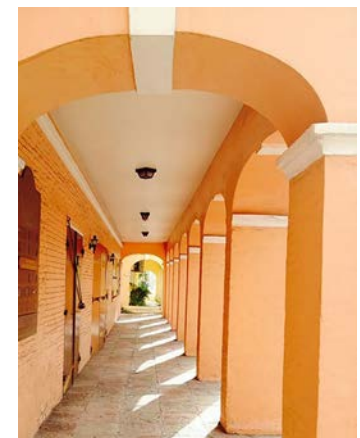
Throughout the islands, the application of balconies, overhangs, and porches, all add to the contextual patterning and scale of historic buildings.

These features mitigate the discomfort of direct sun, help control heat and energy gain and create beautiful, healthy outdoor living areas. The use of balconies, overhangs, and porches creates diversity of outdoor thermal experiences, particularly with the use of deep shade.

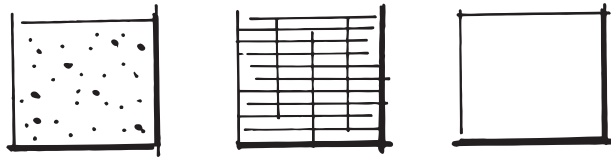
Leveraging traditional building shade elements in the design of new construction will minimize the need for artificial cooling and improve the overall user experience.

Lower Left Palm Passage, Charlotte Amalie, St. Thomas

Lower Right Left: King's Alley, Christiansted, St. Croix
Right: Historic Arcade King Street, Christiansted, St. Croix

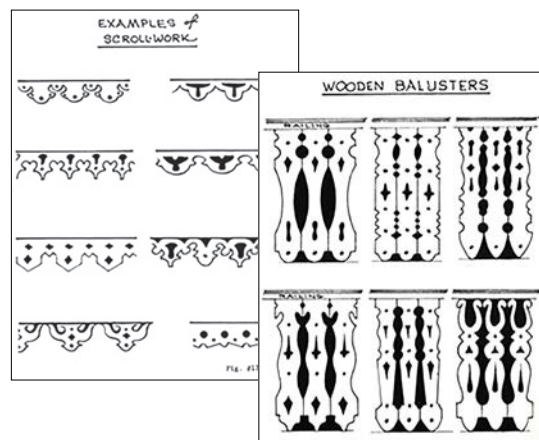


10. Scale, Materials, Texture & Color



Lower Left Figures 16 & 17,
The Vernacular Architecture of Frederiksted, Robert S. Brown

Lower Right Sunday Market Square, Christiansted, St. Croix



The architecture of the U.S. Virgin Islands incorporates a wide range of materials, both imported and local.

Historically, ballast, or heavy material such as gravel, sand, or iron, that was placed low in a vessel to improve its stability, was carried to the islands from Europe, removed, and then replaced with sugar cane for the return journey. This ballast material was integrated into the heavy masonry forms of the islands and was often decorated with metal and wood trim to provide detail, texture, and depth to the facade—everything from shutters and porticos, to scrollwork and trim. This richness of scale and materials was further augmented with the liberal use of color.

New construction and renovation projects on the islands have great opportunity to utilize scale, materials, texture, and color to capture the spirit and history of the place.



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Historical Continuum

The Educational Facility Master Plan encourages every school to celebrate the identity of its students, stakeholders, and surrounding community.

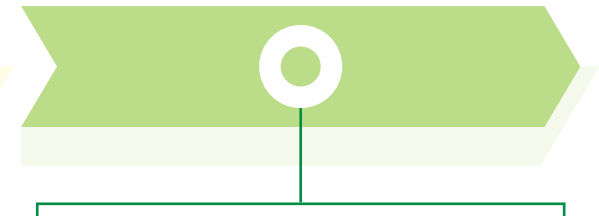
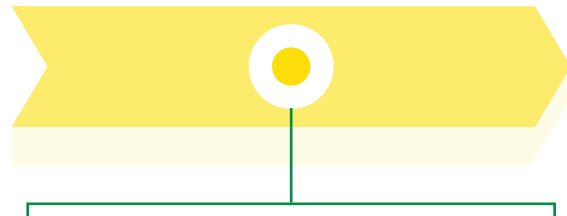
Design guidelines have been established in the advancement opportunities section of the master plan and are crafted so as to allow each school the opportunity to define its identity and historic character.

Formal Historic

Refers to USVI buildings whose stylistic patterns originate in Europe neo-classical architecture. Buildings in this category are typically civic or religious buildings that have a symmetrical front facade with a grand set of entrance steps and are made of stone or brick and finished in a yellow or white color.²⁷

Casual Vernacular

Refers to USVI buildings whose stylistic patterns evolved in response to climatic conditions and the fused architectural traditions of the craftsmen building them. These buildings are typically residences and commercial buildings that line the streets of the cities and towns. They are often asymmetrical with stairs to one side, covered colonnades and balconies (galleries) with ornamental railings, hipped roofs and windows/doors that are shuttered. They will typically have a stone or brick base with wood at the upper stories and are finished in bright or light colors.²⁸



Vernacular architecture is the architecture of a specific place that has evolved over many years and embodies both the culture and the collective wisdom of many generations.



Legislature Building, Charlotte Amalie, St. Thomas
Credit: Prayitno

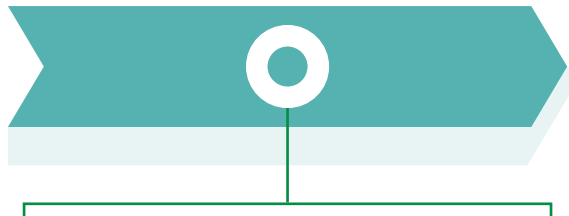


Christiansted, St. Croix
Credit: Wikipedia Common Media

²⁷⁻²⁸ *Virgin Islands Architectural History*
http://www.aiavi.org/VIR/History_Virgin-Islands-Architectural-History.cfm

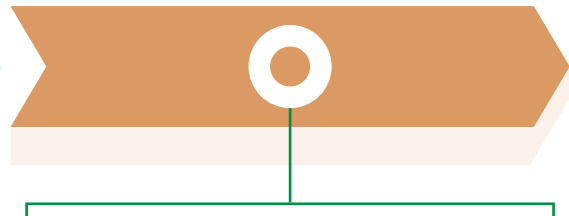
Interpretive / Revival

Refers to USVI buildings that borrow stylistic elements from both the historic and vernacular styles but arrange them in ways that break with the traditional forms and patterns previously used – on the one hand they revive historic styles but they are reinterpreted into a new less formal architectural language.



Transitional

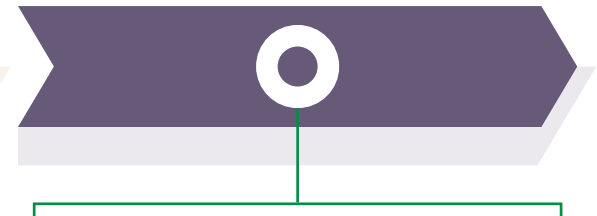
Refers to buildings that draw upon traditional proportions, patterns, rhythms and elements but they are not designed to copy any historic style. They will often combine both traditional materials such as brick with more contemporary materials such as metal panel and curtain wall and often the detailing and expression is restrained.



*Hawken School, Stirn Hall,
Upper School Academic Building, Gates Mills, Ohio*

Contemporary

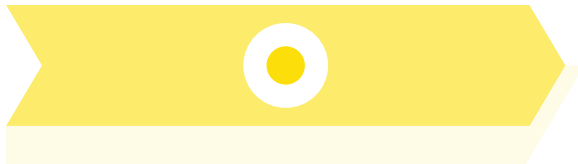
Refers to buildings that reimagine architecture in a truly unique expression using contemporary materials or traditional materials in a new way. They can include traditional elements such as balconies, porches and even hipped roofs, but these elements will be transformed beyond the traditional motifs and patterns. They often draw inspiration from biophilic patterns found in nature and respond very specifically to climatic conditions and internal functions to shape the building form and architectural language.



*Canyon View High School
Waddell, Arizona*

Vernacular Architecture

Formal Historic



Vernacular Typologies

- | | |
|-------------------------------|-----------------------------------|
| 1 Topography Site Orientation | 6 Solids Voids |
| 2 Civic Presence | 7 Horizontals Verticals |
| 3 An Arrival Sequence | 8 Openings Shutters Curtain Walls |
| 4 Pathways Patios Courtyards | 9 Light Shadow |
| 5 Volumes Forms | 10 Scale Materials Texture Color |



Top Old Danish Customs House Christiansted, St. Croix,
Credit: National Park Service

Bottom Government House, St. Croix
Credit: The Virgin Islands Consortium



Bottom Lutheran Church, St. Thomas

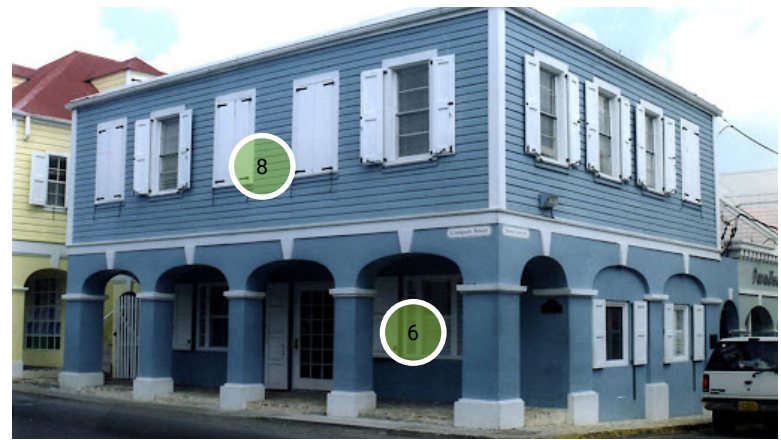


Casual Vernacular



Vernacular Typologies

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Top Company Street, St. Croix
Credit: Steven E. Hutchins Architects Inc.

Bottom Frederiksted, St. Croix



Bottom The Fred Boutique Hotel, Frederiksted, St. Croix



Vernacular Architecture

Interpretive/Revival



Vernacular Typologies

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Top Marysville Getchell High School Campus, Marysville, Washington

Bottom St. Thomas Campus, University of the Virgin Islands

Bottom St. Thomas Campus, University of the Virgin Islands Dormitory



Transitional



Vernacular Typologies

- | | |
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Bottom Santa Maria Bonita School District New Elementary School
Santa Maria, California



Top L.J.Z Suzhou Greenshore Lot16 Kindergarten | JiangSu, China

Bottom Wainwright Intermediate School | Tacoma, Washington



Vernacular Architecture

Contemporary



Vernacular Typologies

- | | |
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Bottom *Topeka Center for Advanced Learning & Careers, Topeka, Kansas*



Top *Pathfinder Kindergarten Center | Everett, Washington*

Bottom *Queen Creek Silver Valley Elementary School | Mesa, Arizona*





Top Reichhold Center for the Arts, St. Thomas

Left & Bottom Canyon View High School | Waddell, Arizona

