

COMMITTEE ON DISASTER RECOVERY, INFRASTRUCTURE
AND PLANNING

01/30/2024-AMENDED AND REPORTED OUT TO THE COMMITTEE ON RULES AND JUDICIARY

BILL NO. 35-0172

Thirty-Fifth Legislature of the Virgin Islands

October 18, 2023

An Act amending Title 29, chapter 5 Virgin Islands Code, relating to building codes to provide for adoption of nationally recognized consensus-based codes and standards and amendments to such codes that are in the best interests of the territory, and to provide for clarifications to the Virgin Islands building code

PROPOSED BY: Senators: Donna A. Frett-Gregory and Alma Francis Heyliger
Co-Sponsor: Novelle E. Francis, Jr.

1 **WHEREAS**, loss of life and widespread devastation from the 2017 Hurricanes Irma and
2 Maria illustrated the need to update the Virgin Islands Building Code to the 2018 editions of
3 the International Building Code and International Residential Code to increase the resistance
4 of buildings and structures and better protect life and property from natural hazards prevalent
5 in the Virgin Islands and contribute to resilient communities; and

6 **WHEREAS**, the Federal Emergency Management Agency deployed a Mitigation
7 Assessment Team after the 2017 hurricanes to evaluate damage to identify both successful and

8 **WHEREAS**, the Department of Planning and Natural Resources, in coordination with
9 the Federal Emergency Management Agency, evaluated the Virgin Islands Code and identified
10 amendments to clarify and amend the code to improve administration of the code, subsequent
11 adoption and amendments of the codes; and

1 **WHEREAS**, the Department of Planning and Natural Resources, in coordination with
2 the Federal Emergency Management Agency, evaluated the Virgin Islands Code and identified
3 amendments to clarify and amend technical provisions of the building codes related to wind
4 and flood hazards, and energy conservation, to incorporate Territory specific requirements;
5 Now, Therefore,

6 ***Be it enacted by the Legislature of the Virgin Islands:***

7 (a) Title 29 Virgin Islands Code, chapter 5, subchapter 1, section 292 is amended in the
8 following instances: (a) subsection (b) is amended in paragraph (3) after the last sentence by
9 adding a sentence that reads as follows: “Refer to Section 310 for additional requirements for
10 existing building.”

11 (b) subsection (c) is amended:

12 (1) After “practice” in the second sentence by inserting “following nationally
13 recognized consensus based codes and standards”; and

14 (2) after “recognized” in the last sentence by inserting “consensus based”.

15 (c) subsections (f), (g) and (h) are stricken.

16 (d) subsections (d) and (e) are re-designated as subsections (f) and (g) respectively and
17 new subsections (d) and (e) are added to read as follows:

18 “(d) **Adoption of Building Codes and Standards.** The building codes and
19 standards adopted in Section 292a shall be applicable to new building and structure and
20 existing buildings and structures. Each subsequent edition of the codes shall become
21 effective 6 months after publication. The Commissioner shall publish notice of the
22 adoption of subsequent editions of the codes not less than 3 months before the effective
23 date.”

1 (e) **Commissioner Duties.** The Commissioner, or his designee is authorized to
2 perform the duties and powers of the building official as defined in the International
3 Building Code, International Residential Code, International Energy Conservation Code
4 and associated codes and standards. The Commissioner shall have the authority to appoint
5 a deputy building official, the related technical officers, inspectors, plan examiners and
6 other employees. Such employees shall have powers as delegated by the Commissioner.”

7 (e) re-designated subsection (f) is amended by:

8 (1) striking “and hurricane standards, recommended by FEMA within its
9 Construction Information Guide for a Stronger Home 3rd Edition Feb. 1996 or for the
10 safety of the occupants thereof” and inserting “wind, and flood standards, as applicable”
11 and

12 (2) adding a sentence at the end that reads as follows: “The details of the
13 additional requirements shall be recorded and entered into the files of the Permitting
14 Office and shall be promulgated in regulations in accordance with law.”

15 (f) re-designated subsection (g) is amended:

16 (1) after the first sentence by adding a new sentence to read as follows: “Where
17 such projects are located in a special flood hazard area, prior to granting a variance to
18 provision in the Building Code for flood resistant construction, the Commissioner shall
19 satisfy the requirement for variances specified in Appendix G of the International
20 Building Code, as amended by this chapter.”

21 (2) after “describing the variance with the” by inserting “Division of
22 Comprehensive and Coastal Zone Planning, Division of Coastal Zone Management”.

1 (3) strike “Virgin Islands Historic Preservation Commission” and insert “Office
2 of State Historic Preservation, Division of Environmental Protection and Division of
3 Permits”.

4 (g) subsection (i) is re-designated as subsection (h) and amended by striking
5 “standardized” and by adding new paragraphs (1) through (4) to read as follows:

6 “(1) The Commissioner shall consider each edition of the codes adopted in Section
7 292a subsequent to the 2018 editions as the basis on which to consider amendments.”

8 “(2) The Commissioner shall consider only amendments that do not reduce the
9 structural integrity and safety of buildings.”

10 “(3) The Commissioner shall consider only amendments that are determined to be
11 in the best interests of the territory.”

12 “(4) Amendments to the code shall be provided in writing, published and available
13 to the public for reference at least 90 days prior to the date the codes are effective.”; and

14 (h) subsection (k) is stricken.

15 **SECTION 2.** Title 29 Virgin Islands Code, chapter 5, subchapter I, is amended adding
16 a new section “292a” to read as follows:

17 **§292a. Adoption and Amendment of Codes and Standards.**

18 (a) **General.** The Codes set forth in this title are hereby adopted by reference. Such
19 Codes shall be kept available for use or reference by the general public by the Department of
20 Planning and Natural Resources. No special permit shall be required for the installation of the
21 type of equipment covered except insofar as building structural elements are involved and
22 electrical and plumbing connections are to be made. Building, electrical, and plumbing permits
23 respectively shall be required where such work is to be done. If, however, on any inspection of
24 work involving elevators, moving stairs, dumbwaiters, boilers, gas piping, gas appliances, and

1 mechanical refrigeration systems (including air conditioning units), equipment and installation
2 work is found not to conform to the Codes cited in this title, the Commissioner may order that
3 corrections be made.

4 (b) **Public and Non-Public Buildings.**

5 (1) **International Building Code.** The International Building Code, effective
6 March 1, 2018, promulgated and published by the International Code Council, and any
7 subsequent editions or amendments thereto, is adopted and incorporated by reference in
8 the Virgin Islands Building Code as if fully set forth, except as it is amended by the
9 following provisions and any subsequent amendments adopted pursuant to Section
10 292(h) of this chapter. Each subsequent edition of the International Building Code shall
11 become effective 6 months after publication. This code shall be applicable to every public
12 and non-public building and structure in the Virgin Islands except one- and two-family
13 dwellings and townhouses not more than three stories in height with a separate means of
14 egress, and their accessory structures not more than three stories in height.

15 (2) **International Building Code Appendices.** Provisions in the appendices of
16 the International Building Code shall not apply unless specifically adopted by the
17 Commissioner of the Department of Planning and Natural Resources. The following
18 appendices are hereby specifically adopted and incorporated by reference: Appendix E –
19 Supplementary Accessibility Requirements; Appendix F - Rodent Proofing; Appendix G
20 – Flood Resistant Construction; Appendix I – Patio Covers; Appendix M – Tsunami
21 Generated Flood Hazards; and Appendix N – Replicable Buildings.

22 (3) **International Building Code Amendments.** When the International
23 Building Code is amended, the provisions herein shall be amended as set forth in this
24 section, where new text is shown underlined, deleted text is shown with strike-thru, and

1 “Reserved” means the section or item designation is retained and the content is deleted
2 in its entirety. Subsequent amendments may be adopted by the Commissioner of the
3 Department of Planning and Natural Resources pursuant to section 292a of this chapter.
4 The following amendments are hereby adopted.

5 (A) IV structure and shall be provided with a storm shelter constructed in accordance
6 with ICC 500. The Commissioner shall maintain a record of buildings with storm *Reserve*
7 *Section 402.6.4* as follows: Section 402.6.4 Plastic Signs. [Reserved.]

8 (B) *Add a new Section 423.3.1 as follows:* Section 423.3.1 Hurricane shelters. Public
9 schools with an occupant load of 50 or more, 911 call stations, emergency operations centers
10 and fire, rescue, ambulance and police stations shall comply with Table 1604.5 as a Risk
11 Category shelters.

12 (C) *Modify Section 1505.10 as follows:* Section 1505.10 Roof gardens and landscaped
13 roofs. Roof gardens and landscaped roofs shall comply with Section 1505.1 and 1507.16 and
14 shall be installed in accordance with ANSI/SPRI VF-1. Stone, loose materials or garden debris
15 capable of becoming wind-borne debris during a hurricane shall not be used as part of the
16 design and be removed regularly.

17 (D) *Add a new Section 1612.2.1 as follows:* Section 1612.2.1 Additional requirements
18 for enclosed areas below elevated buildings. In addition to the requirements of ASCE 24,
19 enclosed areas below elevated buildings:

20 (1) Shall not be partitioned or finished into separate rooms except for stairwells,
21 ramps, and elevators, unless a partition is required by the fire code. Where perimeter wall
22 foundations are permitted, this limitation does not apply to load-bearing walls interior to
23 the perimeter walls or partition walls when constructed above the base flood elevation.

1 (2) Shall have the minimum necessary access to allow for parking of vehicles
2 (garage door) or limited storage (standard exterior door) or entry to the elevated building
3 (stairway or elevator).

4 (3) Shall, in coastal high hazard areas and Coastal A Zones, be enclosed only by
5 insect screening, lattice work or decorative screening, provided the screening or lattice
6 work is designed to break away under base flood or lesser conditions without imparting
7 additional flood loads to the foundation of the building.

8 (E) Modify Section 1612.3 as follows: Section 1612.3 Establishment of flood hazard
9 areas. To establish flood hazard areas, the applicable governing authority shall adopt a flood
10 hazard map and supporting data. The flood hazard map shall include, at a minimum, areas of
11 special flood hazard as identified by the Federal Emergency Management Agency in an
12 engineering report entitled “The Flood Insurance Study for U.S. Virgin Islands,” dated April
13 16, 2007, as amended or revised with the accompanying Flood Insurance Rate Map (FIRM)
14 and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any
15 revisions thereto. The adopted flood hazard map and supporting data are hereby adopted by
16 reference and declared to be part of this section.

17 (F) *Modify Section 2901.1 as follows:* Section 2901.1 Scope. The provisions of this
18 chapter and the Uniform Plumbing Code shall govern the design, construction, erection and
19 installation of plumbing components, appliances, equipment and systems used in buildings and
20 structures covered by this code. Toilet and bathing rooms shall be constructed in accordance
21 with Section 1209. Private sewage disposal systems shall conform to the International Private
22 Sewage Disposal Code. The International Fire Code, and the Uniform Plumbing Code shall
23 govern the use and maintenance of plumbing components, appliances, equipment and systems.

1 The Uniform Plumbing Code shall govern the alteration, repair, relocation, replacement and
2 addition of plumbing components, appliances, equipment and systems.

3 (G) *Modify Appendix G Section G103.4 as follows:* Section G103.4 Activities in
4 riverine flood hazard areas with base flood elevations. In riverine flood hazard areas where
5 base elevations are specified but floodways have not been designated, the building official shall
6 not permit any new construction, substantial improvement or other development or
7 encroachment, including fill, unless the applicant submits an engineering analysis prepared by
8 a registered design professional, demonstrating that the cumulative effect of the proposed
9 development, when combined with all other existing and anticipated flood hazard area
10 encroachment, will not increase the base flood elevation more than 1 foot (305 mm) at any
11 point within the community.

12 (H) *Add a new Appendix G Section G103.4.1 as follows:* Section G103.4.1 Activities
13 in riverine flood hazard areas without base flood elevations. In riverine flood hazard areas
14 where base flood elevations are not specified and floodways have not been designated, the
15 building official shall not permit any new construction, substantial improvement or other
16 development or encroachment, including fill, within a minimum distance of 25 feet from the
17 top of the stream bank on each side, or 30 feet from the centerline of a stream, drainage way or
18 swale, whichever is greater, unless the applicant submits an engineering analysis prepared by
19 a registered design professional, demonstrating that the cumulative effect of the proposed
20 development, when combined with all other existing and anticipated flood hazard area
21 encroachment, will not result in any increase in flood levels during occurrence of the base flood
22 discharge.

1 (I) *Add a new Appendix G Section G501.0 as follows:* Section G501.0 Installation
2 prohibited. Installation of manufactured homes in floodways shall not be permitted except in
3 an existing manufactured home park or subdivision.

4 (4) **Additional requirements for public and non-public buildings.** In addition
5 to the requirements of the applicable building code, public and non-public buildings shall
6 comply with the following:

7 (A) **Roof mounted solar panels.** Where roof mounted solar panels are
8 provided, the solar panels shall have a hail damage rating of VSH (very severe hail)
9 in accordance with the latest edition of FM 4478, Roof Mounted Rigid Photovoltaic
10 Modules.

11 (B) **Mechanically mounted rails or racks for solar panels.** Mechanically
12 anchored rails or racks for solar panels shall be specified. Ballasted racks or rails
13 are not permitted. Racks and rails that are attached to the roof surface with adhesive
14 are not permitted.

15 (C) **Gutters.** Where external gutters are provided, gutter systems shall
16 meet the requirements specified in the latest edition of ANSI/SPRI GT-1, Test
17 Standard for Gutter Systems.

18 (c) **One- and Two-Family Dwellings and Townhouses.**

19 (1) **Detached one- and two-family dwellings and townhouses not more than**
20 **three stories in height with a separate means of egress and their accessory structures**
21 **not more than three stories above grade plane in height.** The International Residential
22 Code, effective March 1, 2018, promulgated and published by the International Code
23 Council, and any subsequent editions or amendments thereto, is adopted and incorporated
24 by reference in the Virgin Islands Building Code as if fully set forth, except as it is

1 amended by the following provisions and any subsequent amendments adopted pursuant
2 to Section 292(h) of this chapter. Each subsequent edition of the International Residential
3 Code shall become effective six months after publication. This code shall be applicable
4 to every residential building and structure in the Virgin Islands.

5 (2) **International Residential Code Appendices.** Provisions in the appendices
6 of The International Residential Code shall not apply unless specifically adopted. The
7 following appendices are hereby specifically adopted and incorporated by reference:
8 Appendix E – Manufactured Homes Used as Dwellings, Appendix F, Radon Methods,
9 Appendix H – Patio Covers, and Appendix I – Private Sewage Disposal.

10 (3) **International Residential Code Amendments.** The International
11 Residential Code shall be amended as set forth in this section, where new text is shown
12 underlined, deleted text is shown with strike-thru, and “Reserved” means the section is
13 deleted in its entirety. Subsequent amendments may be adopted pursuant to Section 292a
14 of this chapter.

15 (A) *Modify Section R301.1.1 as follows:* Section R301.1.1 Alternate
16 Provisions. As an alternative to the requirements in Section R301.1, the following
17 standards are permitted subject to the limitations of this code and the limitations
18 therein. Where engineered design is used in conjunction with these standards, the
19 design shall comply with the *International Building Code*.

- 20 1. AWC Wood Frame Construction Manual (WFCM).
- 21 2. AISI Standard for Cold-Formed Steel Framing-Prescriptive
22 Method for One- and Two-Family Dwellings (AISI S230).
- 23 3. ICC Standard on the Design and Construction of Log Structures
24 (ICC 400).

1 4. Construction Information for a Stronger Home (4th Edition, April
 2 2018 such that wind loads meets or exceed current values in the International
 3 Residential Code.

4 (B) Complete Table R301.2(1) as shown in the following figure:

5 EXHIBIT A: TABLE R301.2(1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

6 (C) Modify Section R301.2.1.5 as follows:

TABLE R301.2(1)
 CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

GROUND SNOW LOAD ^a	WIND DESIGN				SEISMIC DESIGN CATEGORY ^f	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP ^a	ICE BARRIER UNDERLAYMENT REQUIRED ^b	FLOOD HAZARDS ^g	AIR FREEZING INDEX ⁱ	MEAN ANNUAL TEMP ^h
	Speed ^d (mph)	Topographic effects ^b	Special wind region ⁱ	Windborne debris zone ^e		Weathering ^a	Frost line depth ^b	Termite ^e					
N/A	165 MPH	YES	NO	ZONE 3	D2	NEGLIGIBLE	N/A	V HEAVY	60 deg F	NO	SEE IBC SECTION 1612	ZERO	78 deg F
MANUAL J DESIGN CRITERIA ^a													
Elevation	Latitude		Winter heating	Summer cooling	Altitude correction factor	Indoor design temperature	Design temperature cooling		Heating temperature difference				
50 FT	N18d00m		65 deg F	94 deg F	zero	68 - 78 deg F	74 - 78 deg F		15 - 20 deg F				
Cooling temperature difference	Wind velocity heating		Wind velocity cooling	Coincident wet bulb	Daily range	Winter humidity	Summer humidity		—				
15 - 20 deg F	10 MPH		10 MPH	77.7 deg F	10 - 15 deg F	30 - 45 %	50 - 60 %		—				

7 1. Modify Section R301.2.1.5. Section R301.2.1.5 Topographic
 8 wind effects. Topographic wind effects shall be considered in the design of
 9 the building in accordance with Section R301.2.1.5.1 or in accordance with
 10 the most current provisions of ASCE 7.

11 2. Modify Section R301.2.1.5.1. Section R301.2.1.5.1 Simplified
 12 topographic wind speed-up method. As an alternative to the ASCE 7
 13 topographic wind provisions, the provisions of Section R301.2.1.5.1 shall be
 14 permitted to be used to design for wind speed-up effects. Structures shall be
 15 designed for an increased basic wind speed as determined by Figure(s)
 16 R301.2.1.5.1 (4) through R301.2.1.5.1(6). The most current version of these
 17 maps at the time of construction shall apply.

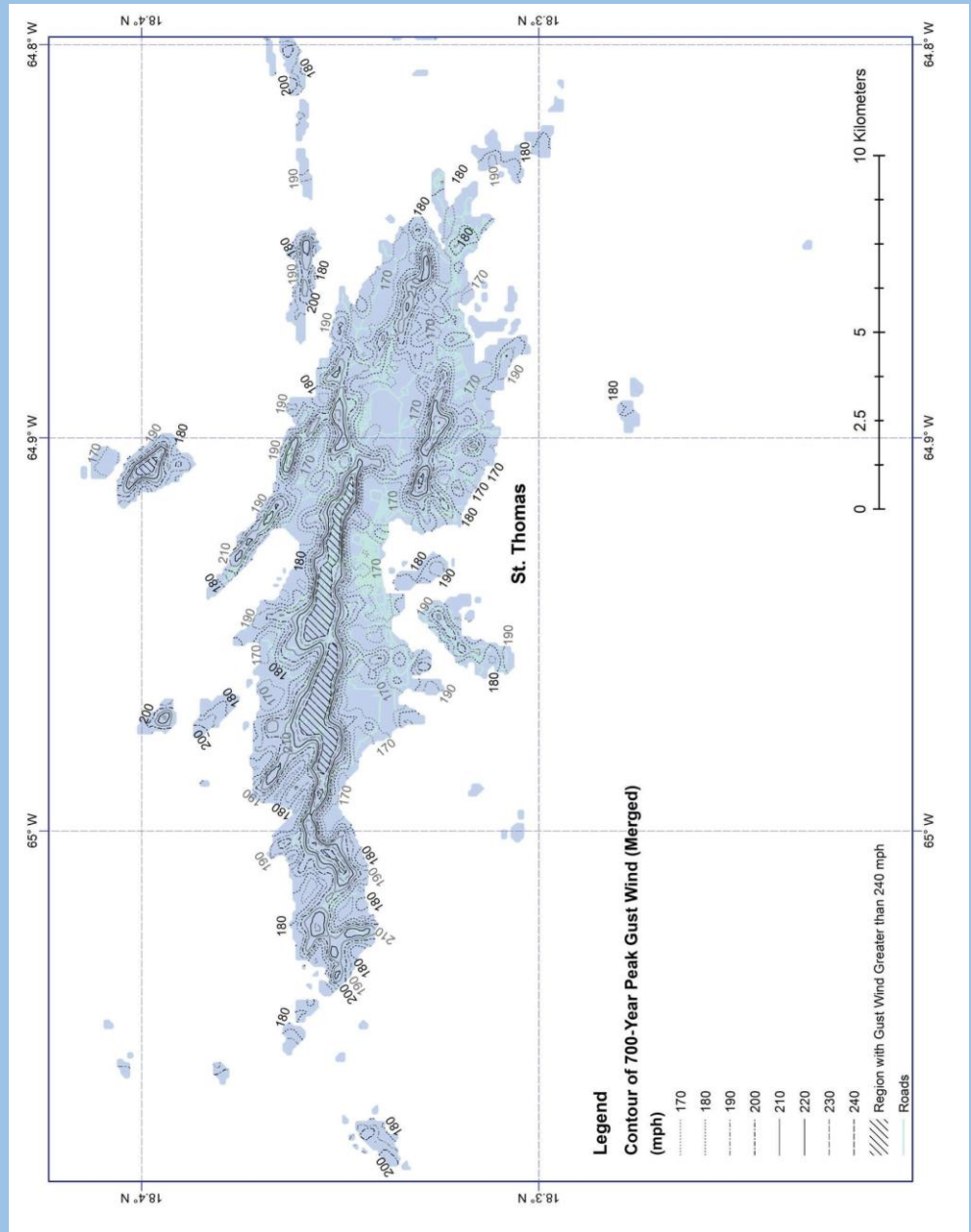


Figure R301.2.1.5.1 (4) - Wind Speed-Up Map for St. Thomas, USVI

(lookup tool <http://hazards.actcouncil.org>)

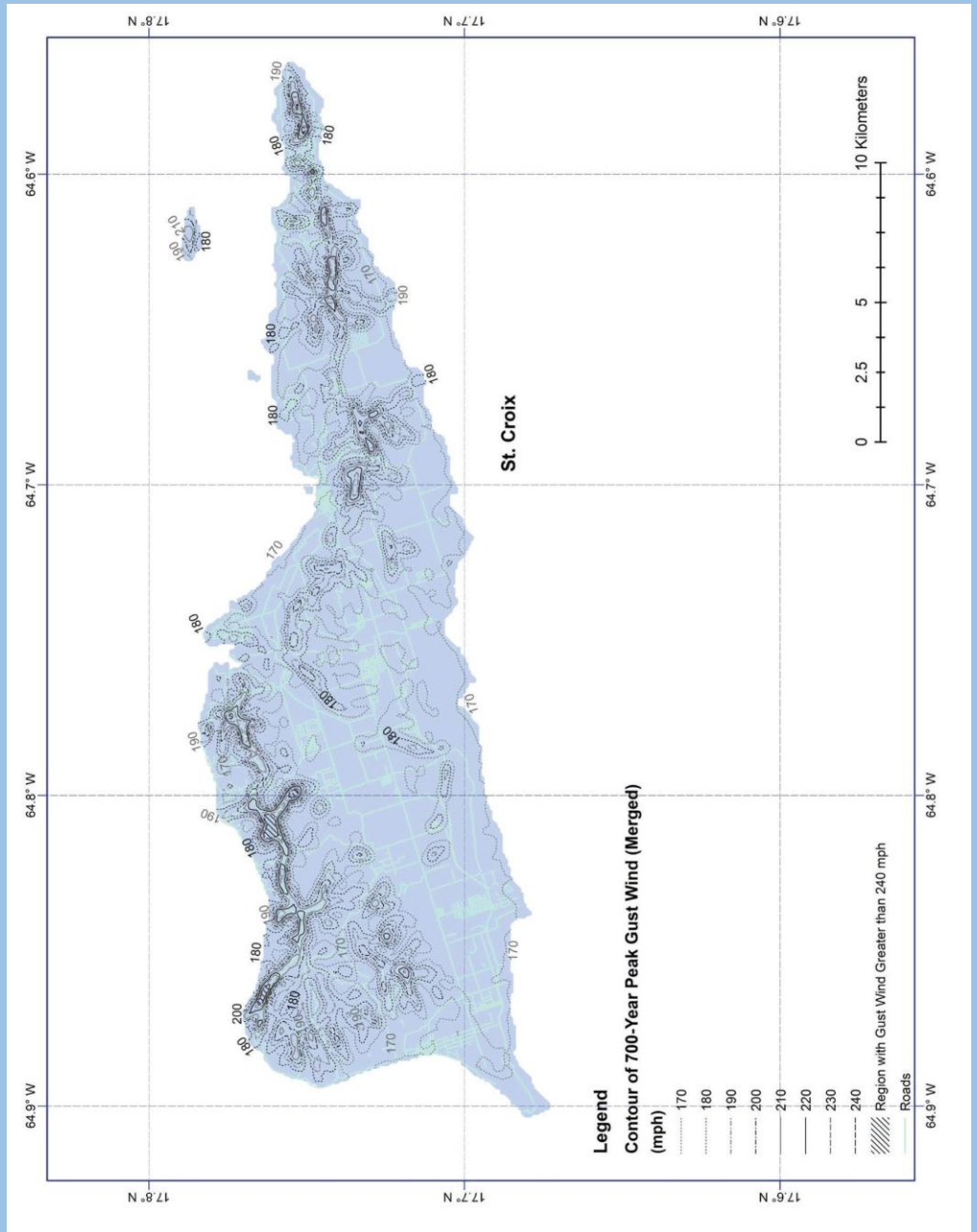


Figure R301.2.1.5.1 (5) - Wind Speed-Up Map for St. Croix, USVI

(lookup tool <http://hazards.actcouncil.org>)

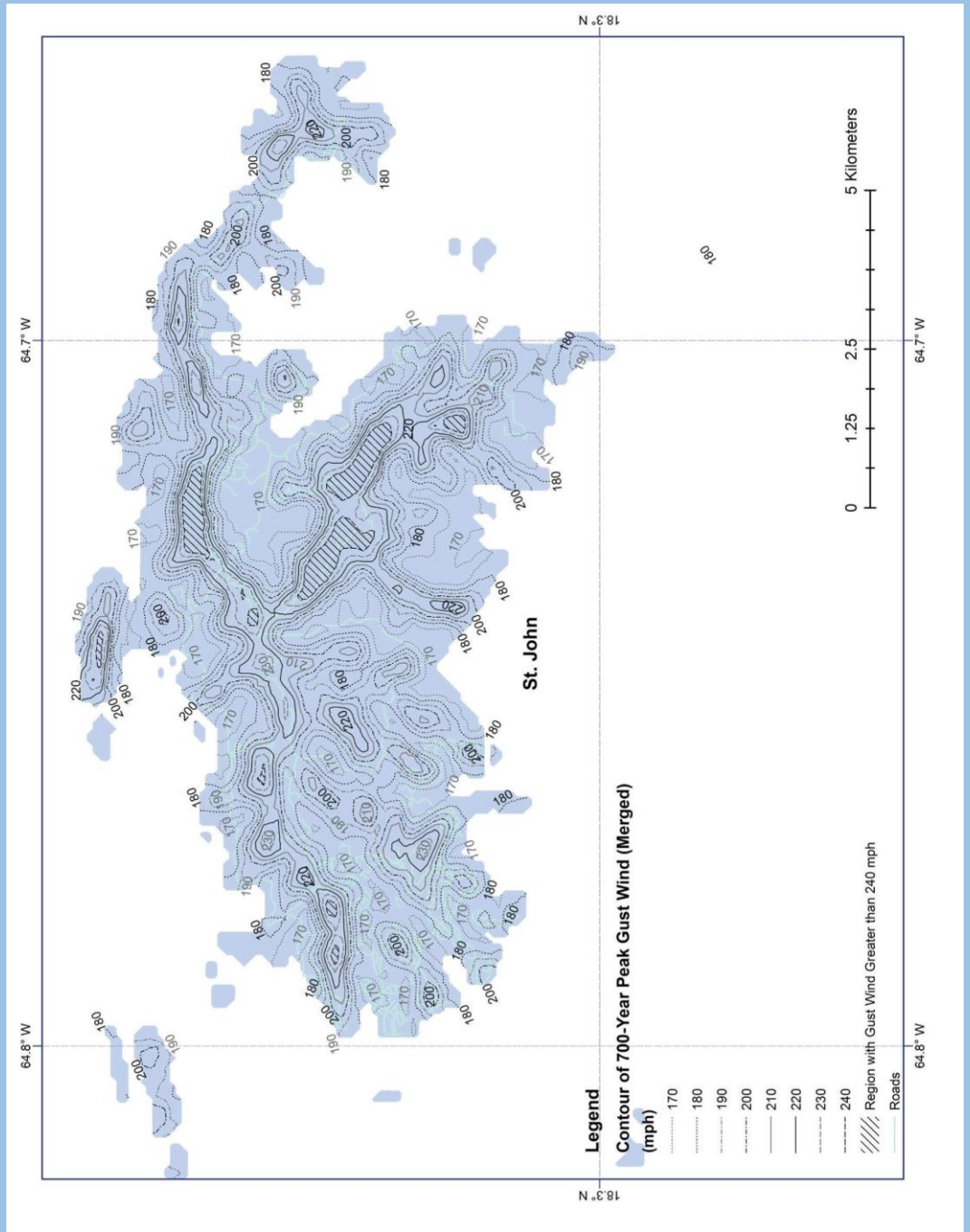


Figure R301.2.1.5.1 (6) - Wind Speed-Up Map for St. John, USVI

(lookup tool <http://hazards.actcouncil.org>)

1 (D) *Modify Section R301.2.4 as follows:* Section R301.2.4 Floodplain
2 construction. Buildings and structures constructed in whole or in part in flood
3 hazard areas (including A or V Zones) as established in Table R301.2(1), and
4 substantial improvement and repair of substantial damage of buildings and
5 structures in flood hazard areas, shall be designed and constructed in accordance
6 with ASCE 24.

7 (E) *Modify Section R302.3 as follows:* Section R302.3 Two-family
8 dwellings. Dwelling units in two-family dwellings shall be separated from each
9 other by wall and floor assemblies having not less than a 2-hour fire-resistance
10 rating where tested in accordance with ASTM E119, UL 263 or Section 703.3 of
11 the International Building Code. Fire-resistance-rated floor/ceiling and wall
12 assemblies shall extend to and be tight against the exterior wall, and wall assemblies
13 shall extend from the foundation to the underside of the roof sheathing.

14 (F) *Reserve Section R309.5 as follows:* Section R309.5 Fire sprinklers.

15 [Reserved.]

16 (G) *Modify Section R313 as follows:*

17 1. *Modify Section R313.1:* Section R313.1 Townhouse fire resistance.
18 Townhouses shall be provided with a common 2-hour fire-resistance-rated wall
19 assembly tested in accordance with ASTM E119, UL 263. The wall shall be rated
20 for fire exposure from both sides and shall extend to and be tight against exterior
21 walls and the underside of the roof sheathing. Electrical installations shall be
22 installed in accordance with Chapters 34 through 43. Penetrations of electrical
23 outlet boxes shall be in accordance with Section R302.4. The fire-resistance-rated

1 wall or wall assemblies separating townhouses shall be continuous from the
2 foundation to the underside of the roof sheathing, deck or slab. The fire resistance
3 rating shall apply to the full length of the wall or assembly, including wall
4 extensions.

5 Exception: Where automatic sprinkler systems are provided, the wall or wall
6 assemblies separating townhouses shall have not less than a 1-hour fire-resistance
7 rating tested in accordance with ASTM E119, UL 263.

8 2. *Reserve Section R313.1.1 as follows:* Section R313.1.1 Design and
9 Installation. [Reserved.]

10 3. *Reserve Section R313.2 as follows:* Section R313.2 One-and two-
11 family dwellings automatic fire sprinkler systems. [Reserved.]

12 4. *Reserve Section R313.2.1 as follows:* Section R313.2.1 Design and
13 installation. [Reserved.]

14 (H) *Modify Section R322.1 as follows:* Section R322.1 General. Buildings
15 and structures constructed in whole or in part in flood hazard areas, including A or
16 V Zones and Coastal A Zones, as established in Table R301.2(1), and substantial
17 improvement and repair of substantial damage of buildings and structures in flood
18 hazard areas, shall be designed and constructed in accordance with ASCE 24.

19 (I) *Reserve Section R322.1.1 and all subsequent sections in Section R322*
20 *through Section R322.3.10 as follows:*

21 Section R322.1.1 Alternative provisions. [Reserved.]

22 Section R322.1.2 Structural systems. [Reserved.]

23 Section R322.1.3 Flood-resistant construction. [Reserved.]

24 Section R322.1.4 Establishing the design flood elevation. [Reserved.]

1 Section R322.1.4.1 Determination of design flood elevations. [Reserved.]

2 Section R322.1.4.2 Determination of impacts. [Reserved.]

3 Section R322.1.5 Lowest floor. [Reserved.]

4 Section R322.1.6 Protection of mechanical, plumbing and electrical systems.

5 [Reserved.]

6 Section R322.1.7 Protection of water supply and sanitary sewage systems.

7 [Reserved.]

8 Section R322.1.8 Flood-resistant materials. [Reserved.]

9 Section R322.1.9 Manufactured homes. [Reserved.]

10 Section R322.1.10 As-built elevation documentation. [Reserved.]

11 Section R322.2 Flood hazard areas (including A Zones). [Reserved.]

12 Section R322.3 Coastal high-hazard areas (including V Zones and Coastal A
13 Zones, where designated). [Reserved.]

14 (4) **Additional requirements for one- and two-family dwellings and**
15 **townhouses.** In addition to the requirements of the applicable building code, one-and
16 two-family dwellings and town homes shall comply with the following:

17 (A) **Staged Construction.** Where staged construction occurs and the duration of
18 residential construction will exceed 6 months, or construction has been suspended for
19 longer than 6 months, or where unfinished construction will be exposed to the
20 environment for longer than 6 months, provisions shall be made for weathering protection
21 of exposed materials (i.e., rebar, wood, etc.). When a permit renewal is requested, the
22 architect or engineer of record shall demonstrate that any materials not protected from
23 weathering that were exposed for longer than 6 months have maintained adequate
24 strength.

1 (B) **Roof systems.** Roof systems shall meet the more restrictive requirements in
2 the latest edition of the Construction Information for a Stronger Home and the
3 International Residential Code. In addition, the following conditions shall apply:

4 1. Corrugated metal roof panels shall meet the requirements of ASTM
5 A792 Grade 50-B (aluminium zinc alloy), 24-guage minimum, 7/8" ribs at 2-5/8"
6 on center. Factory-applied coating is optional.

7 2. At roof panel eaves and ridge/hips, pre-fabricated foam closures and
8 sealant tape shall be provided. Sealant tape shall be provided at side laps.

9 3. Hip, ridge and rake flashings shall be the same material type and gauge
10 as the roof panels.

11 4. Exposed fasteners for corrugated metal panels shall be #14 x 2-1/2"
12 Long Stainless Steel Self-Drilling Roofing Screw and minimum 1/2" diameter
13 gasketed washer for attaching to nailers. Metal roof panel fasteners shall be 1" long
14 for stitching panel side laps and attaching hip and ridge flashings.

15 5. All Pressure treated wood used under the metal roofing shall have Use
16 Category of UC3A for above ground installation shall be manufactured in
17 accordance with the American Wood Protection Association requirements.

18 6. Underlayment: Where corrugated metal roof systems are provided, self
19 adhering modified bitumen complying with ASTM D1970 shall be provided under
20 metal roof panels.

21 7. Rafters shall have a minimum nominal thickness of 3-inches (3x
22 section).

1 (C) **Roof mounted solar panels.** Where roof mounted solar panels are provided,
2 the solar panels shall have a hail damage rating of VSH (very severe hail) in accordance
3 with the latest edition of FM 4478, Roof Mounted Rigid Photovoltaic Modules.

4 (D) **Mechanically mounted rails or racks for solar panels.** Mechanically
5 anchored rails or racks for solar panels shall be specified. Ballasted racks or rails are not
6 permitted. Racks and rails that are attached to the roof surface with adhesive are not
7 permitted.

8 (E) **Gutters.** Where external gutters are provided, gutter systems shall meet the
9 requirements specified in the latest edition of ANSI/SPRI GT-1, Test Standard for Gutter
10 Systems.

11 **(d) Energy Requirements.**

12 (1) **International Energy Conservation Code.** The International Energy
13 Conservation Code, effective March 1, 2018, promulgated and published by the
14 International Code Council, and any subsequent editions or amendments thereto, is
15 adopted and incorporated by reference in the Virgin Islands Building Code as if fully set
16 forth, except as it is amended by the following provisions and any subsequent
17 amendments adopted pursuant to Section 292(h) of this chapter. Each subsequent edition
18 of the International Energy Conservation Code shall become effective six months after
19 publication. This code shall be applicable to every building and structure in the Virgin
20 Islands.

21 (2) **International Energy Conservation Code Appendices.** Appendices of the
22 4 International Energy Conservation Code are not adopted.

23 (3) **International Energy Conservation Code Amendments.** The International
24 Energy Conservation Code shall be amended as set forth in this section, where new text

1 is shown underlined, deleted text is shown with strike-thru, and “Reserved” means the
2 section is deleted in its entirety. Subsequent amendments may be adopted pursuant to
3 Section 292a 9 of this chapter.

4 (A) In the ICC-Commercial Provisions, modify Section C302.1 as follows:

5 Section C302.1 Interior design conditions. The interior design temperatures used
6 for heating and cooling load calculations shall be a maximum of 72°F (22°C) for
7 13 heating and minimum of 75°F (24°C) for cooling.

8 (B) In the ICC-Commercial Provisions, reserve Section C406 as follows:

9 Section C406. Additional Efficiency Package Options. [Reserved.]

10 (C) In the ICC-Residential Provisions, reserve Section R401.2.1, item 7, as

11 follows: Section R401.2.1 Tropical Zone 7. [Reserved.]

12 (D) In the ICC-Residential Provisions, reserve Chapter 5 as follows:

13 Chapter 5 [RE], Existing Buildings. [Reserved.]

14 **SECTION 3.** Title 29 Virgin Islands Code, chapter 5, subchapter I, section 293 is
15 amended in the following instances:

16 (a) by striking the introductory clause and adding a new introductory clause to read as
17 follows: “Unless otherwise noted by this section, terms defined in the codes and standards
18 adopted in Section 292a, including the International Building Code, International Residential
19 Code, International Fire Code, International Energy Conservation Code, International
20 Mechanical Code, and Uniform Plumbing Code, shall have the meanings ascribed to them in
21 those codes.”;

22 (b) by striking the following terms and their definitions “Additions,” “Alterations,”
23 “Bearing wall,” “Conversion,” “Dead load,” “Dwelling,” “Dwelling unit,” “Existing building,”
24 “Foundation wall,” “Habitable room,” Height of building,” “Height of a wall,” “Live load,”

1 “Masonry,” “Nonbearing wall,” “Prefabricated,” “Property line,” “Reconstruction,” “Repair,”
2 “Residential occupancy,” “Structural alteration,” “Structure,” and “Use”; and

3 (c) by adding and inserting new definitions in alphabetical order to read as follows:

4 Building official-Commissioner of Planning and Natural Resources.

5 Rural area—Encompasses all population, housing, and land area not included
6 within an urban area. Staged Construction – Residential construction that occurs either
7 over a period of time longer than 6 months, or where construction is suspended
8 temporarily for longer than 6 months, or where the building owner is living in one portion
9 of the home while another portion, floor or level is under construction and exposed to the
10 environment.

11 Urban area—Comprises a densely settled core of census tracts and/or census blocks
12 that meet minimum population density requirements, along with adjacent land area
13 containing non-residential urban land uses as well as land area with low population
14 density included to link outlying densely settled land area with the densely settled core.
15 To qualify as an urban area, the land area identified according to criteria must encompass
16 at least 2,500 people, at least 1,500 of which reside outside institutional group quarters.
17 The U.S. Census Bureau identifies two types of urban areas: Urbanized Areas (UAs) of
18 50,000 or more people; Urban Clusters (UCs) of at least 2,500 and less than 50,000
19 people. Refer to the U.S. Census for definitions and terms related to urban area.

20 **SECTION 4.** Title 29 Virgin Islands Code, chapter 5, subchapter II, section 294 is
21 amended in the following instances:

22 (a) In subsection (b) “Issuance of permits”, paragraph (3) (i) by inserting “and” after
23 “regulations” and (ii) by inserting a period after “Officials” and striking “; (iii) the solar energy
24 and hydronic heating/cooling systems proposed conform in design and materials to the most

1 current edition of the Uniform Solar Energy published by the International Association of
2 Plumbing and Mechanical Officials.”

3 (b) In subsection (e) by re-designating paragraph (14) as paragraph (16) and inserting
4 new paragraphs (14) and (15) to read as follows:

5 “(14) The specific code and edition of the code on which the designs are based.

6 (15) The design loads and other information pertinent to the structural design,
7 including design data for wind, earthquake, and flood loads.”

8 **SECTION 5.** Title 29 Virgin Islands Code, chapter 5, subchapter II, section 296 is
9 amended in the following instances:

10 (a) In subsection (a) by striking “Except as provided in subsection (c) of this section
11 and inserting “The Commissioner shall establish and maintain a schedule for commercial and
12 residential”;

13 (b) In subsection (b) by striking paragraphs (4) and (5); section 296 is further amended
14 by striking subsections (c), (d), (e) and (f); subsections (g), (h), and (i) are re-designated as
15 subsections (c), (d), and (e) respectively.

16 (c) In subsection (i) by striking “and in the building codes adopted by reference in
17 section 311 of this chapter”.

18 **SECTION 6.** Title 29 Virgin Islands Code, chapter 5, subchapter V, section 301 is
19 amended in the following instances:

20 (a) In the short title by striking “Design and facilities requirements” and inserting
21 “Residential design and facilities requirements”; and in the introductory clause after “design
22 and facilities to the” by inserting “applicable requirements of the Building code and”;

23 (b) subsection (d) is re-designated subsection (e) and a new subsection (d) is inserted
24 to read:

1 “(d) Jalousie Style Windows and Openings

2 (1) Jalousie style windows shall meet the requirements of the applicable
3 sections of the Building Code for louvered windows or jalousies, specifically but
4 not limited to International Residential Code Section R308.2 and International
5 Building Code Section 2403.5.

6 (2) Jalousie style windows and openings, including those with glazing and
7 metal style louvers, shall meet the applicable sections of the Building Code for
8 Emergency Escape and Rescue Openings, specifically International Residential
9 Code Section R310 and International Building Code Section 1030.

10 (3) Jalousie style windows and openings with glazing shall meet the
11 applicable sections of the Building Code for windborne debris protection and
12 protection of openings, specifically International Residential Code Section R609.6
13 and International Building Code Section 1609.2.”; and

14 (c) re-designated subsection (e) is amended by adding at the end a sentence that reads
15 as follows: “Rural areas are defined in Section 293 of this chapter.”

16 **SECTION 7.** Title 29 Virgin Islands Code, chapter 5, subchapter VII, section 303,
17 subsection (a) is amended by striking the last sentence and by adding a sentence at the end that
18 reads as follows: “Wood foundation shall be designed in accordance with accepted engineering
19 practice.”

20 **SECTION 8.** Title 29 Virgin Islands Code, chapter 5, subchapter VIII, section 308 is
21 amended in the following instances:

22 (a) In subsection (a) General, after “building” by striking “; except dwellings and
23 single unit apartments with connected access to the potable water system,”; and after “supply

1 system” by inserting “, except such systems shall not be required for commercial developments,
2 dwellings, and single unit apartments with connected access to the potable water system”;

3 (b) subsection (b) Cistern capacity, is amended as follows: (1) in paragraph (4) by
4 inserting at the end “and provided the cistern is not used for a fire sprinkler system”; by
5 inserting a new paragraph (5) to read as follows:

6 “(5) Where fire sprinklers are provided, the cistern shall meet the requirements for
7 water supply provided in Chapter 6, NFPA 13D Standard for the Installation of Sprinkler
8 Systems in One- and Two-Family Dwellings and Manufactured Homes.”

9 (c) In subsection (c) Cistern-Specifications, by inserting a new paragraph (4) to read
10 as follows:

11 “(4) Cisterns used for potable water shall meet the following individual water
12 supply requirements for water quality, disinfection of system, and pumps.

13 (i) Water from an individual water supply shall be approved by the
14 Commissioner prior to connection to the plumbing system.

15 (ii) After construction, the new potable water supply system shall be
16 purged of deleterious matter and disinfected prior to utilization. The method to be
17 followed shall be that prescribed by the health authority or water purveyor having
18 jurisdiction or, in the absence of a prescribed method, the procedure described in
19 either AWWA C651 or AWWA C652, or as described in this section. This
20 requirement shall apply to “on-site” or “in-plant” fabrication of a system or to a
21 modular portion of a system.

22 (1) The pipe system shall be flushed with clean, potable water until
23 dirty water does not appear at the points of outlet.

1 (2) The system or part thereof shall be filled with a water/chlorine
2 solution containing not less than 50 parts per million (50 mg/L) of chlorine,
3 and the system or part thereof shall be valved off and allowed to stand for 24
4 hours; or the system or part thereof shall be filled with a water/chlorine
5 solution containing not less than 200 parts per million (200 mg/L) of chlorine
6 and allowed to stand for 3 hours.

7 (3) Following the required standing time, the system shall be flushed
8 with clean potable water until the chlorine is purged from the system.

9 (4) The procedure shall be repeated where shown by a
10 bacteriological examination that contamination remains present in the
11 system.

12 (iii) Pumps shall be rated for the transport of potable water. Pumps in an
13 individual water supply system shall be constructed and installed so as to prevent
14 contamination from entering a potable water supply through the pump units. Pumps
15 shall be sealed to the well casing or covered with a water-tight seal. Pumps shall be
16 designed to maintain a prime and installed such that ready access is provided to the
17 pump parts of the entire assembly for repairs. The pump room or enclosure around
18 a well pump shall be drained.”

19 (d) In subsection (d) Gutters and downspouts, by adding at the end a new sentence to
20 read as follows: “Gutters and downspouts installed for conducting water into cisterns shall meet
21 all requirements in the applicable codes and standards referenced in this chapter, specifically
22 the capability to resist the wind loads.”; and

23 (e) In subsection (e) Wells. by designating the undesignated text as paragraph (3) and
24 by inserting paragraphs (1) and (2) to read as follows:

1 “(1) Wells used for potable water shall meet the individual water supply
2 requirements for water quantity , disinfection of system , and pumps referred to in
3 Section 308 (c)(4).”

4 “(2) Where fire sprinklers are provided, the well shall meet the requirements for
5 water supply provided in Chapter 6, NFPA 13D Standard for the Installation of Sprinkler
6 Systems in One- and Two-Family Dwellings and Manufactured Homes.”

7 **SECTION 9.** Title 29 Virgin Islands Code, chapter 5, subchapter VIII section 309 is
8 amended by striking the last sentence and adding a new sentence at the end to read as follows:
9 “The water line and fire hydrants shall meet the applicable provisions of the International Fire
10 Code; NFPA 1 Fire Code; and NFPA 14 Standard for the Installation of Standpipe and Hose
11 Systems.”

12 **SECTION 10.** Title 29 Virgin Islands Code, chapter 5, subchapter IX, section 310 is
13 amended in the following instances:

14 (a) in “General” by striking “The” and inserting “After May 1, 1964 the”; and by
15 striking “at May 1, 1964.”;

16 (b) in paragraph (8) by striking “Hurricane Marilyn or any subsequent”.; and by
17 striking “292(f),(g), and (h) and inserting “292a”

18 **SECTION 11.** Title 29 Virgin Islands Code, chapter 5, subchapter X is amended in the
19 following instances:

20 (a) subchapter X is reserved; and

21 (b) section 311 is stricken.

BILL SUMMARY

23 **SECTION 1** of this bill amends title 29, chapter 5, subchapter I, section 292 by
24 specifying that accepted engineering practices set forth in nationally recognized consensus
25 based codes and standards are the basis for building requirements in the Virgin Islands and,
26 further, this section establishes the effective date of subsequent editions of the building codes

1 published by the International Code Council and authorizes the Commissioner of the
2 Department of Planning and Natural Resources to perform the duties of the building official
3 pursuant to administration of building codes. Provisions specifying which building codes are
4 adopted are moved to a new section in Title 29, chapter 5. The Commissioner's authority to
5 amend subsequent editions of the codes is established, providing such amendments do not
6 reduce safety of buildings and are in the best interests of the Territory. Publication of the
7 amendments is required.

8 **SECTION 2** of this bill amends title 29, subchapter I, chapter 5 by adding section 292a
9 to specify adoption and amendment of codes and standards that govern the design and
10 construction of all buildings and structures in the Virgin Islands. Some provisions in this section
11 are moved from section 311. The 2018 editions of the International Building Code (IBC) and
12 International Residential Code (IRC) are adopted. This section adopts specific appendices in
13 those codes, including:

14 1. IBC appendices: accessibility requirements, rodent proofing, flood resistant
15 construction, patio covers, tsunami generated flood hazards, and replicable buildings.
16

17 2. IRC appendices: manufactured homes used as dwellings, radon methods, patio
18 covers, and private sewage disposal.

19 After Hurricanes Hurricane Maria and Irma, the Department of Planning and Natural
20 Resources and the Federal Emergency Management Agency reviewed those codes and
21 developed proposed changes to certain sections to make those codes applicable to the Virgin
22 Islands. In this section of the bill, the changes to those codes are set forth using underline and
23 strike through format to clearly inform users of the changes. The changes accomplish the
24 following:

25 1. Require hurricane shelters in certain buildings and specify the standard used to
26 design those shelters.
27

28 2. Limit the use of stone and loose materials in the design of roof gardens and
29 landscaped roofs.
30

31 3. Limit partitioning of and access to enclosed areas below elevated buildings in all
32 flood hazard areas, and specifying only insect screening, lattice work or decorative screening
33 may be used to enclose areas below elevated buildings in coastal high hazard areas (Zone V)
34 and Coastal A Zones.
35

36 4. Specify the title and date of the current effective Flood Insurance Study for the U.S.
37 Virgin Islands.
38

39 5. Modify provisions related to development and encroachments in certain riverine
40 flood hazard areas.
41

42 6. Limit installation of manufactured homes in floodways, where floodwater tends to
43 be deeper and flow faster, unless the sites are located in existing manufactured home parks or

1 subdivisions that were in existence before the Virgin Islands was approved to participate in the
2 National Flood Insurance Program (October 15, 1980).

3
4 7. Adopt requirements for roof mounted solar panels to be resistant to hail impact
5 (provides resistance to impact by windborne debris) and to require gutters to resist wind loads
6 in accordance with a nationally recognized standard.

7
8 8. Specify designs of one- and two-family dwellings may be prepared using the April
9 2018 edition of the Virgin Island's Construction Information for A Stronger Home which was
10 revised in cooperation with the Federal Emergency Management Agency.

11
12 9. In the IRC, complete the Climatic and Geographic Design Criteria table in the
13 International Residential Code with values that are applicable in the Virgin Islands.

14
15 10. For dwellings, modify the requirements for topographic wind effects to [SPECIFIC
16 CHANGE PENDING DPNR RESULTS OF STUDY]

17 11. Require one- and two-family dwellings and townhomes constructed in flood hazard
18 areas to be designed in accordance with a standard referenced in the International Codes, ASCE
19 24 Flood Resistant Design and Construction.

20
21 12. Increase the fire-resistance rating of walls and floors separating dwelling units in
22 two-family dwellings.

23
24 13. Delete requirements for fire sprinklers in private garages.

25
26 14. Delete requirements for fire sprinklers in townhouses and increase the fire-
27 resistance rating of walls separating dwelling units.

28
29 15. Delete specific design provisions for dwellings in flood hazard areas because
30 designs are required to comply with the ASCE 24 standard.

31 16. Require exposed construction materials to be protected from weathering when
32 residential construction is staged over periods longer than 6 months and when permits are
33 subsequently renewed, for demonstration that materials not protected from weathering have
34 maintained adequate strength.

35
36 17. For dwellings, specify that roof systems must meet the more restrictive
37 requirements of the code or the Virgin Island's Construction Information for A Stronger Home
38 and specific additional listed conditions.

39
40 18. For dwellings, adopt requirements for roof mounted solar panels to be resistant to
41 hail impact (provides resistance to impact by windborne debris) and to require gutters to resist
42 wind loads in accordance with a nationally recognized standard.

43 The 2018 edition of the International Energy Conservation Code (IECC) is adopted. In
44 coordination with the Federal Emergency Management Agency, DPNR reviewed the IECC and

1 developed proposed changes to certain sections to make the codes applicable to the Virgin
2 Islands. Where applicable, the changes to those codes are set forth using underline and strike
3 through format to clearly inform users of the changes. The changes accomplish the following:

- 4 1. Modify the commercial provisions to [SPECIFIC CHANGE PENDING DPNR]
5
- 6 2. Delete (reserve) a provision in the commercial part of the code related to energy
7 efficient package options.
8
- 9 3. Delete (reserve) a chapter in the commercial part of the code related to existing
10 buildings.
11
- 12 4. Delete (reserve) a provision in the residential part of the code related to roof slope.
13
- 14 5. Delete (reserve) a chapter in the residential part of the code related to existing
15 buildings.

16 **SECTION 3** of this bill amends title 29, chapter 5, subchapter I, section 293 by stating
17 that terms not defined in this section are as defined in the specific adopted buildings codes.
18 Definitions that either are not used or are defined in those codes are deleted and new definitions
19 are added to:

- 20 1. Specify the DPNR Commissioner is the building official (the term used in the
21 adopted International Codes).
22
- 23 2. Define “rural area” and “urban area” for application of the provision in section 301,
24 subsection (d), that exempts certain owner occupied dwellings in rural areas from the additional
25 requirements in section 301.
26
- 27 3. Define “staged construction,” used when residential construction occurs or is
28 suspended longer than 6 months.

29 **SECTION 4** of this bill amends title 29, chapter 5, subchapter II, section 294 by deleting
30 requirements related to solar energy and hydronic heating/cooling that conflict with the
31 International Codes and by requiring plans to identify the specific code and edition of the code
32 on which plans are based and to include information pertinent to the structural design for wind,
33 earthquake, and flood loads.

34 **SECTION 5** of this bill amends title 29, chapter 5, subchapter II, section 296 by
35 authorizing the Commissioner to establish and maintain fees and by removing reference to fee
36 schedules that were in codes that are no longer maintained. A reference to section 311 is deleted
37 because that section is repealed. The Commissioner is conducting an analysis of fees that may
38 result in future changes to fees specified in this chapter.

39 **SECTION 6** of this bill amends title 29, chapter 5, subchapter V, section 301 by
40 modifying the section title to clarify the section applies to residential design and to state the
41 building code applies, in addition to requirements set forth in the section. A new subsection is
42 added to specify requirements of building codes that apply to jalousie style windows and

1 openings, which are common in the Virgin Islands. A provision that exempts certain owner
2 occupied dwellings in rural areas from the additional requirements in this section is clarified,
3 with reference to the new definition for “rural area.”

4 **SECTION 7** of this bill amends title 29, chapter 5, subchapter VII, section 303 by
5 deleting a provision for foundations that conflicts with the adopted building codes and by
6 adding a clarification for wood foundations.

7 **SECTION 8** of this bill amends title 29, chapter 5, subchapter VIII, section 308 by more
8 clearly describing when its provisions do not apply. Where cisterns are used to supply fire
9 sprinklers, the cisterns must meet the requirements of a nationally recognized consensus
10 standard. The water quantity and disinfection of cisterns and wells used for water supply are
11 required to meet specific sections of a nationally recognized plumbing code. The requirement
12 for gutters and downspouts for cisterns to resist wind loads is added, based on evidence of
13 damage experienced during 2017 hurricanes.

14 **SECTION 9** of this bill amends title 29, chapter 5, subchapter VIII, section 309 by
15 deleting an unused requirement and by adding a requirement for fire hydrants and water lines
16 serving public housing projects to meet requirements in the fire code and a nationally
17 recognized consensus standard.

18 **SECTION 10** of this bill amends title 29, chapter 5, subchapter IX, section 310 by
19 modifying the introductory clause to match phrasing regarding the date after which the
20 Territory began regulating existing buildings. Also deleted is a reference to Hurricane Marilyn,
21 which occurred in 1995. Modified reference to new location of adopted codes.

22 **SECTION 11** of this bill reserves title 29, chapter 5, subchapter X and repeals the
23 provisions of section 311, which are recaptured in section 292a which is adopted in Section 4
24 of this bill, and in the building codes adopted therein.

25 **BR23-0055/October17, 2023/YLT**

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