# HONOLULU CITY COUNCIL

*KE KANIHELA O KE KALANA O HONOLULU*

CITY AND COUNTY OF HONOLULU

ORDINANCE _____

BILL **65 (2023), CD2**

## A BILL FOR AN ORDINANCE

RELATING TO THE ADOPTION OF THE STATE BUILDING CODE.

BE IT ORDAINED by the People of the City and County of Honolulu:

SECTION 1. Purpose. The purpose of this ordinance is to adopt the Hawaii State Building Code, including Appendices U, W, and X; the State Residential Code; the State Existing Building Code, subject to local amendments herein, and updating Article 13 ("Hawaii Residential Safe Room") and Article 14 ("State- and City-Owned High Occupancy Buildings—Design Criteria for Enhanced Hurricane Protection Areas").

SECTION 2. Chapter 16, Article 1, Revised Ordinances of Honolulu 2021 ("Adoption of the Hawaii State Building Code and Hawaii State Residential Code"), is repealed.

SECTION 3. Chapter 16, Revised Ordinances of Honolulu 2021 ("ROH") ("Building Code"), is amended by adding a new Article 1 to read as follows:

"**ARTICLE 1: ADOPTION OF THE HAWAII STATE BUILDING CODE AND HAWAII STATE RESIDENTIAL CODE**

**§ 16-1.1. Adoption of the Hawaii State Building Code.**

The Hawaii State Building code, as adopted by the State of Hawaii on April 20, 2021, which adopts with modifications, the International Building Code, 2018 Edition (First Printing), published by the International Code Council, Inc., 500 New Jersey Avenue, NW, 6th Floor, Washington, DC 20001, is adopted by reference and made part hereof, subject to the following amendments:

(1) Amending Section 101.1. Section 101.1 is amended to read:

**101.1 Title.** These regulations shall be part of the Building Code of the City and County of Honolulu, hereinafter referred to as "this code."

(2) Amending Section 101.4. Section 101.4 is amended to read:

**101.4 Referenced codes.** The codes referenced in Sections 101.4.1 through 101.4.9 shall be considered part of the requirements of this code to the prescribed extent and scope of each such reference. Sections 101.4.1 through 101.4.9 are amended and a new Section 101.4.9 is added to read:

**101.4.1 Gas.** Whenever the term International Fuel Gas Code is used in this code, it shall mean the provisions of ROH Chapter 19, Plumbing Code. The provisions of ROH Chapter 19 apply and are incorporated into this code.

**101.4.2 Mechanical.** Provisions in the International Mechanical Code are not adopted by this code but may be considered for guidance.

**101.4.3 Plumbing.** Whenever the International Plumbing Code is referenced, the provisions of ROH Chapter 19, Plumbing Code, shall apply.

**101.4.4 Fire prevention.** Whenever the provisions of the International Fire Code are referenced, the provisions of ROH Chapter 20, Fire Code of the City and County of Honolulu, shall apply to matters affecting or relating to structures, processes and premises from the hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices; from conditions hazardous to life, property or public welfare in the occupancy of structures or premises; and from the construction, extension, repair, alteration or removal or fire suppression and alarm systems or fire hazards in the structure or on the premises from occupancy or operation.

**101.4.5 Energy.** Whenever the term International Energy Conservation Code is used, it shall mean the provisions of ROH Chapter 16B, Building Energy Conservation Code.

**101.4.6 Existing buildings.** Whenever the term International Existing Building Code is used in this code, the provisions of ROH Chapter 16, Article 9, shall apply to matters governing the *repair, alteration*, change of occupancy, *addition* to and relocation of existing buildings.

**101.4.7 Electrical Codes.** Whenever the term International Electrical Code is used in this code, the provisions of ROH Chapter 17, Electrical Code, shall apply.

**101.4.8 Other Codes.** Other referenced codes not listed in Section 101.4 are considered referenced guidelines and not mandatory.

**101.4.9 Fixed transit and passenger rail systems.** The provisions of the Standard for Fixed Guideway Transit and Passenger Rail Systems, NFPA 130,

shall apply to fixed guideway transit and passenger rail stations to the prescribed extent of this standard.

**101.4.10 Housing Code.** Whenever the term Housing Code is used in this code, the provisions of ROH Chapter 16A, Housing Code, shall apply.

(3) Amending Section 102.4.2. Section 102.4.2 is amended by deleting the word "International" throughout the section.

(4) Amending Section 102.6. Section 102.6 is amended to read:

**102.6 Existing structures.** The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as otherwise specifically provided in this code, the International Existing Building Code, and the Fire Code, provided such continued use does not constitute a hazard to the general safety and welfare of the occupants and to the public.

(5) Amending Section 103. Section 103 is amended to read:

**SECTION 103**
**ORGANIZATION AND ENFORCEMENT**

**103.2 Building official appointment authority.** In accordance with the prescribed procedures and with the approval of the appointing authority, the *building official* shall have the authority to appoint technical officers, inspectors, plan examiners and other personnel necessary to support this code enforcement agency. The *building official* may designate such inspectors or employees as may be necessary to carry out the functions of this code enforcement agency. Such employees shall have powers as delegated by the building official.

**103.3 Deputies.** The *building official* may deputize volunteers to temporarily carry out functions of the code enforcement agency in the event of a major natural disaster.

(6) Amending Section 104. Section 104 is amended by adding Section 104.11 and Section 104.11.3 to read:

**104.11 Alternative materials, design and methods of construction and equipment.** The provisions of this code are not intended to prevent the

installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design, or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code and that the material, method, or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability, and safety. Where an application for approval of an alternative material, design, or method of construction is submitted to the building official for approval, but is not approved, the building official shall respond in writing to the applicant, stating the reasons why the submitted alternative was not approved.

**104.11.3 Technical assistance.** To determine the acceptability of technologies, processes, products, facilities, materials and uses attending the design, operation or use of a building or premises subject to inspection by the building code official, the building code official is authorized to require the owner or owner's authorized agent to provide, without charge to the jurisdiction, a technical opinion and report. The opinion and report shall be prepared by a qualified engineer, specialist, laboratory, or fire safety specialty organization acceptable to the building code official and shall analyze the fire safety properties of the design, operation or use of the building or premises and the facilities and appurtenances situated thereon, to recommend necessary changes. The building code official is authorized to require design submittals to be prepared by, and bear the stamp of, a registered design professional.

(7) Section 105 and all of its subsections are deleted in their entirety and replaced with the following:

**SECTION 105**
**PERMITS**

The provisions of ROH Chapter 18 apply.

(8) Amending Section 107.1. Section 107.1 is amended to read:

**107.1 General.** See ROH Chapter 18.

**107.1.1 Conflicts.** In the event of a conflict between Section 107 of this Code and ROH Chapter 18, both codes will be given effect to maximum extent possible, such that one code will not by implication nullify any requirements

arising under the other code. If a conflict is irreconcilable and cannot be resolved without nullifying the provisions of one code, the conflict will be resolved in favor of Chapter 18.

(9) Amending Section 107. Sections 107.2, 107.2.1, 107.2.2, 107.2.3, 107.2.6, 107.2.6.1, 107.2.6.2, 107.2.7, 107.2.9, 107.2.9.1, and 107.2.10 are amended to read:

**107.2 Construction documents.** Construction documents shall be in accordance with Sections 107.2.1 through 107.2.8 of this code.

**107.2.1 Information on construction documents.** Construction documents shall be dimensioned and drawn upon suitable material. Electronic media documents are permitted when approved by the building official. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it shall conform to the provisions of this code and relevant laws, ordinances, rules and regulation, as determined by the building official.

For construction of new buildings, the construction documents shall include but not limited to, the building occupancy group classification, the building height and area, the classification of buildings as to type of construction and the fire and smoke protection features.

**107.2.2 Fire protection system shop drawings.** When automatic sprinkler systems are installed, construction drawings shall contain all information as required by the referenced installation standards in International Building Code Chapter 9.

For new installations, the construction drawings shall include but not limited to, the spacing, location, and position of all fire sprinklers heads, the sprinkler system monitoring and alarm system information, the system riser and fire department connection details with their location.

For existing construction, the construction drawings shall include but not limited to, the locations of the existing and final fire sprinkler heads affected by the proposed work.

Working drawings shall be required for new installations. The drawings shall include but are not limited to, existing systems that increase the coverage areas,

change the hazard classification, provide in-rack sprinkler systems, and identify any storage in excess of 12 feet in height. Drawings for the fire protection system(s) shall be submitted to indicate conformance with this code and the construction documents and shall be submitted by the fire protection special inspector in accordance to International Building Code Section 919.

**107.2.3 Means of egress.** The construction documents shall show in sufficient detail the location, construction, size and character of all portions of the means of egress in compliance with the provisions of this code. In other than occupancies in Groups R-2, R-3, and I-1, the construction documents shall designate the number of occupants to be accommodated on every floor, and in all rooms and spaces.

**107.2.6 Site plan.** In addition to the plot plan required in ROH Chapter 18, the construction documents submitted with the application for permit shall be accompanied by a site plan showing to scale; the size and location of new construction and any existing structures on the site, distances from *lot lines*, the established street grades and the existing and proposed finished grades and as applicable, location of fire hydrants, fire department apparatus roads, flood hazard areas, floodways, design flood elevations; and it shall be drawn in accordance with an accurate boundary line survey. In the case of demolition, the site plan shall show construction to be demolished and location and size of existing structures and construction that are to remain on the site or plot.

**107.2.6.1 Special flood hazard areas.** Where base flood elevations are not specified, they shall be established in accordance with ROH Chapter 21A.

**107.2.6.2 Topographic survey.** For new or additions to structures and buildings, on properties where the elevation difference on that site is 5 feet (1,524 mm) or more, there shall be provided a topographic survey of the existing site.

**107.2.7 Erosion and sediment control measures.** An erosion sediment Control Plan (ESCP) shall be prepared in compliance with ROH Chapter 18A and the Rules Relating to Water Quality, Chapter 3 of the Administrative Rules, Title 20, Department of Planning and Permitting. The ESCP shall provide the best management practices (BMP) and good housekeeping practices during construction to minimize the discharge of runoff containing sediment and pollutants into the receiving waters.

**107.2.9 Installation and operation of stationary storage battery systems.** Where an energy storage system is designed to provide electrical power to a building or facility the following information shall be provided:

(a) Location and layout diagram of the room in which the stationary storage battery system is to be installed.

(b) Details on hourly fire-resistance-rated assemblies provided.

(c) Quantities and types of storage batteries and battery systems.

(d) Manufacturer's specifications, ratings and listings of storage batteries and battery systems.

(e) Details on energy management systems.

(f) Location and content of signage.

(g) Details on fire-extinguishing, smoke detection and ventilation systems.

(h) Rack storage arrangement, including seismic support criteria.

**107.2.9.1 Hazard mitigation analysis**. A failure modes and effects analysis (FMEA) or other approved hazard mitigation analysis shall be provided under any of the following conditions:

(a) Battery technologies not specifically identified in Table 2704.2 of this code are provided.

(b) More than one stationary storage battery technology is provided in a room or indoor area where there is a potential for adverse interaction between technologies.

(c) Where allowed as a basis for increasing maximum allowable quantities in accordance with Section 2704.2.9 of this code.

**107.2.10 Mechanical ventilation.** Where mechanical ventilation is used for dwelling units, there must be submitted a letter of certification that the proposed design was reviewed by a professional mechanical engineer licensed in the State of Hawaii, to be in conformance with ANSI/ASHRAE 62.1 and 62.2, this

individual will not be the design professional engineer in responsible charge of the plans and will be the special inspector required by Section 1705.22.

(10) Amending Section 107.3.1. Section 107.3.1 is amended to read:

**107.3.1 Approval of construction documents.** ROH Chapter 18 applies in lieu of this section.

(11) Amending Section 107.3.4. Section 107.3.4 is amended to read:

**107.3.4 Design professional in responsible charge.** All plans and specifications relating to work that affects the public safety or health and for which a building permit is required shall be prepared by or under the supervision of a duly licensed professional engineer or architect, construction shall be under the observation of a duly licensed professional engineer or architect, as required by HRS Chapter 464.

(12) Amending Section 107.3.4.1. Section 107.3.4.1 is amended to read:

**107.3.4.1 Deferred submittals.** Deferral of any submittal items shall have the approval of the building official before the permit is approved. The design professional in responsible charge shall list the deferred submittals on the construction documents for review by the *building official*.

Documents for deferred submittal items shall be submitted to the registered design professional in responsible charge who shall review them and forward them to the *building official* with a notation indicating that the deferred submittal documents have been reviewed and found to be in general conformance to the design of the building.

(13) Amending Section 107.4. Section 107.4 is amended to read:

Work shall be done in accordance with the approved construction documents, and any changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents. The *building official* may approve the amended set of construction documents if they comply with the provisions of this code and all other applicable laws. If the *building official* is unable to approve the amended set of construction documents, the work not shown in the approved

construction documents shall be removed and shall not be at the expense of the City.

(14) Amending Section 108.1. Section 108.1 is amended by adding an Exemption to read:

**Exemption:** See ROH Section 18.3.4.

(15) Amending Section 109. Section 109 is amended to read:

**SECTION 109**
**FEES**

ROH Chapter 18 will apply.

(16) Amending Section 110.3. Sections 110.3, 110.3.3, 110.3.5, 110.3.9, 110.3.10, and 110.3.11 are amended to read:

**110.3 Required inspections.** The *building official*, upon notification, shall make the inspections set forth in Sections 110.3.3, 110.3.5, 110.3.9, 110.3.10, and 110.3.11 of this code.

**110.3.3 Lowest floor elevation.** In flood hazard areas, upon placement of the lowest floor, including the basement, and prior to further vertical construction, an elevation certification required in Section 1612.4 of the IBC shall be submitted to the building official.

**110.3.5 Lath and/or gypsum board inspection.** To be made after all lathing and gypsum board, interior and exterior, in construction required to be fire-resistive, is in place but before any plastering is applied or before gypsum board joints and fasteners are taped and finished.

**Exception:** Lath and gypsum board installed in Group U Occupancies.

**110.3.9 Other inspections.** In addition to the inspections specified in Sections 110.3.3 and 110.3.5 of this code, the *building official* is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of this code and other laws that are enforced by this code.

**110.3.10 Special inspections.** The submitted plans shall have all special

inspections listed as a condition for permit issuance. Where special inspection is required by this code, a complete list of the special inspections shall be provided on the submitted plans as a condition for permit issuance. For special inspections, see International Building Code Sections 110, 919, 1704, 1705, and 1707.

**110.3.11 Final inspection.** To be made after all construction is completed and prior to issuance of a final certificate of occupancy.

(17) Amending Section 111.1. Section 111.1 is amended by adding a second exception to read:

2. The provisions of Section 111.1 are not applicable to the following:

(a) For R-3 Occupancies, see Residential Code Section R110.1.

(b) Group U Occupancies.

(c) For work exempted from permits.

(18) Amending Section 113. Section 113 is amended to read:

**SECTION 113**
**BOARD OF APPEALS**

**113.1 Creation of Board of Appeals.** There shall be and is hereby created a board of appeals consisting of nine members who shall be qualified by experience and training to pass upon matters pertaining to building construction and fire safety and who shall be appointed by the mayor with the approval of the council. Four members shall be currently licensed as engineers or architects with the State of Hawaii board of registration of professional engineers, architects, land surveyors, and landscape architects. One member shall be qualified by experience and training to pass on matters pertaining to electrical work. One member shall be qualified by experience and training to pass on matters pertaining to plumbing work. Two members shall be qualified by experience and training to pass on matters pertaining to fire safety. One member shall be a general contractor licensed under HRS Chapter 444. The members of the board shall serve for terms of five years and until their successors have been appointed and qualified. Any vacancy occurring other than by expiration of a term of office shall be filled for the remainder of such unexpired term in the same

manner as for an original appointment. The board shall select a chair and vice-chair annually. Board members serving on the effective date of this code shall continue to serve for the remainder of their appointed terms.

**113.2 Board action.** All board action requires an affirmative vote of four or more board members.

**113.3 Power and duties.** The board powers and duties include:

**113.3.1 Conduct a Hearing based on the decision of a building official.** Hear and determine appeals from the decisions of the *building official* in the administration of the *Building Code, Electrical Code, Plumbing Code, Housing Code, Energy Code, Building Energy Efficiency Standards*, and ROH Chapter 18, including, but not limited to, matters involving any approval or denial, the use of new or alternate materials, types of construction, equipment, devices or appliances, administrative enforcement, and the issuance, suspension or revocation of permits issued under ROH Chapter 18.

In the case of any denial of the use of new or alternative materials, types of construction, equipment, devices or appliances, an appeal may be sustained if the record shows that: (1) the new or alternate materials, types of construction, equipment, devices or appliances meet the required standards established by the codes being appealed from; (2) permitting the use thereof shall not jeopardize life, limb or property; and (3) the use shall not be contrary to the intent and purpose of the code being appealed from. The appellant shall pay all expenses necessary for tests that may be ordered by the board.

In all cases not involving the use of new or alternate materials, an appeal shall only be sustained if the record shows that the decision of the building official is based on an erroneous finding of material fact, arbitrary or capricious decision making, or a manifest abuse of discretion. The board may reverse, affirm or modify, in whole or in part, the decision appealed from.

**113.3.2 Conduct a hearing based on the decision of the fire code official.** The board of appeals shall hear and determine appeals from the decisions of the fire official in the administration of the *Fire Code*, including the suspension or revocation of permits issued pursuant to the *Fire Code*, and any denial of the use of new or alternate materials, types of construction, equipment, devices or appliances. The standard of review for the use of new or alternate materials,

types of construction, equipment, devices or appliance shall be the same as for Section 113.3.1.

**113.3.3 Conduct a hearing based on a variance to the code.** The board of appeals shall hear and determine petitions for varying the application of the *Building Code, Electrical Code, Plumbing Code, Fire Code, or Building Energy Efficiency Standards*. A variance may be granted if the board finds: (1) that the strict application, operation or enforcement of the code provision or provisions being appealed from would result in practical difficulty or unnecessary hardship to the applicant; (2) that safety to life, limb, and property shall not be jeopardized; and (3) that the granting of a variance would not be injurious to the adjoining lots and the building thereon, would not create additional fire hazards and would not be contrary to the purposes of the code and public interest. In making its determination, the board shall take into account the character, use, and type of occupancy and construction of adjoining buildings, buildings on adjoining lots and the building involved.

**113.3.4 Conduct a hearing based on administrative enforcement of ROH Chapter 13, Article 4 (Litter Control).** The board of appeals shall hear and determine appeals from the decisions of the *building official* in the administration enforcement of ROH Chapter 13, Article 4. An appeal shall only be sustained if the record shows that the decision of the building official is based on an erroneous finding of material fact, arbitrary or capricious decision making, or a manifest abuse of discretion. The board may reverse, affirm or modify, in whole or in part, the decision appealed from.

**113.3.5 Conduct a hearing based concerning summary removal of unlawful signs pursuant to ROH Chapter 13, Article 14 ("Unlawful Signs Within Street Rights-of-Way and Public Malls").** The board of appeals shall hear and determine appeals concerning the summary removal of unlawful signs pursuant to ROH Chapter 13, Article 14. Such appeals shall be limited to a determination of whether a sign was properly removed pursuant to the provisions of that article. An appeal shall only be sustained if the record shows that the decision of the building official is based on an erroneous finding of material fact, arbitrary or capricious decision making, or a manifest abuse of discretion. The board may reverse, affirm or modify, in whole or in part, the decision appealed from.

**113.3.6 Conduct a Hearing based on the building official decision to issue, suspend or revoke.** Appeals from the decisions of the building official to issue, suspend, or revoke permits shall be in writing and filed with the board within ten

(10) working days of the permittee's receipt of the notice of issuance, suspension, or revocation. In all other cases, appeals from the decisions of the *building official* and fire official shall be in writing and filed within thirty (30) calendar days of the decision appealed from.

**113.4 Compensation.** Each member of the board shall be compensated at the rate of $20 per day for each day's actual attendance at a meeting, but such compensation shall not exceed, in the aggregate, $60 in any one month.

**113.5 Procedure.** The proceedings of the board shall be subject to the provisions of HRS Chapter 91. The board shall adopt reasonable rules and regulations for conducting its meetings, hearings, and investigations in conformity therewith and may impose reasonable fees to cover the costs of such proceedings.

**113.6 Fees.** The filing fee for a petition for appeal from a decision of the Authority Having Jurisdiction in the administration of the *Building Code, Electrical Code, Fire Code, Plumbing Code, Housing Code*, ROH Chapter 13, Article 4, ROH Chapter 18 and the *Building Energy Efficiency Standard* or an application for varying the application of the *Building Code, Electrical Code, Plumbing Code, Fire Code, or Building Energy Efficiency Standards*, shall be $600.00. No petition for appeal shall be filed without payment of said fee.

(19) Amending Section 114. Section 114 is amended to read:

**SECTION 114**
**VIOLATIONS AND PENALTIES**

For violation and penalty provisions, see ROH Chapter 16, Article 10.

(20) Amending Section 115. Section 115 is amended to read:

**SECTION 115**
**STOP WORK ORDER**

ROH Chapter 18 will govern the issuance of stop work orders.

(21) Amending Sections 116 through 116.4. Sections 116 through 116.4 are amended to read:

# A BILL FOR AN ORDINANCE

## SECTION 116
## UNSAFE STRUCTURES AND EQUIPMENT

**116.1 General.** All buildings or structures that are structurally unsafe or not provided with adequate egress; or that constitute a fire hazard; or are otherwise dangerous to human life; or that in relation to existing use constitute a hazard to safety, health, or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, or abandonment, as specified in this code or any other effective ordinance are, for the purpose of this section, unsafe buildings. An unsafe building shall also include a dangerous building as defined by International Existing Building Code Chapter 2. All such unsafe buildings or structures are hereby declared to be public nuisances and shall be abated by repair, rehabilitation, demolition, removal, or other methods ordered by the building official.

**116.2 Notice to owner.** If the building official determines that a structure or use or occupancy of a structure is unsafe, the building official may issue an order to any person who may be affected by the unsafe conditions, including, without limitation, the owner of the structure and its occupants. The order may restrict or prohibit the use of the unsafe structure and restrict or prohibit access to the unsafe structure. The *building official* may also order the owner of a structure or its occupants to take any actions that the building official deems reasonably necessary to reduce or eliminate risks to persons or property arising from the unsafe or unsanitary conditions identified by the *building official*. Such actions may include, without limitation, vacating the structure, securing the structure from entry, the immediate repair of the structure, and the demolition and removal of the structure.

In addition to actions authorized above, the *building official* may issue orders to show cause, requiring the persons concerned by the order to appear before the building official and show why the building official should not issue an order relating to an unsafe structure.

The *building official* may also enter into consent orders that are agreed to by the *building official* and persons concerned by an unsafe structure. A consent order entered into by the *building official* may require the responsible persons to take specific actions to address unsafe or unsanitary conditions associated with an unsafe structure and pay agreed upon penalties upon such terms as the *building official* deems appropriate.

Service of any notice or order issued under this section must be made by hand delivery or certified mail, with return receipt requested, provided that if the *building official* is unable to serve the notice or order by hand delivery or certified mail, the *building official* may then serve the notice or order by posting a copy of the notice or order in a conspicuous location on the property and publishing a copy of the same in a newspaper of general circulation within the City and County of Honolulu for not less than once each week in four successive weeks. Service by publication shall be deemed complete upon the last publication required by this section if a copy of the notice or order was also posted on the property as required by this section.

**116.3 Posting of signs.** The *building official* may post signage on a property with an unsafe structure stating: "DO NOT ENTER. UNSAFE TO OCCUPY. DEPARTMENT OF PLANNING AND PERMITTING, CITY AND COUNTY OF HONOLULU." Such notice shall not be removed without written permission of the *building official*, and no person shall enter the building except for the purpose of making the required repairs or of demolishing the building.

**116.4 Action by the building official.** If the responsible persons do not comply with an order issued under Section 116.2 or if immediate action is reasonably necessary to prevent significant harm to persons or property, the *building official* may secure an unsafe structure from entry, repair the structure, or demolish the unsafe structure, in whole or in part, to reduce or eliminate the risk of harm. When the *building official* takes action pursuant to this section, the persons responsible for the unsafe building will be responsible for all costs incurred by the City and shall reimburse the City all incurred costs within 30 days of receiving a request for payment from the *building official*. If the responsible persons do not reimburse the City within 30 days of receiving a request for payment, the building official may collect the costs by any lawful means, including attaching the debt to any real property owned by the responsible persons and foreclosing on the lien. The *building official* shall serve notices of actions taken pursuant to this section and requests for payment by hand delivery or certified mail, with return receipt requested. However, if the *building official* is unable to serve a notice or a request for payment by hand delivery, the *building official* may then serve a notice or request for payment by posting a copy of the notice or request for payment in a conspicuous location on the property and publishing a copy of the same in a newspaper of general circulation within the City and County of Honolulu for not less than once each week in four successive weeks. Service by publication shall be deemed complete upon the last publication required by this

section if a copy of the notice or order was also posted on the property as required by this section.

(22) Amending Section 202. Section 202 is amended as follows:

(a) By adding the following definition, immediately before the definition of "ACCREDITATION BODY":

**ACCESSORY DWELLING UNIT (ADU).** See ROH Chapter 21, Article 10.

(b) By adding the following definition, immediately before the definition of "ATRIUM":

**ASSISTED LIVING FACILITIES.** An assisted living facility as defined in section HRS Section 321-15.1 and Hawaii Administrative Rules ("HAR") Section 11-90-2 that is licensed by the State of Hawaii.

(c) By amending the definition of "building" to read as follows:

**BUILDING.** Any structure that is used or intended to be used for any use or occupancy. The term includes structures mounted on wheels such as a trailers, wagons and vehicles that are used for business, storage or as living quarters if they do not regularly travel off-site and have current vehicle registrations and safety checks. The term does not include push wagons that do not exceed 25 square feet in area, medical trailers, and vehicles that are undergoing repair and not used for any purpose.

(d) By adding the following definition immediately before the definition of "BUILDING HEIGHT":

**BUILDING ENERGY EFFICIENCY STANDARDS.** Energy standards as specified in ROH Chapter 16B.

(e) By amending the following definition to read:

**BUILDING OFFICIAL.** The Director of Planning and Permitting of the city or the director's authorized representative.

(f) By adding the following definition of "CARPORT" immediately before the definition of "CAST STONE":

**CARPORT.** A private garage that is either: (1) 100 percent open on one side and with 50 percent net openings on another side or that is provided with an equivalent of such openings on two or more sides or (2) 100 percent open on one side and 25 percent open on another side with the latter opening so located to provide adequate cross ventilation may be considered a carport when approved by the building official.

(g) By adding the following definition, immediately before the definition of "CERTIFICATE OF COMPLIANCE":

**CERTIFICATE OF COMPLETION.** A certificate stating that work was done in compliance with *approved construction documents.*

(h) By adding the following definition, immediately before the definition of "CLEAN AGENT":

**CITY.** Refers to the City and County of Honolulu.

(i) By adding the following definition, immediately before the definition of "ELEVATOR GROUP":

**ELECTRICAL CODE.** Electrical standards as specified in ROH Chapter 17.

(j) By adding the following definition immediately before the definition of "FENESTRATION" to read:

**FENCE.** A structure of permanent material such as wrought iron, wire, wood, vinyl, plastic, etc., with post foundations, erected for purposes of enclosure, division of property, or decoration.

(k) By adding the following definitions, immediately before the definition of "FIRE COMMAND CENTER" to read:

**FIRE CODE.** Wherever specific reference is made to *Fire Code*, the Fire Code shall be ROH Chapter 20.

**FIRE CODE OFFICIAL.** The fire chief or other designated authority charged with the administration and enforcement of the *Fire Code*, or a duly authorized representative.

(l) By amending the following definition to read:

**FIRE SEPARATION DISTANCE.** The distance measured from the building face to the closest *lot line*, to the centerline of a street, alley or public way, or to an imaginary line between two buildings on the property. For the purposes of this section, *lot lines* established within a joint, cluster, or similar development under the Land Use Ordinance, boundary lines established for condominium ownership purposes only and development under the jurisdiction of the State of Hawaii, shall not be considered as boundary lines. The distance shall be measured at right angles from the face of the wall.

(m) By adding the following definition, immediately before the definition of "HOUSING UNIT," to read:

**HOUSING CODE.** Housing standards as specified in ROH Chapter 16A.

(n) By adding the following definition, immediately before the definition of "LEVEL OF EXIT DISCHARGE," to read:

**LAND USE ORDINANCE.** Land use standards as specified in ROH Chapter 21.

(o) By adding the following definition, immediately before the definition of "[BS] POLYPROPYLENE SIDING," to read:

**PLUMBING CODE**. Plumbing standards as specified in ROH Chapter 19.

(p) By adding the following definition, immediately after the definition of "PRIMARY STRUCTURAL FLAME," to read:

**PRIVATE NUISANCE.** A nuisance in fact that does not affect the health, safety, or welfare of the general public.

(q) By adding the following definition, immediately after "WALL, NONLOAD-BEARING," to read:

**WALL, SITE.** A structure of stone, brick, masonry, concrete, or other similar permanent material, raised to some height and erected for purposes of enclosure, division of property or decoration.

(r) By amending the following definition to read:

**WINDBORNE DEBRIS REGION.** Areas in Hawaii where the basic design wind speed is 140 mph (62.59 m/s) or greater. For Risk Category II buildings and structures the windborne debris region will be based on Figure 26.5-2C. For Risk Category IV buildings, the windborne debris region will be based on Figure 26.5-2D of ASCE7.

(23) Amending Section 304.1. Section 304.1 is amended by deleting "Ambulatory care facilities" from Business Group B occupancy.

(24) Amending Section 310.4. Section 310.4 is amended to read:

**310.4 Residential Group R-3.** Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4, R-5 or I, including:

Adult residential care homes
Assisted living facilities
Buildings that do not contain more than two dwelling units
Boarding houses (non-transient) with 16 or fewer occupants
Congregate living facilities (non-transient) with 16 or fewer occupants
Lodging houses (transient) with five or fewer guest rooms and 10 or fewer occupants
Residential Care facilities that provide accommodations for five or fewer persons receiving care

(25) Amending Section 310.4. Section 310.4 is amended by adding Section 310.4.3 to read:

**310.4.3 Assisted living facilities within a dwelling.** Assisted living facilities for not more than six occupants, excluding staff, receiving care that are within a single-family dwelling are classified as an Residential Group R-4 occupancy. Residents shall meet the ability to evacuate requirements and other limitations as required in Group I-1.

(26) Amending Section 310.5. Section 310.5 is amended by adding the following group category before "Social rehabilitation facilities" to read:

"Small intermediate care facility" shall be as defined by the Chapter 11-99, Hawaii Administrative Rules (Department of Health).

(27) Amending Section 310.5. Section 310.5 is amended by amending the second paragraph of this section to read:

Group R-4 occupancies are permitted to comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3, except as otherwise provided for in this code.

(28) Amending Section 310. Section 310 is amended by adding Section 310.6 to read:

**310.6 Residential Group R-5 transient dwellings.** Residential Group R occupancies where the occupants are transient in nature and not classified as Group R-1, R-2, R-3, R-4, or I, including:

*Congregate living facilities* (transient) with 16 or fewer occupants
*Boarding houses* (transient)

Group R-5 occupancies shall be provided with an *automatic sprinkler system* installed in accordance with Section 903.3.1.3 and shall be permitted to be constructed in accordance with the *International Residential Code*.

(29) Deleting Section 403.3.3. Section 403.3.3 is deleted in its entirety.

(30) Amending Section 403.4.2. Section 403.4.2 is amended to read:

**403.4.2 Fire alarm system.** A fire alarm system shall be provided in accordance with the Fire Code.

(31) Amending Section 403.4.5. Section 403.5 is amended to read:

**403.4.5 Emergency responder radio coverage.** Emergency responder radio coverage shall be provided in accordance with the *Fire Code*.

(32) Amending Section 403.4.6. Section 403.4.6 is amended to read:

**403.4.6 Fire command.** Fire command stations shall comply with the *Fire Code*.

(33) Amending Section 403.5.4. Section 403.5.4 is amended by adding the following exception to read:

**Exception:** When the required exit ways are exterior exit stairways or ramps, the exterior stairways and ramps shall have natural ventilation in accordance with International Building Code Section 909.20.3.

(34) Amending Section 404.2. Section 404.2 is amended to read:

**404.2 Use.** The floor of the atrium shall not be used for other than low fire hazard uses and only approved materials and decorations in accordance with the *Fire Code* shall be used in the *atrium* space.

**Exception:** The *atrium* floor area is permitted to be used for any *approved* use where the individual space is provided with an *automatic sprinkler system* in accordance with International Building Code Section 903.3.1.1.

(35) Amending Section 406.6.2. Section 406.6.2 is amended to read:

**406.6.2 Ventilation.** A mechanical ventilation system and exhaust system shall be provided in accordance with the Chapter 11-39, Hawaii State Administrative Rules (Department of Health), or any successor rules duly adopted by the Department of Health.

(36) Amending Section 413. Section 413 is amended by amending Section 413.1 and adding Table 413.1 and Sections 413.1.1 through 413.1.14 to read:

**413.1 General.** Fire protection and life-safety features for high-piled areas shall be in accordance with Sections 413.1.1 through 413.1.14, of this code and the *Fire Code*.

## TABLE 413.1
## GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS

a. Commodity classification I-IV, defined in the Fire Code.
b. High Hazards, defined in IBC Section 415.

| COM-MODITY CLASS | SIZE OF HIGH-PILED AREA (SQUARE FEET) | ALL STORAGE AREA | | | | SOLID-PILED STORAGE SHELF STORAGE AND PALLETIZED STORAGE | | |
|---|---|---|---|---|---|---|---|---|
| | | AUTOMATIC FIRE EXTINGUISHING SYSTEM | FIRE DETECTION SYSTEM | SMOKE AND HEAT REMOVAL | DRAFT CURTAINS | MAXIMUM PILE DIMENSION (FEET) | MAXIMUM PERMISSIBLE STORAGE HEIGHT (FEET) | MAXIMUM PILE VOLUME (CUBIC FEET) |
| I – IV[a] | 2,501 – 12,000 Public access | Yes | Not required | Not required | Not required | 100 | 40 | 400,000 |
| | 2,501 – 12,000 Nonpublic access | Yes | Not required | Not required | Not required | 100 | 40 | 400,000 |
| | 2,501 – 12,000 Nonpublic access | Not required | Yes | Yes | Yes | 100 | 30 | 200,000 |
| | Greater than 12,000 | Yes | Not required | Yes | Not required | 100 | 40 | 400,000 |
| High hazard[b] | 501 – 2,500 Public access | Yes | Not required | Not required | Not required | 50 | 30 | 75,000 |
| | 501 – 2,500 Nonpublic access | Yes | Not required | Not required | Not required | 50 | 30 | 75,000 |
| | 501 – 2,500 Nonpublic access | Not required | Yes | Yes | Yes | 50 | 30 | 50,000 |
| | Greater than 2,500 | Yes | Not required | Yes | Not required | 50 | 30 | 75,000 |

**413.1.1 Extent and type of protection.** When required, fire detection systems, smoke and heat removal, draft curtains and automatic sprinkler design density shall extend the lesser of 15 feet (4,572 mm) beyond the high-piled storage area or to a permanent partition. Where portions of high-piled storage areas have different fire protection requirements because of commodity, method of storage or storage height, the fire protection features shall be based on the most restrictive design method.

**413.1.2 Separation of high-piled storage areas.** High-piled storage areas shall be separated from other portions of the building where required by Sections 413.1.2.1 through 413.1.2.2.

**413.1.2.1 Separation from other uses.** Mixed occupancies shall be separated in accordance with International Building Code Sections 508 and 509.

**413.1.2.2 Multiple high-piled storage areas.** Multiple high-piled storage areas shall be in accordance with Section 413.1.2.2.1 or 413.1.2.2.2 of this code.

**413.1.2.2.1 Aggregate area.** The aggregate area of all high-piled storage areas within a building, unless such areas are separated from each other by 1-hour fire barriers constructed in accordance with International Building Code Section 707. Openings in such fire barriers shall be protected by openings having a 1-hour fire protection rating.

**413.1.2.2.2 Multiclass high-piled storage areas.** High-piled storage areas classified as Class I through IV not separated from high-piled storage areas classified as high hazard shall utilize the aggregate of all high-piled storage areas as high hazard. To be considered as separated, 1-hour fire barriers shall be constructed in accordance with International Building Code Section 707. Openings in such fire barriers shall have a 1-hour fire protection rating.

**Exception:** Designation based on engineering analysis.

**413.1.3 Automatic sprinklers.** Automatic sprinkler systems shall comply with the Fire Code.

**Exception:** High-expansion foam extinguishing systems installed in addition to automatic sprinkler systems shall comply with the *Fire Code*.

**413.1.4 Fire detection.** Fire detection shall comply with the *Fire Code*.

**413.1.5 Smoke and heat removal.** Where smoke and heat removal are required by International Building Code Section 910, smoke and heat vents shall be provided.

**413.1.6 Building access.** Fire apparatus access roads shall comply with the Fire Code.

**413.1.7 Access doors.** Fire department access doors shall be provided in accordance with this section. Access doors shall be accessible without the use of a ladder.

**413.1.8 Number of doors required.** A minimum of one access door shall be provided in each 100 linear feet (30,480 mm), or fraction thereof, of the exterior walls that face required fire apparatus access road. The required access doors shall be distributed such that the linear distance between adjacent access doors does not exceed 100 feet (30,480 mm).

**413.1.9 Door size and type.** Access doors shall not be less than 3 feet (914 mm) in width and 6 feet 8 inches (2,032 mm) in height. Access doors shall be of the pivoted or side-hinged swinging type.

**413.1.10 Designation of storage heights.** A visual method of indicating the maximum allowable storage height shall be provided within stock or storage areas.

**413.1.11 Aisles.** Aisles providing access to exits and fire department access doors shall be provided in high-piled storage areas exceeding 500 square feet (46 $m^2$) in accordance with Sections 413.1.11.1.1 to 413.1.11.1.2 of this code. Aisles separating storage piles or racks shall comply with NFPA 13. Aisles shall also comply with International Building Code Chapter 10.

**413.1.11.1 Width.** Aisle width shall be in accordance with Sections 413.1.11.1.1 and 413.1.11.1.2 of this code.

**Exceptions:**

1. Aisles crossing rack structures or storage piles that are used only for employee access, shall be a minimum of 24 inches (610 mm) wide.

2. Aisles separating shelves classified as shelf storage shall be a minimum of 30 inches (762 mm) wide.

**413.1.11.1.1 Sprinklered buildings.** Aisles in sprinklered buildings shall be not less than 44 inches (1,118 mm) wide. Aisles shall be not less than 96 inches (2,438 mm) wide in high-piled storage areas exceeding 2,500 square feet (232 $m^2$) in area that are accessible to the public and designated to contain high-hazard commodities.

**Exception:** Aisles in high-piled storage areas exceeding 2,500 square feet (232 $m^2$) in area, that are accessible to the public and designated to contain high-hazard commodities, are protected by a sprinkler system designed for multiple-row racks of high-hazard commodities shall be a minimum of 44 inches (1,118 mm) wide.

**413.1.11.1.2 Nonsprinklered buildings.** Aisles in nonsprinklered buildings shall be a minimum of 96 inches (2,438 mm) wide.

**413.1.11.2 Clear height.** The required aisle width shall extend from floor to ceiling. Rack structural supports and catwalks are allowed to cross aisles at a minimum height of 6 feet 8 inches (2,032 mm) above the finished floor level, provided that such supports do not interfere with fire department hose stream trajectory.

**413.1.11.3 Dead ends.** Dead-end sides shall be in accordance with International Building Code Chapter 10.

**413.1.12 Portable fire extinguishers.** Portable fire extinguishers shall comply with the Fire Code.

**413.1.13 Housekeeping and maintenance.**

**413.1.13.1 Rack structures.** The structural integrity of racks shall be maintained.

**413.1.13.2 Ignition sources.** Hot ashes, cinders, smoldering coals or greasy or oily materials subject to spontaneous ignition shall not be deposited in a combustible receptacle, within 10 feet (3,048 mm) of other combustible material including combustible walls and partitions or within 2 feet (610 mm) of openings to buildings.

**413.1.13.3 Smoking.** Smoking shall be prohibited in high-piled storage areas. Approved "No Smoking" signs shall be conspicuously posted throughout the high-piled storage areas.

**413.1.13.4 Aisle maintenance.** When restocking is not being conducted, aisles shall be kept clear of storage, waste material and debris. Fire department access doors, aisles and *exit* doors shall not be obstructed. During restocking

operations using manual stocking methods, a minimum unobstructed aisle width of 24 inches (610 mm) shall be maintained in 48-inch (1,219 mm) or smaller aisles, and a minimum unobstructed aisle width of one-half of the required aisle width shall be maintained in aisles greater than 48 inches (1,219 mm). During mechanical stocking operations, a minimum unobstructed aisle width of 44 inches (1,118 mm) shall be maintained in accordance with Section 413.1.11 of this code.

**413.1.13.5 Pile dimension and height limitations.** Pile dimensions and height limitations shall comply with Table 413.1 of this code.

**413.1.13.6 Array.** Where an *automatic sprinkler system* design utilizes protection based on a closed array, array clearances shall be provided and maintained as specified by the standard used.

**413.1.13.7 Flue spaces.** Flue spaces shall be provided in accordance with Table 413.2 of this code. Required flue spaces shall be maintained.

**413.1.14 Storage arrangement.** Storage arrangement shall be in accordance to Sections 34.7.3.1 and 34.7.3.2 of the *Fire Code*.

(37) Amending Section 413.2. Section 413.2 is amended by adding Table 413.2 to read:

**TABLE 413.2**
**REQUIRED FLUE SPACES FOR RACK STORAGE**

| RACK CONFIGURATION | AUTOMATIC SPRINKLER PROTECTION | | SPRINKLER AT THE CEILING WITH OR WITHOUT MINIMUM IN-RACK SPRINKLERS | | | IN-RACK SPRINKLERS AT EVERY TIER | NON-SPRINKLERED |
|---|---|---|---|---|---|---|---|
| | | | ≤ 25 FEET | | > 25 FEET | ANY HEIGHT | ANY HEIGHT |
| | STORAGE HEIGHT | | OPTION 1 | OPTION 2 | | | |
| Single-row rack | Transverse flue space | Size [b] | 3 inches | Not Applicable | 3 inches | Not Required | Not Required |
| | | Vertically aligned | Not Required | Not Applicable | Yes | Not Applicable | Not Required |
| | Longitudinal flue space | | Not Required | Not Applicable | Not Required | Not Required | Not Required |
| Double-row rack | | Size [b] | 6 inches [a] | 3 inches | 3 inches | Not Required | Not Required |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Transverse flue space | Vertically aligned | Not Required | Not Required | Yes | Not Applicable | Not Required |
| | Longitudinal flue space | | Not Required | 6 inches | 6 inches | Not Required | Not Required |
| Multi-row rack | Transverse flue space | Size [b] | 6 inches | Not Applicable | 6 inches | Not Required | Not Required |
| | | Vertically aligned | Not Required | Not Applicable | Yes | Not Applicable | Not Required |
| | Longitudinal flue space | | Not Required | Not Applicable | Not Required | Not Required | Not Required |

Flue spaces shall comply with Section 413.1.13.7 of this code.

(38) Amending Section 420.2. Section 420.2 is amended by adding Exception 4 to read:

4. Accessory Dwelling Unit (ADU) shall be permitted to be separated from the primary dwelling unit with single layer of 5/8-inch Type X gypsum board or the equivalent fire resistive construction on the walls and ceilings of the ADU portion.

(39) Amending Section 423. Section 423 is amended to read:

**SECTION 423**
**COMMUNITY STORM SHELTERS**

**423.1 General.** In addition to other applicable requirements in this code, designated community storm shelters shall be constructed in accordance with ICC-500.

**423.1.1 Scope.** This section applies to the construction of storm shelters constructed as separate detached buildings or constructed within buildings for the purpose of providing safe refuge from storms that produce high winds, such as hurricanes. Such structures shall be designated to be hurricane shelters.

**423.2 Definitions.** The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein:

**COMMUNITY STORM SHELTER.** A building, structure, or portion thereof, receiving FEMA grants to be designated by the grantee to be designed and constructed in accordance with ICC/NSSA 500 Standard on the Design and

Construction of Storm Shelters and designated for use during a severe wind storm event such as a hurricane.

(40) Amending Chapter 4. Chapter 4 is amended by adding Section 429 to read:

**SECTION 429**
**HAWAII RESIDENTIAL SAFE ROOM**

See ROH Chapter 16, Article 13.

(41) Amending Chapter 4. Chapter 4 is amended by adding Section 430 to read:

**SECTION 430**
**STATE- AND COUNTY-OWNED PUBLIC HIGH OCCUPANCY BUILDINGS—DESIGN CRITERIA FOR ENHANCED HURRICANE PROTECTION AREAS**

See ROH Chapter 16, Article 14.

(42) Amending Chapter 4. Chapter 4 is amended by adding Section 431 to read:

**SECTION 431**
**FENCES**

**431.1 General.** Fences shall be constructed in accordance with this code, the *Land Use Ordinance,* and ROH §15-24.6. In areas where fence height is not regulated under the *Land Use Ordinance*, fences over 6 feet (1,829 mm) in height are subject to the approval of the fire department as to access.

**431.2 Barbed or razor wire fences.** Barbed or razor wire must not be used for construction of any fence.

**Exceptions:**

1. Barbed or razor wire may be used in fences enclosing the following premises; provided that barbed or razor wire must be placed along or above the height of 6 feet from the ground, subject to the approval of the fire department;

1.1 Any "public utility" as defined in HRS § 269.1;

1.2 Premises in industrial zoned districts and used for storage or handling of hazardous materials, and premises zoned I-2 or I-3, intensive or waterfront industrial districts that are used for industrial purposes and are not adjacent to premises used for other purposes;

1.3 Zoos for keeping animals and birds for public view or exhibition;

1.4 Jails, prisons, reformatories, and other institutions involved in law enforcement or military activities where security against entry is an important factor; and

1.5 State of Hawaii operated airports, harbors, maintenance yards, and the premises of other government agencies where security against unauthorized entry is an important factor.

2. Barbed wire may be used in fences enclosing premises used for pasturing cattle or raising swine.

(43) Amending Chapter 4. Chapter 4 is amended by adding Section 432 to read:

**SECTION 432**
**AGRICULTURAL BUILDINGS**

**432.1 Appendix C.** Appendix C, Group U – Agricultural Buildings is by reference incorporated herein and made a part of this code.

(44) Amending Chapter 4. Chapter 4 is amended by adding Section 433 to read:

**SECTION 433**
**PASSENGER RAIL STATIONS AND BUILDINGS**

**433.1 Applicability.** The provisions of this section shall apply to buildings that connect to passenger rail stations constructed in accordance to NFPA 130.

**433.1.1 Passenger rail station fire separation line.** For the purpose of this section, a passenger rail station fire separation line shall be established. The passenger rail station fire separation line shall define the extent of the passenger rail station. Buildings and parking structures shall be outside of the passenger rail station fire separation line and are not considered as part of the passenger rail station. Where a building is above or below a passenger rail station, the

building shall be of Type I or II construction, and there shall be a minimum two-hour fire resistance rated horizontal assembly constructed in accordance with International Building Code Section 711.

**433.1.2 Fire-resistance-rated separation.** A building shall be separated from the passenger rail station by a fire wall complying with International Building Code Section 706.

**Exception:** The exterior walls of a building separated from a passenger rail station, which complies with International Building Code Table 602.

**433.1.3 Openings between passenger stations and buildings.** Except for the separation between Group R sleeping units and the passenger rail stations, openings between passenger rail stations and buildings of Type I or II construction need not be protected.

**433.1.4 Parking garages.** An attached garage for the storage of passenger vehicles having a capacity of not more than nine persons and open parking garages shall be separated from the passenger rail station by not less than two-hour fire barrier constructed in accordance with International Building Code Section 707 or horizontal assemblies constructed in accordance with International Building Code Section 711, or both.

Openings between the passenger rail station and an attached garage shall not be required to be protected with fire protection rated openings; provided that all of following conditions are met:

(a) The openings do not exceed 25 percent of the area of the fire barrier in which they are located.

(b) Means are provided to prevent spilled fuel from accumulating adjacent to the openings and entering the passenger rail station.

(c) Physical means are provided to prevent vehicles from being parked or driven within 10 feet (3,048 mm) of the openings.

(d) Parking garages, open or enclosed that are separated from the passenger rail station, shall comply with the provisions of International Building Code Table 602.

(e) Pedestrian walkways and tunnels that connect garages to passenger rail stations shall be constructed in accordance with International Building Code Section 3104.

**433.1.5 Kiosks.** Kiosks and similar structures (temporary or permanent) shall not be located within 20 feet of a passenger rail station and shall meet the following requirements:

(a) Combustible kiosks or other structures shall be constructed of fire-retardant treated wood complying with International Building Code Section 2303.2.

(b) Foam plastics having a maximum heat release rate not greater than 100 kW (105 Btu/h) when tested in accordance with the exhibit booth protocol UL 1975 or when tested in accordance with NFPA 289 using the 20 kW ignition source.

(c) Aluminum composite material (ACM) meeting the requirements of Class A interior finish in accordance to International Building Code Chapter 8 when tested as an assembly in the maximum thickness intended.

(d) The horizontal separation between kiosks or grouping thereof and other structures shall be not less than 20 feet (6,096 mm).

(e) Each kiosk or similar structure or grouping thereof shall have an area not greater than 300 square feet (28 m²).

**433.1.6 Children's play structures.** Children's play structures shall comply with International Building Code Section 424. The horizontal separation between the passenger rail station and children's play structures shall be not less than 20 feet (6,096 mm). The horizontal separation between children's play structures, kiosks and similar structures shall be not less than 20 feet (6,096 mm). Children's play structure groupings shall have an area not greater than 300 square feet (28 m²).

**433.2 Means of egress.** Required means of egress for buildings or structures connected to passenger rail stations shall be provided independent of the passenger rail station. The occupant load of the building opening into the passenger rail station shall not be included in determination means of egress requirements of the passenger rail station. Building exits terminating at the passenger rail station shall be considered as a dead end.

(45) Amending Chapter 4. Chapter 4 is amended by adding Section 434 to read:

**SECTION 434**
**STANDBY POWER**

**434.1 Installation.** Installation of standby power systems shall be in accordance with International Building Code Section 2702 and the *Electrical Code*.

**434.2 Operations and Maintenance.** Operation and maintenance of standby power systems shall be in accordance with the *Fire Code*.

(46) Amending Section 501.1. Section 501.1 is amended to read:

**501.1 Scope.** The provisions of this chapter control the height, area, and location of structures hereafter erected and additions to existing structures.

(47) Amending Section 501. Section 501 is amended by adding Section 501.2 to read:

**501.2 Location of building for fire department access.** Fire department access shall be as required by the *Fire Code*.

(48) Amending Section 504. Section 504 is amended by adding Sections 504.5 and 504.5.1 to read:

**504.5 Stair enclosure pressurization increase.** For Group R-1 and R-2 occupancies in buildings of VA, IV, or IIA construction equipped throughout with an approved automatic sprinkler system in accordance with International Building Code Section 903.3.1.1, the maximum number of stories permitted in accordance with International Building Code Section 504.4, may be increased by one additional story and 20 feet of height in accordance with International Building Code Section 504.3, provided the interior exit stairways and ramps are pressurized in accordance with International Building Code Sections 909.11 and 909.20 with 2 hour fire-rated shaft construction or the exit stairways are designed in accordance with the open exterior stairway requirements of Section 1027 of this code and the International Building Code.

**504.5.1 Special Provisions**. Group R-1 and R-2 meeting the requirements of Section 504.5 shall be permitted to be constructed as separate and distinct building as allowed in Section 510.2 of this code.

(49) Amending Section 506.3.1. Section 506.3.1 is amended by adding an Exception to read:

**Exception:** For the purposes of this section, an adjoining private right-of-way may be considered a *public way* if it meets Section 501.2.1 of this code, and the owner of the premises for which the building permit application is filed, owns a portion thereof.

(50) Amend Table 509. In the left column (Room or Area), line entry for Stationary storage battery systems is amended to read:

**TABLE 509**
**INCIDENTAL USES**

| ROOM OR AREA | SEPARATION AND/OR PROTECTION |
|---|---|
| Stationary storage battery systems having an energy capacity greater than the threshold quantity specified in Section 907.2.22 | 1 hour in Group B, F, M, S, and U occupancies;<br><br>2 hours in Group A, E, I, and R occupancies |

(51) Amending Section 510. Section 510 is amended by adding Section 510.10 to read:

**510.10 Carport.** A carport constructed of Type V-B construction on a hillside may exceed one story in height provided the space below the carport floor is unused or used for Group U occupancy only.

(52) Amending Table 602. Table 602 is amended by adding Footnote "j" for Occupancy Group S-2 to read:

j. For a Group S-2 open parking garage building or portion of a building that is less than 55 feet in height measured from grade plane with a Group R residential occupancy, the openings in the exterior wall with a fire separation distance 5 feet (1,523 mm) or greater shall not be required to

have a fire-resistive rating when the Group S-2 open parking is protected with an automatic fire sprinkler system.

(53) Amending Section 603.1. Section 603.1 is amended by adding Item 27 to read:

27. Wood construction shall be permitted for mezzanines constructed in buildings of Type IIB construction, subject to the following:

27.1 Mezzanines shall conform to Section 505.

27.2 The aggregate area of these mezzanines shall be included in the determination of the floor area and shall be included in calculating the allowable floor area of the stories in which the mezzanines are located.

27.3 Mezzanine floors, including supporting beams, girders, and columns shall be of 1-hour fire-resistive construction.

27.4 Fire sprinkler substitutions for 1-hour construction is not permitted.

(54) Amending Section 901.2. Section 901.2 is amended by deleting the word "International" in the first paragraph and adding a second paragraph to read:

Fire protection systems shall be installed, repaired, operated, and maintained in accordance with this code and the *Fire Code.* Where the *Fire Code* conflicts with the provisions of this code or any other code, the provisions that result in the greatest protection to the public, as determined by the *building official* in consultation with the *fire code official* will control.

(55) Amending Section 903.1.1. Section 903.1.1 is amended to read:

**903.1.1 Alternative protection.** Alternate automatic fire-extinguishing systems complying with Section 904 shall be permitted in lieu of automatic sprinkler protection where recognized by the applicable standard and approved by the *building official* and the *fire code official*.

(56) Amending Section 903.1. Section 903.1 is amended by adding Section 903.1.2 to read:

**903.1.2 Storage height signage.** In any building requiring an automatic sprinkler system, with a ceiling height greater than 12 feet (3,658 mm), a readily visible, metal sign, with letters painted or stenciled, not less than 1 inch (25 mm) high on a contrasting background that states the maximum storage height allowable for the installed sprinkler system, shall be placed next to the main shutoff valve of the automatic sprinkler riser.

(57) Amending Section 903.2.7.1. Section 903.2.7.1 is amended by deleting the word "International."

(58) Amending Section 903.2.8.1. Section 903.2.8.1 is amended to read:

**903.2.8.1 Group R-3.** An *automatic sprinkler system* installed in accordance with International Residential Code Section R313 is permitted in lieu of providing a private water system and fire hydrant for fire protection.

(59) Amending Section 903.2.8. Section 903.2.8 is amended by adding Section 903.2.8.5 to read:

**903.2.8.5 Group R-5.** An *automatic sprinkler system* installed in accordance with Section 903.3.1.3 shall be permitted in Group R-5 occupancies.

(60) Amending Section 903.2.11.1. Section 903.2.11.1 is amended by amending Item 2 to read:

2. Openings entirely above the adjoining ground level totaling at least 20 square feet (1.86 $m^2$) in each 50 linear feet (15,240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required opening shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15,240 mm). The height of the bottom of the clear opening shall not exceed 44 inches (1,118 mm) measured from the floor. Such required openings shall be unobstructed by sunshades, louvers, grillwork, or other construction of the exterior wall that prevent or hinder access to the openings by fire department personnel.

(61) Amending Section 903.2.11.1.1. Section 903.2.11.1 is amended to read:

**903.2.11.1.1 Opening dimensions and access.** Openings shall have a minimum dimension of not less than 30 inches (762 mm). Access to such openings shall be provided for the fire department from the exterior and shall not

be obstructed in a manner such that firefighting or rescue cannot be accomplished from the exterior. Such required openings shall be unobstructed by sunshades, louvers, grillwork, or other construction on the exterior wall that prevents or hinders access to the openings by the fire department personnel.

(62) Amending Section 903.3.1.1.1. Section 903.3.1.1.1 is amended by adding Item 7 to read:

7. Closets having an area of less than 24 square feet (2.29 m²) in individual dwelling units in R-2 occupancies shall not be required to be sprinklered. Closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered regardless of size.

(63) Amending Section 904.2. Section 904.2 is amended to read:

**904.2 Automatic fire-extinguishing systems.** Automatic fire-extinguishing systems may be installed as an alternative to the required automatic sprinkler systems of Section 903 if the *building official*, in consultation with the *fire code official*, determines that the alternative system provides reasonably similar levels of fire protection.

(64) Amending Section 904.2.2. Section 904.2.2 is amended as follows:

**904.2.2 Commercial hood and duct systems.** Commercial hood and duct systems shall be required by Section 11-39-3(7), Hawaii Administrative Rules (Department of Health). Each Type I hood and duct system shall be protected by an approved automatic fire-extinguishing system installed in accordance to the *Fire Code*.

(65) Amending Section 905.1. Section 905.1 is amended as follows:

**905.1 General.** Standpipe systems shall be provided in new buildings and structures in accordance with this section. Fire hose threads used in connection with standpipe systems shall be approved and shall be compatible with fire department hose threads. All hose connection outlets shall be installed so that a 12-inch (305 mm) long wrench may be used in connecting the hose with clearance for the wrench on all sides of the outlet. The location of the fire department hose connection shall be approved by the *fire code official*. All horizontal runs of standpipe systems shall be sloped to a drain valve at the low

point of the system, the drain valve shall be arranged to discharge at an approved location.

(66) Amending Section 905.2. Section 905.2 is amended as follows:

**905.2 Installation standard.** Standpipe systems shall be installed in accordance with this section and NFPA 14. Fire department connections for standpipe systems shall be in accordance with Section 912. When water pressure at a standpipe outlet exceeds 175 psi static or residual at 250 gpm flow, a pressure-reducing valve (PRV) shall be provided. The required pressure-reducing valves shall be located at the hose valve outlet only. Only field-adjustable valves shall be allowed. If special tools are required to make field adjustments on PRVs, a minimum of four (4) such tools shall be provided at locations approved by the *fire code official*.

(67) Amending Section 905.3.2. Section 905.3.2 is amended by amending Exception 2 to read:

2. Class I manual wet standpipes are allowed in buildings that are not high-rise buildings.

(68) Amending Section 905.4. Section 905.4 is amended by amending Item 6 to read:

6. Where the most remote portion of a nonsprinklered floor or story is more than 150 feet (45,720 mm) from a hose connection or the most remote portion of a sprinklered floor or story is more than 200 feet (60,960 mm) from a hose connection, additional hose connections shall be provided.

(69) Amending Section 906.1. Section 906.1 is amended to read:

**906.1 Where required.** Portable fire extinguishers shall be provided in occupancies and locations as required by the *Fire Code*.

(70) Deleting Section 907. Section 907 is deleted in its entirety and replaced with a new Section 907 to read:

**SECTION 907**
**FIRE ALARM AND DETECTION SYSTEMS**

**907.1 General.** Fire alarm systems and their components shall be as required by the *Fire Code*.

(71) Amending Section 909.19. Section 909.19 is amended to read:

**909.19 System acceptance.** Buildings, or portions thereof, required by this code to comply with this section shall not be issued a certificate of occupancy until such time that the provisions of this section have been fully complied with and that the fire department has received satisfactory instruction on the operation, both automatic and manual, of the system and a written maintenance program complying with the requirements of Chapter 11 of the *Fire Code.*

**Exception:** In buildings of phased construction, a temporary certificate of occupancy, shall be allowed; provided that those portions of the building to be occupied meet the requirements of this section for the operation of the system, and that the remainder does not pose a significant hazard to the safety of the proposed occupants or adjacent buildings.

(72) Amending Section 909.20. Section 909.20 is amended to read:

**909.20 Smokeproof enclosures.** Where required by Section 1023.11, a smokeproof enclosure shall be constructed in accordance with this section. A smokeproof enclosure shall consist of an *interior exit stairway* or *ramp* that is enclosed in accordance with the applicable provisions of Section 1023 and an open exterior balcony or ventilated vestibule meeting the requirements of this section. Where access to the roof is required by Section 1011.12, such access shall be from the smokeproof enclosure where a smokeproof enclosure is required.

(73) Amending Section 910.2.2. Section 910.2.2 is amended to read:

**910.2.2 High-piled combustible storage.** Smoke and heat removal required by Table 413.1 for buildings and portions thereof containing high-piled combustible stock or rack storage in any occupancy group shall be installed in accordance with Section 910.3 in unsprinklered building. In buildings and portions thereof containing high-piled combustible storage equipped throughout with an *automatic*

*sprinkler system* in accordance with Section 903.3.1.1, a smoke and heat removal system shall be installed in accordance with Section 910.3 or 910.4. In occupied portions of a building equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, where the upper surface of the story is not a roof assembly, a mechanical smoke removal system in accordance with Section 910.4 shall be installed.

(74) Amending Section 910.5. Section 910.5 is amended to read:

**910.5 Maintenance.** Smoke and heat vents and mechanical smoke removal systems shall be maintained in accordance to the *Fire Code.*

(75) Amending Section 911.1. Section 911.1 is amended to read:

**911.1 General.** See *Fire Code*.

(76) Amending Section 912.4.3. Section 912.4.3 is amended and Sections 912.4.3.1 and 912.4.3.2 are added to read:

**912.4.3 Physical protection.** Where fire department connections are subject to impact by a motor vehicle, vehicle impact protection shall be provided.

**912.4.3.1 Posts.** Guard posts shall comply with all of the following requirements:

(a) Constructed of steel not less than 4 inches (102 mm) in diameter and concrete filled.

(b) Spaced not more than 4 feet (1,219 mm) between posts on center.

(c) Set not less than 3 feet (914 mm) deep in a concrete footing of not less than a 15-inch (381 mm) diameter.

(d) Set with the top of the posts not less than 3 feet (914 mm) above ground.

(e) Located not less than 3 feet (914 mm) from the protected object.

**912.4.3.2 Other barriers.** Barriers, other than posts specified in Section 912.4.3.2, that are designed to resist, deflect or visually deter vehicular impact commensurate with an anticipated impact scenario shall be permitted where approved by the building official.

(77) Amending Section 915.1. Section 915.1 is amended to read:

**915.1 General.** Carbon monoxide detection shall be installed in new buildings in accordance with Sections 915.11 through 915.6. When the valuation of an addition, alteration or repair to existing *dwelling* and *sleeping units* exceeds the valuation specified in ROH Chapter 18 and a permit is required, or when one or more *sleeping rooms* are added or created in existing *dwelling units,* carbon monoxide alarms shall be installed in the locations specified in Section 915.2 and the installation shall be in accordance with Section 915.4.

**Exceptions:**

1. Repairs to the exterior surfaces of an existing Group R occupancy are exempt.

2. Carbon monoxide alarms are permitted to be solely battery operated where the code that was in effect at the time of construction did not require carbon monoxide detectors to be provided.

3. Carbon monoxide alarms are permitted to be solely battery operated in dwelling units that are not served from a commercial power source.

4. A carbon monoxide detection system in accordance with Section 915.5 shall be an acceptable alternative to carbon monoxide alarms.

(78) Amending Section 916.2. Section 916.2 is amended to read:

**916.2 Permits.** Permits shall be required as set forth in ROH Chapter 18.

(79) Amending Section 916.7. Section 916.7, Item 2 is amended to read:

2. For toxic gases, sample analysis shall be performed at intervals not exceeding five minutes in accordance with the *Fire Code.*

(80) Amending Section 916.11. Section 916.11 is amended to read:

**916.11 Inspection, testing and sensor calibration.** Gas detection systems and sensors shall be inspected, tested, and calibrated in accordance with the *Fire Code.*

(81) Amending Section 918.1. Section 918.1 is amended to read:

**918.1 General.** Emergency responder radio coverage shall be provided in all new buildings in accordance with the *Fire Code*.

(82) Amending Chapter 9. Chapter 9 is amended by adding Section 919 to read:

**SECTION 919**
**FIRE PROTECTION SYSTEMS SPECIAL INSPECTIONS**

**919.1 General.** Where application is made for construction as described in this section, the owner or the licensed design professional in responsible charge, acting as the owner's agent shall employ one or more fire protection systems' special inspectors to provide inspections during construction on the types of work listed under Section 919. The fire protection system special inspector shall be approved by the *building official*. These inspections are in addition to the inspections specified in Section 110.

**919.1.1 Building Permit Requirement.** The submitted plans shall include a statement of fire protection system inspection prepared by the licensed engineer of record as a condition for permit issuance.

**Exception:** The *building official* may waive the requirements for the employment of a special inspector if the construction is of minor nature.

**919.1.2 Report Requirement.** Fire protection system inspectors shall keep records of inspections and shall review working drawings prior to installation. The fire protection system inspector shall furnish inspection reports to the owner, licensed engineer or architect of record, and other owner-designated persons. Reports shall indicate that work inspected was done in conformance to the applicable code and shall include, but not be limited to, working drawings and acceptance tests required by this section.

All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the proper design professional and to the *building official*.

The special inspector shall submit a final signed report stating that they have reviewed the shop drawings and whether the work requiring special inspection

was, to the best of the inspector's knowledge, in conformance to the approved plans and specifications and the applicable workmanship provisions of this code, this report shall include a copy of the shop drawings provided to the *building official* prior to the final inspection.

**919.2 Automatic Sprinkler Systems.** Automatic systems shall be inspected and evaluated in accordance to the requirements of International Building Code Section 903.

(a) During installation.

**Exception:** Special inspector need not be present continuously during the installation of the sprinkler system provided the special inspector has inspected for conformance with this code and approved plans prior to concealment.

(b) During acceptance tests as required by NFPA 13, 13R, and 13D.

**919.3 Alternative Automatic Fire-Extinguishing Systems.** Alternative automatic fire-extinguishing systems shall be inspected and evaluated in accordance to the requirements of International Building Code Section 904.

(a) During installation.

**Exception:** Special inspector need not be present continuously during the installation of the alternate automatic fire extinguishing system provided the special inspector has inspected for conformance with this code and approved plans prior to concealment.

(b) During tests as required by NFPA 11, 12, 12A, 16, 17, and 17A.

**919.4 Standpipe Systems.** Standpipe systems shall be inspected and evaluated in accordance to the requirements of International Building Code Section 905.

(a) During installation.

**Exception:** Special inspector need not be present continuously during the installation of the standpipe system provided the special inspector has

inspected for conformance with this code and approved plans prior to concealment.

(b) During acceptance tests as required by NFPA 14.

**919.5 Smoke Control Systems.** Smoke control systems shall be inspected and evaluated in accordance to the requirements of International Building Code Sections 909 and 1705.18.

(a) During erection of ductwork and prior to concealment for the purposes of leakage testing and recording device location.

(b) Prior to occupancy and after sufficient completion for the purposes of pressure difference testing, flow measurements, and detection and control verification.

**919.6 Fire pumps.** Fire pump systems shall be inspected and tested in accordance to the requirements of Section 913 of the *Fire Code*. Acceptance test shall be performed and submitted to the *building official.*

(83) Amending Section 1002.2. Section 1002.2 is amended to read:

**1002.2 Fire safety and evacuation plans.** Fire safety and evacuation plans shall be as required by the *Fire Code.*

(84) Amending Section 1005.7.1. Section 1005.7.1 is amended by adding Exception 3 to read:

3. Exterior screen and storm doors of individual units of Group R-2 and Group R-3.

(85) Amending Section 1006.3.3. Section 1006.3.3 is amended by adding Conditions 6 through 6.15 to read:

6. Not more than three stories of Group R-2 occupancy are permitted to be served by a single exit under the following conditions:

6.1 The building has not more than six stories above grade plane.

6.2 The building does not contain a boarding house.

6.3 There are no more than four dwelling units on any floor.

6.4 The building is of not less than one-hour fire-resistive construction and equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Residential-type sprinklers shall be used in all habitable spaces in each dwelling unit.

6.5 There are no more than two single exit stairway conditions on the same building.

6.6 An exterior stairway or interior exit stairway is provided. The interior exit stairway, including any related exit passageway, shall be pressurized in accordance with Section 909.20. Doors in the stairway shall swing into the interior exit stairway regardless of the occupant load served; provided that doors from the interior exit stairway to the building exterior are permitted to swing in the direction of exit travel.

6.7 A corridor separates each dwelling unit entry/exit door from the door to an interior exit stairway, including any related exit passageway, on each floor. Dwelling unit doors shall not open directly into an interior exit stairway. Dwelling unit doors are permitted to open directly into an exterior stairway.

6.8 There are no more than 20 feet (6,096 mm) of travel to the exit stairway from the entry/exit door of any dwelling unit.

6.9 Travel distance measured in accordance with Section 1016 does not exceed 125 feet.

6.10 The exit does not terminate in an egress court where the court depth exceeds the court width unless it is possible to exit in either direction to the public way.

6.11 Elevators are pressurized in accordance with International Building Code Section 909.21 or shall open into elevator lobbies that comply with International Building Code Section 713. Where approved by the building official, natural ventilation is permitted to be substituted for pressurization where the ventilation would prevent the accumulation of smoke or toxic gases.

6.12 Other occupancies are permitted in the same building, provided they comply with all the requirements of this code. Other occupancies shall not communicate with the Group R occupancy portion of the building or with the single-exit stairway.

**Exception:** Parking garages accessory to the Group R occupancy are permitted to communicate with the exit stairway.

6.13 The exit serving the Group R occupancy does not discharge through any other occupancy, including an accessory parking garage.

6.14 There shall be no openings within 10 feet (3,048 mm) of unprotected openings into the stairway other than required exit doors having a one-hour fire-resistance rating.

6.15 The minimum width of this stairway is not less than 48 inches.

(86) Amending Section 1010.1.4.5. Section 1010.1.4.5 is amended by adding a second paragraph to read:

For assembly occupancy groups A-2 and A-3 which are accessory to Group B, M, R-1 and R-2, horizontal sliding or vertical security grilles are permitted at the main exit and shall be secured in the fully opened position during periods that the space is occupied. A readily visible durable sign is posted on the egress side adjacent to the grille stating "THIS GRILLE TO BE SECURED IN THE OPEN POSITION WHEN THIS SPACE IS OCCUPIED." The sign shall be in letters not less than 1 inch (25 mm) high on a contrasting background. Not more than one means of egress shall be equipped with horizontal sliding or vertical security grilles. The *building official* may order the removal of grilles due to noncompliance with this section or the required signage.

(87) Amending Section 1010.1.10. Section 1010.1.10 is amended by adding Exception 3 to read:

3. Double-acting screen doors used in conjunction with exit doors having panic hardware in school cafeterias.

(88) Amending Section 1011.2. Section 1011.2 is amended by adding Exception 4 to read:

4. Private stairways serving an occupant load of less than five shall not be less than 30 inches (76 mm) in width.

(89) Amending Section 1015.4. Section 1015.4 is amended by adding Exception 7 to read:

7. Guards in Group R-1 and R-2 occupancies shall not contain horizontal rails other than top and bottom rails, or cut-outs or indentations greater than 1-3/4 inches in width of protrusions that may provide a foothold for young children.

(90) Amending Section 1027.2. Section 1027.2 is amended to read:

**1027.2 Use in a means of egress.** Exterior exit stairways shall not be used as an element of a required means of egress for Group I-2 occupancies. For occupancies in other than Group I-2, exterior exit stairways and ramps shall be permitted as an element of a required means of egress for buildings.

(91) Amending Section 1027.3. Section 1027.3 is amended by adding a second and third paragraph to read:

Exterior exit stairways shall be arranged to avoid any impediments to the use by persons having a fear of high places. Outside stairs more than six stories above the grade plane shall be provided with an opaque visual obstruction not less than 48 inches (1,220 mm) in height.

Materials providing visual obstruction shall be construction which restricts the passage of light or sight, which may include a special architectural treatment, such as devices of metal or masonry screens and grilles, which may serve as a visual barrier. Guards constructed with materials meeting the requirements of Section 1015 shall be considered to be a visual obstruction if not less than 48 inches in height.

(92) Amending Section 1027.6. Section 1027.6 is amended by amending Exception 4 to read:

4. Separation from the interior of the building is not required for exterior stairways or ramps connected to open-ended corridors; provided that Items 4.1 through 4.6 are met:

4.1 The building, including corridors, stairways, or ramps, shall be equipped throughout with an automatic sprinkler system in accordance with International Building Code Section 903.3.

4.2 The open-ended corridors comply with International Building Code Section 1018.

4.3 The open-ended corridors are connected on each end to an exterior exit stairway or ramp complying with International Building Code Section 1026.

4.4 The exterior walls and openings adjacent to the exterior exit stairway or ramp comply with International Building Code Section 1022.

4.5 At any location in an open-ended corridor where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3.3 $m^2$) or an exterior stairway or ramp shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

4.6 Shall not be a required means of egress for buildings exceeding six stories above grade plane or which are high-rise buildings.

(93) Amending Section 1027. Section 1027 is amended by adding Section 1027.7 to read:

**1027.7 Water accumulation.** Exterior exit stairways and ramps shall be designed to minimize water accumulation on their surfaces.

(94) Amending Section 1030.3. Section 1030.3 is amended by adding Exceptions 1 and 2 to read:

1. Glass jalousie bladed windows which are not safety glazed may be used for emergency escape or rescue**.**

2. Escape or rescue windows in Group R-1 and R-2 occupancies opening into an exterior exit balcony serving more than two dwelling units or hotel guest rooms shall be permitted to have a finished sill height not more than 68 inches (172 mm) above the floor.

(95) Amending Section 1102.1. Section 1102.1 is amended to read:

**1102.1 Design.** Buildings and facilities shall be designed and constructed to be accessible in accordance with this code and ICC A117.1. Conformance with the design and construction requirements of the Americans with Disabilities Act Accessibility Guidelines administered by the Department of Justice or the Fair Housing Act Accessibility Guidelines administered by the Department of Housing and Urban Development shall be equivalent to meeting the accessibility of this code. Construction of public buildings or facilities in compliance with HRS Section 103-50 shall be equivalent to meeting the accessibility of this code. At the time of submittal of an application for a building permit, the applicant shall state on the plans that the project is subject to the above requirements.

(96) Amending Section 1202.1. Section 1202.1 is amended to read:

**1202.1 General.** Buildings shall be provided with natural ventilation in accordance with International Building Code Section 1202.5, or mechanical ventilation in accordance with the State of Hawaii, Title 11, Administrative Rules of the Department of Health, Chapter 39, or ANSI/ASHRAE Standard 62.2.

(97) Amending Section 1202.2.1. Section 1202.2.1 is amended to read:

**1202.2.1 Ventilated attic and rafter space.** Attics and enclosed rafter spaces where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain. Blocking and bridging shall be arranged so as not to interfere with the movement of air. An airspace of not less than 1 inch (25 mm) shall be provided between the insulation and the roof sheathing. The net free ventilating area shall not be less than 1/150$^{th}$ of the area of the space ventilated.

(98) Amending Section 1202.2.1. Section 1202.2.1 is amended by adding Exceptions 3 through 3.3 to read:

3. The attic space shall be permitted to be unvented when the design professional determines it would be beneficial to eliminate ventilation openings to reduce salt-laden air and to maintain relative humidity to 60 percent or lower to:

3.1 Avoid corrosion to steel components;

3.2 Avoid moisture condensation in the attic space; or

3.3 Minimize condensation in the attic space, or ventilation by maintaining satisfactory space conditions in both the attic and occupied space below.

(99) Amending Section 1202.5.1. Section 1202.5.1 is amended to read:

**1202.5.1 Ventilation area required.** The operable area of the openings to the outdoors shall be not less than five percent of the floor area being ventilated.

(100) Amending Section 1202.5.1.1. Section 1002.5.1.1, Exception 1 is amended and Exception 2 is added to read:

1. Exterior openings required for ventilation shall be permitted to open into a sunroom with thermal isolation or a patio cover; provided that the openable area between the sunroom addition or patio cover and the interior room shall have an area of not less than 10 percent of the floor area of the interior room or space, but not less than 20 square feet (1.86 $m^2$). The openable area of the opening to the outdoors shall be based on the total floor area being ventilated.

2. For Residential Group R-2, when the openings are obstructed, a licensed mechanical engineer shall provide a mechanical ventilation system in accordance with International Mechanical Code Section 403 or ANSI/ASHRAE Standard 62.2.

(101) Amending Section 1204.2. Section 1204.2 is amended to read:

**1204.2 Natural light.** The minimum net glazed area shall be not less than 10 percent of the floor area of the room served.

(102) Amending Section 1204.2.2. Section 1204.2.2 is amended by adding Exceptions 3 and 4 to read:

3. Residential Group R-3 and R-4, lighting shall be in accordance with International Residential Code Section R303.

4. For Residential Group R-1 and R-2, artificial light is only permitted for adjoining spaces complying with International Building Code Section 1204.2.1 when the openings are obstructed thereby inhibiting the flow of natural light.

(103) Deleting Section 1206. Section 1206 is deleted in its entirety.

(104) Amending Section 1207.2. Section 1207.2 is amended by adding Exception 5 to read:

5. For individual dwelling units 400 square feet or less in floor area excluding *lofts*, see Section 1207.5 of this code.

(105) Amending Section 1207. Section 1207 is amended by adding Sections 1207.5 through 1207.5.2.4 to read:

**1207.5 Lofts.** A floor level within a dwelling unit located more than 30 inches (762 mm) above the main floor, open to the main floor on one or more sides with a ceiling height of less than 6 feet 8 inches (2,032 mm) and used as a living or sleeping space.

**1207.5.1 Minimum loft area and dimensions.** Lofts used as a sleeping or living space shall meet the minimum area and dimensions requirements of Sections 1207.5.1.1 through 1207.5.1.3 of this code.

**1207.5.1.1 Minimum area.** Lofts shall have a floor area of not less than 35 square feet (3.25 $m^2$) and the aggregate area shall not exceed one-quarter of the floor area of the dwelling unit.

**1207.5.1.2 Minimum dimensions.** Lofts shall be not less than 5 feet (1,524 mm) in any horizontal dimension.

**1207.5.1.3 Height effect on loft area.** Portions of a loft with a sloped ceiling measuring less than 3 feet (914 mm) from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the loft.

**1207.5.2 Loft access.** The access to and primary egress from lofts shall be of any type described in Sections 1207.5.2.1 through 1207.5.2.3 of this code.

**1207.5.2.1 Stairways.** Stairways accessing lofts shall comply with Section 1207.5.2.1.1 of this code.

**1207.5.2.1.1 Width.** Stairways accessing a loft shall not be less than 17 inches (432 mm) in clear width at or above the handrail. The width below the handrail shall be not less than 20 inches (508 mm).

**1207.5.2.1.2 Headroom.** The headroom in stairways accessing a loft shall be not less than 6 feet 2 inches (1,880 mm), as measured vertically, from a sloped line connecting the tread or landing platform nosing in the middle of their width.

**1207.5.2.1.3 Thread and risers.** Risers for stairs accessing a loft shall be not less than 7 inches (178 mm) and not more than 12 inches (305 mm) in height. Tread depth and riser height shall be calculated in accordance with one of the following formulas:

(a) The tread depth shall be 20 inches (508 mm) minus four-thirds of riser height;

(b) The riser height shall be 15 inches (381 mm) minus three-fourths of the thread depth.

**1207.5.2.1.4 Landing platforms.** The top tread and riser of stairways accessing lofts shall be constructed as a landing platform where the loft ceiling height is less than 6 feet 2 inches (1,880 mm) where the stairway meets the loft. The landing platform shall be 18 inches to 22 inches (457 mm to 559 mm) in depth measured from the nosing of the landing platform to the edge of the loft and 16 to 18 inches (406 mm to 457 mm) in height measured from the landing platform to the loft floor.

**1207.5.2.1.5 Handrails.** Handrails shall comply with International Building Code Section 1014.

**1207.5.2.1.6 Stairway guards.** Guards at open sides of stairways shall comply with International Building Code Section 1015.

**1207.5.2.2 Ladders.** Ladders accessing lofts shall comply with Section 1207.5.3.1.

**1207.5.2.2.1 Size and capacity.** Ladders accessing lofts shall have a rung width of not less than 12 inches (305 mm) and 10-inch (254 mm) to 14-inch (356 mm) spacing between rungs. Ladders shall be capable of supporting a 200-pound (75 kg) load on any rung. Rung spacing shall be uniform within ½ inch (12.7 mm).

**1207.5.2.2.2 Incline.** Ladders shall be installed at 70 to 80 degrees from horizontal.

**1207.5.2.3 Loft Guards.** Loft guards shall be located along the open side of lofts. Loft guards shall be not less than 36 inches (914 mm) in height or one-half of the clear height to the ceiling, whichever is less.

**1207.5.2.4 Emergency Escape and Rescue.** Lofts used as sleeping space shall meet the requirements of International Building Code Section 1030 for emergency escape and rescue openings.

(106) Amending Section 1301.1. Section 1301.1 is amended to read:

**1301.1 Scope.** For Energy Efficiency, buildings shall be designed and constructed in accordance with ROH Chapter 16B.

(107) Amending Section 1502.1. Section 1502.1 is amended to read:

**1502.1 General.** Design and installation of roof drainage systems must comply with International Building Code Section 1502 and all applicable *Plumbing Code* requirements. Roof drains discharge at the public way shall be in accordance with ROH Chapter 43, Article 11.

(108) Amending Section 1502.2. Section 1502.2 is amended to read:

**1502.2 Secondary (emergency overflow) drains or scuppers.** Where roof drains are required, secondary (emergency overflow) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water shall be entrapped if the primary drains allow buildup for any reason. The installation and sizing of secondary emergency overflow drains, leaders, and conductors shall comply with the *Plumbing Code*.

(109) Amending Chapter 15. Chapter 15 is amended by adding Section 1513 to read:

**SECTION 1513**
**MISCELLANEOUS ROOFTOP STRUCTURES**

**1513.1 General.** Cabanas, trellises, and other similar structures on roof tops shall conform to all of the following:

(a) Have a headroom clearance of not less than 7 feet 6 inches (2,286 mm).

(b) Be not more than 225 square feet (93 $m^2$) in area.

(c) Aggregate area of such structures shall not exceed 1,000 square feet in area (413 $m^2$).

(d) Where the fire separation distance is greater than 10 feet (3,048 mm), the structure shall be constructed of the type of materials specified by the type of construction for exterior walls but shall not be required to comply with fire resistive rating requirement.

(e) The height of such structure shall not exceed 75 feet (22,860 mm) above the fire department access road and shall be fire sprinklered when required by other sections of this code.

(f) Where the fire separation distance is greater than 20 feet (6,100 mm) the structure shall be permitted to be constructed of fire-retardant-treated-wood.

(110) Amending Section 1615. Section 1615 is amended by amending Section 1615.1 and adding Sections 1615.2, 1615.3, 1615.4, and 1615.5 to read:

**1615.1 General.** The design and construction of Risk Category III and IV buildings and structures, where located in the Tsunami Design Zones defined in the ASCE 7 Tsunami Design Geodatabase (version 2022-1.0), shall be in accordance with Chapter 6 of ASCE 7-22, except as modified by this code.

**1615.3 Definitions.**

a. **Tsunami Design Geodatabase**. The ASCE database (version 2022-1.0) of Tsunami Design Zone maps and associated design data for the states of Alaska, California, Hawaii, Oregon, and Washington.

b. **Tsunami Design Zone**. An area identified on the Tsunami Design Zone map between the shoreline and the inundation limit, within which certain structures designated in Chapter 6 are designed for or protected from inundation.

**1615.4 Lateral-Force Resisting Systems.** Lateral-Force-Resisting System Acceptance Criteria for structures designed to the requirements. For Seismic Design Category A and B, the lateral-force-resisting system shall be designed to resist the Maximum Considered Tsunami. For structures designed to the requirements for Seismic Design Category C, D, E, or F, the lateral-force-resisting system shall be deemed adequate if $0.75\ \Omega_0 E_h$ exceeds the required tsunami force $F_{TSU}$, where $E_h$ is the required seismic resistance and $\Omega_0$ is the system overstrength as defined in Chapter 12 of the ASCE 7 standard. When the inundated portions of Seismic Design Category C structures are detailed per Seismic Design Category D, it shall be permitted to use the $\Omega_0$ system overstrength corresponding to SDC D for the acceptance of the lateral-force-resisting system for the overall tsunami force on the structure.

**1615.5 Deep Foundations.** Buildings and structures on deep foundation systems complying with Section 1810 shall be permitted to be deemed to satisfy ASCE 7 Section 6.12.2.4 Scour.

(111) Amending Section 1704.2.1. Section 1704.2.1 is amended to read:

**1704.2.1 Special inspector qualifications.** Prior to the start of the construction each special inspector shall provide written documentation to the *building official* demonstrating their competence and relevant experience or training in each type of inspection they shall perform. Inspector personnel shall not be allowed to perform inspections without these qualifications unless directly supervised by the qualified, responsible special inspector. Experience or training shall be considered relevant when the documented experience or training is related in complexity to the same type of special inspection activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of this code.

The registered design professional in responsible charge and engineers of record involved in the design of the project are permitted to act as the special inspector and their personnel are permitted to act as the special inspectors for the work designed by them, provided they qualify as special inspectors, with the exception of welding and high strength bolting.

(112) Amending Section 1705. Section 1705 is amended by adding Section 1705.19 to read:

**1705.19 Fire-protection systems.** Special inspection for fire-protection systems is required. See Section 901.2.

(113) Amending Section 1705. Section 1705 is amended by adding Sections 1705.20 and 1705.21 to read:

**1705.20 Termite protection.** Where termite protection consists of soil treatment, installation of termite barrier, structural lumber and pipe penetrations for new wood frame residential buildings. Special inspection is required.

**1705.21 Soils and foundation.** Where soils conditions warrant a geotechnical investigation or are specified in ROH Chapter 18A. Special inspection is required.

(114) Amending Section 1801.1. Section 1801.1 is amended by adding a second paragraph to read:

Requirements governing excavation, grading, and earthwork construction, including fills and embankments, are governed by ROH Chapter 18A.

(115) Amending Section 1803.2. Section 1803.2 is amended to read:

**1803.2 Inspection requirements.** The *building official* shall be permitted to require special inspections for requirements of ROH Chapter 16.

(116) Amending Section 1803.5.2. Section 1803.5.2 is amended to read:

**1803.5.2 Questionable soil.** Where the classification, strength or compressibility of the soil is in doubt or where a load-bearing value superior to that specified in this code is claimed, or where there is known occurrence of slippage, or properties that contain slopes of 15 percent or more, the building official shall be permitted to require that a geotechnical investigation be conducted. This section does not prohibit the *building official* from requiring soils investigations for reasons other than those stated here.

(117) Amending Section 1805.4.3. Section 1805.4.3 is amended to read:

**1805.4.3 Drainage discharge.** The floor base and foundation perimeter drain shall discharge by gravity or mechanical means into an approved drainage system that complies with the *Plumbing Code*.

(118) Amending Section 2403.5. Section 2403.5 is amended to read:

**2403.5 Louvered windows or jalousies.** Regular plate, sheet, or patterned glass louvered windows and jalousies shall be no thinner than nominal 3/16 inch (4.8 mm) and no longer than 48 inches (1,219 mm). When other glass types are used, design shall be submitted to the building official for approval. Exposed glass edges shall be smooth. Wired glass with wire exposed on longitudinal edges shall not be used in jalousies or louvered windows.

**Exception:** Pre-manufactured louvered window assemblies with certified test reports by an independent AAMA certified testing laboratory, tested to AAMA/WDMA/CSA 101/I.S.2/A440 or NAFS-1 or NAFS-2 standard or equivalent ASTM testing criteria.

Exposed edges must be smooth. Wired glass with wire exposed on longitudinal edges will not be used in jalousies of louvered windows.

(119) Amending Section 2701.1. Section 2701.1 is amended to read:

**2701.1 Scope.** The provisions of this chapter and NFPA 70 shall govern the design, construction, erection and installation of the electrical components, appliances, equipment and systems used in buildings and structures covered by this code. The *Fire Code* and NFPA 70 shall govern the use and maintenance of electrical components, appliances, equipment and systems. The *International Existing Building Code* and the NFPA 70 shall govern the alteration, repair, relocation, replacement, and addition of electrical components, appliances, or equipment and systems.

(120) Amending Section 2702.4. Section 2702.4 is amended to read:

**Section 2702.4 Maintenance.** Emergency and standby power systems shall be maintained and tested in accordance with the *Fire Code.*

(121) Amending Chapter 27. Chapter 27 is amended by adding Section 2703, Section 2703.1, and Table 2703.2 to read:

**SECTION 2703**
**SOLAR PHOTOVOLTAIC POWER SYSTEMS**

**2703.1 General.** Solar photovoltaic systems shall be installed in accordance with the Fire Code. The electrical portion of solar PV systems shall be installed in accordance with NFPA 70.

**TABLE 2703.2**
**BATTERY STORAGE SYSTEM THRESHOLD QUANTITIES**

| BATTERY TECHNOLOGY | CAPACITY[a] |
|---|---|
| Flow Batteries[b] | 20 kWh |
| Lead Acid, All Types | 70 kWh |
| Lithium, All Types | 20 kWh |
| Nickel Cadmium (Ni-Cd) | 70 kWh |
| Sodium, All Types | 20 kWh[c] |
| Other Battery Technologies | 10 kWh |

For SI:1 kilowatt hour = 3.6 megajoules.
a. For batteries rated in amp-hours, kWh shall equal rated voltage times amp-hour rating divided by 1000.
b. Shall include vanadium, zinc-bromine, polysulfide-bromide, and other flowing electrolyte-type technologies.
c. 70 kWh for sodium-ion technologies.

(122) Amending Chapter 28. Chapter 28, Mechanical Systems, is deleted in its entirety.

(123) Amending Section 2901.1. Section 2901.1 is amended to read:

**2901.1 Scope.** Plumbing systems shall comply with the *Plumbing Code*.

(124) Amending Section 2901. Section 2901 is amended by adding Section 2901.2 to read:

**2901.2 Application.** The provisions of this Chapter shall apply to new construction.

(125) Amending [P] Table 2902.1. [P] Table is amended to read:

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## [P] TABLE 2902.1
## MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]

| NO. | CLASSIFICATION | OCCUPANCY | DESCRIPTION | WATER CLOSETS | | LAVATORIES | | BATHTUBS / SHOWERS | DRINKING FOUNTAINS [e, f] | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MALE | FEMALE | MALE | FEMALE | | | |
| 1 | Assembly | A-1 [d, h] | Theaters and other *Building*s for the performing arts and motion pictures | 1 per 125 | 1 per 65 | 1 per 200 | | — | 1 per 500 | 1 service sink |
| | | A-2 [d, h, i] | Nightclubs, bars, taverns, dance halls, and *Building*s for similar purposes | 1 per 40 | 1 per 40 | 1 per 75 | | — | 1 per 500 | 1 service sink |
| | | | Restaurants, banquet halls, and food courts | 1 per 75 | 1 per 75 | 1 per 200 | | — | 1 per 500 | 1 service sink |
| | | A-3 [d, h] | Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades, and gymnasiums | 1 per 125 | 1 per 65 | 1 per 200 | | — | 1 per 500 | 1 service sink |
| | | | Passenger terminals and transportation facilities | 1 per 500 | 1 per 500 | 1 per 750 | | — | 1 per 1,000 | 1 service sink |
| | | | Places of worship and other religious services | 1 per 150 | 1 per 75 | 1 per 200 | | — | 1 per 1,000 | 1 service sink |
| | | A-4[h] | Coliseums, arenas, skating rinks, pools, and tennis courts for indoor sporting events and activities | 1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500 | 1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520 | 1 per 200 | 1 per 150 | — | 1 per 1,000 | 1 service sink |

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| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A-5[h] | Stadiums, amusement parks, bleachers, and grandstands for outdoor sporting events and activities | 1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500 | 1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520 | 1 per 200 | 1 per 150 | — | 1 per 1,000 | 1 service sink |

| NO. | CLASSIFICATION | OCCUPANCY | DESCRIPTION | WATER CLOSETS | | LAVATORIES | | BATHTUBS / SHOWERS | DRINKING FOUNTAINS [e] | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MALE | FEMALE | MALE | FEMALE | | | |
| 2 | Business | B | *Building*s for the transaction of business, professional services, other services involving merchandise, Office *Building*s, banks, light industrial, and similar uses | 1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50 | | 1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80 | | — | 1 per 100 | 1 service sink[g] |
| 3 | Educational | E | Educational facilities | 1 per 50 | | 1 per 50 | | — | 1 per 100 | 1 service sink |
| 4 | Factory and industrial | F-1 and F-2 | Structures in which occupants are engaged in work fabricating, assembly, or processing of products or materials | 1 per 100 | | 1 per 100 | | — | 1 per 400 | 1 service sink |
| 5 | Institutional | I-1 | Residential care | 1 per 10 | | 1 per 10 | | 1 per 8 | 1 per 100 | 1 service sink |
| | | I-2 | Hospitals, ambulatory nursing home care recipient [b] | 1 per room[c] | | 1 per room[c] | | 1 per 15 | 1 per 100 | 1 service sink |
| | | | Employees, other than residential care [b] | 1 per 25 | | 1 per 35 | | — | 1 per 100 | — |
| | | | Visitors, other than residential care | 1 per 75 | | 1 per 100 | | — | 1 per 500 | — |
| | | I-3 | Prisons [b] | 1 per cell | | 1 per cell | | 1 per 15 | 1 per 100 | 1 service sink |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | I-3 | Reformatories, detention centers, and correctional centers [b] | 1 per 15 | 1 per 15 | 1 per 15 | 1 per 100 | 1 service sink |
| | | | Employees [b] | 1 per 25 | 1 per 35 | — | 1 per 100 | — |
| | | I-4 | Adult day care and child day care | 1 per 15 | 1 per 15 | 1 | 1 per 100 | 1 service sink |
| 6 | Mercantile | M | Retail stores, service stations, shops, salesrooms, markets, and shopping centers | 1 per 500 | 1 per 750 | — | 1 per 1,000 | 1 service sink[g] |

**[P] TABLE 2902.1—continued**
**MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES [a]**
**(See Sections 2902.2 and 2902.3)**

| NO. | CLASSIFICATION | OCCUPANCY | DESCRIPTION | WATER CLOSETS | LAVATORIES | BATHTUBS OR SHOWERS | DRINKING FOUNTAINS [e] | OTHER |
|---|---|---|---|---|---|---|---|---|
| | | | | MALE FEMALE | MALE FEMALE | | | |
| 7 | Residential | R-1 | Hotels, motels, boarding houses (transient) | 1 per sleeping unit | 1 per sleeping unit | 1 per sleeping unit | — | 1 service sink |
| | | R-2 | Dormitories, fraternities, sororities, and boarding houses (not transient) | 1 per 10 | 1 per 10 | 1 per 8 | 1 per 100 | 1 service sink |
| | | R-2 | Apartment house | 1 per dwelling unit | 1 per dwelling unit | 1 per dwelling unit | — | 1 *Kitchen* sink per *Dwelling Unit*; 1 automatic clothes washer connection per 20 *Dwelling Units* |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | R-3 | One- and two-family dwellings | 1 per dwelling unit | 1 per 10 | 1 per dwelling unit | — | 1 *Kitchen* sink per *Dwelling Unit*; 1 automatic clothes washer connection per *Dwelling Unit* |
| | | R-3 | Congregate living facilities with 16 or fewer persons | 1 per 10 | 1 per 10 | 1 per 8 | 1 per 100 | 1 service sink |
| | | R-4 | Congregate living facilities with 16 or fewer persons | 1 per 10 | 1 per 10 | 1 per 8 | 1 per 100 | 1 service sink |
| 8 | Storage | S-1<br>S-2 | Structures for the storage of goods, warehouses, store-houses and freight depots, low and moderate hazard | 1 per 100 | 1 per 100 | — | 1 per 1,000 | 1 service sink |

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by this code.
b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.
c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted where such room is provided with direct access from each patient sleeping unit and with provisions for privacy.
d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
e. The minimum number of required drinking fountains shall comply with Table 2902.1 and Chapter 11.
f. Drinking fountains are not required for an occupant load of 15 or fewer.
g. For business and mercantile occupancies with an occupant load of 15 or fewer, service sinks shall not be required.
h. See Section 303.2.1
i. Where restaurants provide drinking water in a container free of charge, drinking fountains shall not be required in those restaurants. In other occupancies where drinking fountains are required, water dispensers shall be permitted to be substituted for more than 50 percent of the required number of drinking fountains.

(126) Amending Section 2902. Section 2902 is amended by adding Section 2902.7 to read:

**2902.7 Toilet Facilities in Group A Occupancy.** In a building or portion of a building containing a new Group A Occupancy such as an entertainment center, movie theatre, sports area, other similar occupancy, or alterations to existing public assemblies exceeding $500,000, the number of water closets required for females who are not employed in that building shall be at least twice the number available of water closets required for males who are not employed in that building or portion.

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(127) Amending Section 2902. Section 2902 is amended by adding Section 2902.8 to read:

**2902.8 Urinals.** Urinals may be substituted for no more than 50 percent of the required water closets.

(128) Amending Section 3007.1. Section 3007.1 is amended to read:

**3007.1 General.** Where required by International Building Code Section 403.6.1, every floor above and including the lowest level of fire department vehicle access of the building shall be served by fire service access elevators complying with International Building Code Sections 3007.1 through 3007.9. Except as modified in this section, fire service access elevators shall be installed in accordance with this chapter and ASME A17.1/CSA B44.

**Exception:** Elevators that only service an open or enclosed parking garage and the lobby of the building shall not be required to serve as fire service access elevators.

(129) Amending Section 3007.6.1. Section 3007.6.1 is amended to read:

**3007.6.1 Access to interior exit stairway or ramp**. The enclosed fire service access elevator lobby shall have direct access from the enclosed elevator lobby to an enclosure for an interior exit stairway or ramp.

**Exceptions:**

1. Access to an interior exit stairway or ramp shall be permitted to be through a protected path of travel that has a level of fire protection not less than the elevator lobby enclosure. The protected path shall be separated from the enclosed elevator lobby through an opening protected by a smoke and draft control assembly in accordance International Building Code Section 716.2.2.1.

2. Access is permitted from an exterior exit stairway or ramp as provided.

(130) Amending Section 3103.1. Section 3103.1 is amended to read:

**3103.1 General.** See ROH Section 18-3.4.

(131) Amending Section 3105.2. Section 3105.2 is amended to read:

**3105.2 Design and construction.** Awnings and canopies shall be designed and constructed to withstand wind or other lateral loads and live loads as required by International Building Code Chapter 16 with due allowance for shape, open construction, and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. Awnings shall have frames of noncombustible material, fire-retardant-treated wood, wood of Type IV sizes, or 1-hour construction with combustible or noncombustible covers and shall be either retractable, folding, or collapsible. When collapsed, retraced, or folded, the design shall be such that the awning does not block any required exit.

**Exceptions:**

1. A fixed awning not more than 10 feet (3,048 mm) in length may be erected over a doorway to the building.

(132) Amending Sections 3106.2 through 3106.5. Sections 3106.2 through 3106.5 are amended to read:

**3106.2 Thickness**. The maximum height or thickness of a marquee measured vertically from its lowest to its highest point shall not exceed 3 feet (914 mm).

**3106.3 Roof construction.** Where the roof or any part thereof is a skylight, the skylight shall comply with the requirements of International Building Code Section 2405. Plastic skylights shall comply with International Building Code Section 2610.

Every roof and skylight of a marquee over a public right-of-way shall be sloped to downspouts which shall conduct any drainage from the marquee under the sidewalk to the curb.

**3106.4 Location prohibited.** Every marquee shall be so located as not to interfere with the operation of any exterior standpipe or to obstruct the clear passage of stairways or exits from the building or the installation or maintenance of street lighting.

**3106.5 Construction.** A marquee shall be supported entirely from the building and shall be constructed entirely of noncombustible materials.

**Exception:** Drop-off curtains may be suspended below the exterior periphery provided a minimum clearance of 7 feet (2,134 mm) from the sidewalk below is maintained.

(133) Amending Section 3107.1. Section 3107.1 is amended to read:

**3107.1 General.** Signs shall be designed, constructed and maintained in accordance with this code. Sign usage shall conform to ROH Chapter 21.

(134) Amending Section 3109. Section 3109 is amended by adding the following Sections to read:

**3109.1 General.** Swimming pools shall comply with the requirements of Sections 3109.2 through 3109.5 and other applicable sections of this code. These provisions are applicable to the design and construction of public swimming and wading pools. Those pools and spas covered by these regulations include municipal, institutional, hotel, apartment, and similar type occupancies; and hydrotherapy spas, therapeutic pools, and special pools of similar type usage. Also covered are swimming pools, spas, and hot tubs for one-family and two-family dwellings, and similar type pools; and ornamental pools. This code establishes minimum standards to provide a reasonable level of safety and protection of health, property, and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, and maintenance or use of pools and spas.

**3109.2 Alternative materials, design and methods of construction and equipment.** The provisions of this code are not intended to prevent the installation of any design or material or to prohibit any method of construction not specifically prescribed by this code; provided that any such alternative has been approved. An alternative material, design or method of construction may be approved where the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code and that the materials, methods of work are reasonably equivalent to the standards in this code with respect to quality, strength, effectiveness, durability and safety. Where the alternative material, design or method of construction is not approved, the code official shall respond in writing, stating the reason why the alternative was not approved.

**3109.3 Public Swimming Pool.** Public swimming pools are structures intended for swimming, recreational bathing or wading that contain water over 24 inches

(610 mm) deep to include in-ground, above-ground and on-ground pools; hot tubs; spas and fixed-in-place wading pools. Public pools, other than a residential pool that is intended to be used for swimming or bathing and is operated by an owner, lessee, operator, licensee, or concessionaire, regardless of whether a fee is charged for use.

**3109.4 Residential Swimming Pools**. Residential swimming pools is intended for use that is accessory to a residential setting and available only to the household and its guests. Residential swimming pools shall comply with ROH Chapter 16, Article 6.

**3109.5 Swimming Pool Enclosures.** Swimming pools shall be completely enclosed by a fence not less than at least 4 feet (1,290 mm) in height or a screen enclosure. Openings in the fence shall not permit the passage of a 4-inch-diameter (102 mm) sphere. The fence or screen enclosure shall be equipped with self-closing and self-latching gates. All provisions of the building, electrical, and plumbing codes shall be applicable unless indicated otherwise and shall comply with ROH Chapter 16, Article 7.

**Exceptions:**

1. Swimming, dipping, or wading pools located on the premises of a hotel are not required to be enclosed.

2. A swimming pool with a power safety cover or a spa with a safety cover complying with ASTM F 1346 need not comply with enclosure requirements of this code.

**3109.5.1 Barrier Height and Clearances.** Barrier heights and clearances shall be in accordance with all of the following:

(a) The top of the barrier shall be not less than 48 inches (1,219 mm) above grade measured on the side of the barrier that faces away from the swimming pool. Such height shall exist around the entire perimeter of the vessel and for a distance of 3 feet (914 mm) where measured horizontally from the required barrier.

(b) The vertical clearance between grade and the bottom of the barrier shall be not greater than 2 inches (51 mm) measured on the side of the barrier

that faces away from the swimming pool.

(c) The vertical clearance between a surface below the barrier to a solid surface, such as concrete, and the bottom of the required barrier shall not exceed 4 inches (102 mm) where measured on the side of the required barrier that faces away from the vessel.

(d) Where the top of the pool structure is above grade, the barrier is authorized to be at ground level or mounted on top of the pool structure, and the vertical clearance between the top of the pool structure and the bottom of the barrier shall be not greater than 4 inches (102 mm).

**3109.5.1.1 Openings.** Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.

**3109.5.1.2 Solid Barrier Surfaces.** Solid barriers which do not have openings shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.

**3109.5.1.3 Closely Spaced Horizontal Members.** Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1,143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall be not greater than 1-3/4 inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall be not greater than 1-3/4 inches (44 mm) in width.

**3109.5.1.4 Widely Spaced Horizontal Members.** Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1,143 mm) or more, spacing between vertical members shall be not greater than 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall be not greater than 1-3/4 inches (44 mm) in width.

**3109.5.1.5 Chain Link Dimensions.** The maximum opening formed by a chain link shall be not more than 1-3/4 inches (44 mm). Where the fence is provided with slats fastened at the top which reduces the openings shall be not than 1-3/4 inches (44 mm).

**3109.5.1.6 Diagonal Members.** Where the barrier is composed of diagonal members, the maximum opening formed by the diagonal members shall be not greater than 1-3/4 inches (44 mm). The angle of the diagonal members shall not be greater than 45 degrees (0.79 rad) from vertical.

**3109.5.1.7 Gates.** Access doors or gates shall comply with the requirements of Sections 3109.5.1.1 through 3109.5.1.6 and shall be equipped to accommodate a locking device. Pedestrian access doors or gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Doors or gates other than pedestrian access doors or gates shall have a self-latching device. Release mechanisms shall be readily openable from the egress side without the use if a key or special knowledge or effort. Where the release mechanism of the self-latching device is located less than 54 inches (1,372 mm) from grade, the release mechanism shall be located on vessel side of the gate, and the gate and barrier shall be without openings greater than ½ inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

**3109.5.1.8 Dwelling wall as a barrier.** Where a wall of a *dwelling* serves as part of the barrier, one of the following shall apply:

(a) Doors with direct access to the pool through that wall shall be equipped with an alarm that produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be *listed* and labeled in accordance with UL 2017. In dwellings not required to be *Accessible units*, *Type A units* or *Type B units*, the deactivation switch shall be located 54 inches (1,372 mm) or more above the threshold of the door. In dwellings required to be *Accessible units*, *Type A units* or *Type B units*, the deactivation switch shall be located not higher than 54 inches (1,372 mm) and not less than 48 inches (1,219 mm) above the threshold of the door.

(b) The pool shall be equipped with a power safety cover that complies with ASTM F 1346.

(c) An approved means of protection, such as self-closing doors with self-latching devices, which are approved, shall be accepted so long as the degree of protection afforded is not less than the protection afforded by Section 3109.5.1.8, Item (a) or (b).

**3109.5.1.9 Pool structure as barrier.** Where an onground residential pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, the following shall apply:

(a) The onground pool wall itself shall be permitted to be the barrier where the pool structure is on grade and the wall is at least 48 inches (1,219 mm) above grade for the entire perimeter of the pool and complies with the requirements of Section 3109.5.1.1.

(b) The means of access is a ladder or steps, then the ladder or steps either shall be capable of being secured, locked or removed to prevent access, or the ladder or steps shall be surrounded by a barrier that meets the requirements of Sections 3109.5.1.1 through 3109.5.1.8.

(c) Where the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102 mm) sphere.

**3109.5.2 Indoor swimming pools.** Walls surrounding indoor swimming pools shall not be required to comply with Section 3109.5.1.8.

**3109.5.3 Prohibited locations.** Barriers shall be located so as to prohibit permanent structures, equipment, or similar objects from being used to climb the barriers.

**3109.6 Suction entrapment avoidance.** Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.

(135) Amending Section 3202.2. Section 3202.2 is amended to read:

**3202.2 Balconies, sun-control devices and appendages.** Projections such as roof eaves, cornices, sun-control devices, belt courses, and appendages such as water tables, sills, capitals, bases, and architectural projections which cannot be occupied or used, may project over the public street of the building site a distance as determined by the clearance of the lowest point of the projection above the grade immediately below, as follows:

Clearance above grade less than 8 feet (2,438 mm) – no projection is permitted greater than 4 inches (102 mm).

Clearance above the grade 8 feet (2,438 mm) and over – 1 inch of projection is permitted for each additional inch of clearance; provided that no such projection shall exceed a distance of 4 feet (1,219 mm).

Roof eaves shall be sloped to downspouts and/or gutters leading back to the building which shall conduct any drainage under the sidewalk area through the curb to the street gutter. A drain connection permit may be required.

(136) Amending Section 3202.2.3. Section 3202.2.3 is amended to read:

**3202.2.3 Awnings.** Awnings may extend over public property not more than 7 feet (2,134 mm) from the face of a supporting building, but no portion shall extend nearer than 30 inches (762 mm) to the face of the nearest curb line measured horizontally. In no case shall the awning extend over the public property greater than two thirds of the distance from the property line to the nearest curb in front of the building. All portions of any awning must be at least 8 feet (2,438 mm) above any public walkway.

**Exception:** Any valance attached to an awning shall not project above the roof of the awning at the point of attachment and shall not extend more than 12 inches (305 mm) below the roof of the awning at the point of attachment, but in no case shall any portion of a valance be less than 7 feet (2,134 mm) in height above a public way.

(137) Amending Section 3202.3.1. Section 3202.3.1 is amended to read:

**3202.3.1 Marquees.** Marquees shall project not more than three-fourths of the distance from the property line to the face of the curb but in no case reach within 30 inches (762 mm) of the face of the curb. There shall be a minimum of 8 feet (2,438 mm) vertical clearance between the lowest point of any marquee to the sidewalk below.

(138) Amending Section 3202.3. Section 3202.3 is amended by adding Section 3202.3.5 to read:

**3202.3.5 Doors.** No door, either fully opened or when opening, shall project beyond the property line.

(139) Deleting Section 3305. Section 3305 is deleted in its entirety.

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(140) Amending Section 3306.1. Section 3306.1 is amended by adding an Exception to read:

**Exception:** Not applicable to construction in preservation, agricultural and residential districts except when required by the *building official*.

(141) Amending Section 3306.5. Section 3306.5 is amended to read:

**3306.5 Barriers.** Barriers shall be not less than 6 feet (1,829 mm) in height and shall be placed on the side of the walkway nearest the construction. Barriers shall extend the entire length of the construction site. Openings in such barriers shall be protected by doors which are normally kept closed. Viewing panels shall be provided in barriers at a rate of one for every 25 linear feet (7.6 m) per frontage, with a minimum of one per frontage. Viewing panels shall be 12 inches x 12 inches (305 mm x 305 mm) in size and shall be blocked with Plexiglas or an equivalent non-frangible material. The top of the viewing panel shall be located no more than 6 feet (1,829 mm) above the level of the ground, and the bottom of the viewing panel shall be located no less than 3 feet (914 mm) above the level of the ground.

(142) Amending Section 3306. Section 3306 is amended by adding Section 3306.10 to read:

**3306.10 Watchman.** A watchman shall be employed to warn the general public when intermittent hazardous operations are conducted on or above the sidewalk.

(143) Amending Section 3307.1. Section 3307.1 is amended by adding a second and a third paragraph to read:

The owner and contractor doing the excavation or fill shall be responsible to implement safety measures, including but not limited to, safety nets, retaining walls or fences, and berms or trenches, to prevent falling rocks, boulders, soil, debris, and other dangerous objects from falling, sliding, or flowing onto adjoining properties, streets, or natural watercourses, or otherwise causing injury or damage to persons or property.

If proposed excavation and backfill work does not require a grading permit under ROH Chapter 18A, the *building official*, if deemed necessary to protect or promote public safety, may require the submittal of an engineering slope hazard report.

# A BILL FOR AN ORDINANCE

(144) Amending Section 3309.2. Section 3309.2 is amended to read:

**3309.2 Fire Hazards.** The provisions of this code and the *Fire Code* shall be strictly observed to safeguard against all the fire hazards attendant upon construction operations.

(145) Amending Chapter 35 (Referenced Standards). Chapter 35 (Referenced Standards) is amended by adding the Reference Standard ANSI/ASRAHE 62.2 - 2019 to read:

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**ANSI/ASRAHE** American Society of Heating and Air-Conditioning Engineers
1791 Tullie Circle NE
Atlanta, GA 30329

ANSI/ASRAHE 62.2 -2019: Standard for the Ventilation and Acceptable Air Quality in Residential Buildings
IBC Section 1202.5.1.1 Adjoining spaces.

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(146) Amending Chapter 35 (Referenced Standards). Chapter 35 (Referenced Standards) is amended by adding a new Referenced Standard BWS-WWS-2002 and SDPWC-1984 to read:

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**BWS** Board of Water Supply
630 South Beretania Street
Honolulu, HI 96843

**BWS-WWS-2002: Board of Water Supply, Water System Standards 2002**
503.3.2

**SDPWC-1984: Standard Details for Public Works Construction, September 1984.**
2807.1, 2807.9, 2807.10, 2807.12

**SDS: Rules Relating to Storm Drainage Standards, December 2012**
2808.9

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(147) Amending Chapter 35 (Referenced Standards). Chapter 35 (Referenced Standards) is amended by adding the Reference Standard NFPA No. 30A-18 to read:

| Standard reference number | Title | Referenced in code section number |
|---|---|---|
| 30A-18 | Code for Motor Fuel Dispensing Facilities and Repair Garages .....406.7 | |

**§ 16-1.2 Adoption of the Hawaii State Residential Code.**

The Hawaii State Residential Code, as adopted by the State of Hawaii on November 17, 2020, which adopts, with modifications, the International Residential Code for One- and Two-Family Dwellings, 2018 Edition (IRC), published by the International Code Council, Inc., 500 New Jersey Avenue, NW, 6th Floor Washington, DC 20001, is adopted by reference and made a part hereof, subject to the following amendments:

(1) Amending Section R101. Section R101.1 is amended and Section R101.2 is added to read:

**R101.1 Title.** These provisions shall be part of the Building Code of the City and County of Honolulu, and shall be referred to herein as "the Residential Code."

**R101.2 Scope.** The provisions of the International Residential Code for One- and Two-Family Dwellings shall be permitted as an alternative to the International Building Code to apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal, and demolition of detached one- and two-family dwellings not more than three stories in height, multiple single-family dwellings (townhouses) not more than two stories in height with a separate means of egress, and their accessory structures. A townhouse is a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides. For patio covers, the provisions of Appendix H are made a part of the Residential Code. For R-3 one-and two-family dwellings used as care homes, the provisions of Appendix M are made a part of the Residential Code.

(2) Amending Section R102.4. Sections R102.4.1.through Section 102.4.1.7 are amended and Section 102.4.1.8 is added to read:

**R102.4.1.1 Plumbing Code.** Wherever the term *International Plumbing Code* is used in this code, it shall mean ROH Chapter 19, Plumbing Code.

**R102.4.1.2 Fire Code.** Whenever the term International Fire Code is used in this code, it shall mean ROH Chapter 20, Fire Code.

**R102.4.1.3 International Energy Conservation Code.** Whenever the term *International Energy Conservation Code* is used in this code, it shall mean ROH Chapter 16B, Building Energy Conservation Code.

**R102.4.1.4 International Fuel Gas Code.** Whenever the term *International Fuel Gas Code* is used in this code, it shall mean ROH Chapter 19, Plumbing Code.

**R102.4.1.5 International Building Code.** Whenever the term *International Building Code* is used in this code, it shall mean ROH Chapter 16, Building Code.

**R102.4.1.6 Electrical Code.** The provisions of ROH Chapter 17, Electrical Code shall apply.

**R102.4.1.7**. Other referenced codes not listed in Section 102.4.1 are considered referenced guidelines and not mandatory.

**R102.4.1.8 Housing Code.** The provisions of ROH Chapter 16A, Housing Code shall apply.

(3) Amending Section R103.1. Section R103.1 is amended to read:

**R103.1 General.** Code enforcement agency shall be in accordance with Building Code Section 103.

(4) Amending Section R105.1. Section R105.1 is amended to read:

**R105.1 Required.** A building permit is required to perform work covered by this code as provided in ROH Chapter 18.

(5) Amending Section R105.8. Section R105.8 is amended to read:

**R105.8 Responsibility.** It shall be the duty of every person who performs work for the installation, alteration, or repair of building, structure, electrical, gas, mechanical or plumbing systems, for which this code is applicable, to comply with this code.

(6) Amending Section R106.1. Section R106.1 is amended to read:

**R106.1 Submittal documents**. See ROH Chapter 18. In addition to the requirements of the plot plan required in ROH Chapter 18, the construction documents submitted with the application for permit shall be accompanied by a site plan showing to scale the size and location of new construction and existing structures on the site plan showing to scale the size of and location of the new construction and distances from lot lines. In the case of demolition, the site plans shall show construction to be demolished and the location and size of existing structures and construction that are to remain on the site or plot.

(7) Amending Section R106.1.4. Section R106.1.4 is amended to read:

**R106.1.4 Information for construction in flood hazard areas.** For buildings and structures in flood hazard areas as established by ROH Chapter 21A, construction documents shall include:

(a) Delineation of flood hazard areas, floodway boundaries and flood zones, and the design flood elevation, as appropriate;

(b) The elevation of the proposed lowest floor, including basement; in areas of shallow flooding (AO zones), the height of the proposed lowest floor, including basement, above the highest adjacent grade;

(c) The elevation of the bottom of the lowest horizontal structural member in coastal high hazard areas (V Zone); and

(d) If design flood elevations are not included on the community's Flood Insurance Rate Map (FIRM), the applicant shall submit to the building official a flood study, flood data, and other pertinent information prepared by a licensed design professional, as required by ROH Chapter 21A.

(8) Amending Section R106.1. Section R106.1 is amended by adding R106.1.5 to read:

**R106.1.5 Topographic survey.** For new or additions to structures and buildings, on properties where the elevation difference on that site is 5 feet (1,524 mm) or more, there shall be provided a topographic survey of the existing site.

(9) Amending Section R106.1. Section R106.1 is amended by adding Sections R106.1.6 through R106.1.6.2 to read:

**R106.1.6 Stormwater management.** Stormwater management systems for residential uses include, but not limited to, reducing the total runoff generated on the site by reducing the total impervious surface area of the lot and implementing source control BMP and good housekeeping practices.

**R106.1.6.1 Increased runoff. Maximum impervious surface.** The impervious surface area for construction of one-family or two-family detached dwelling or duplex shall be in accordance with ROH Chapter 21, Land Use Ordinance.

**R106.1.6.2 Residential Stormwater Management Plan or RSWMP.** A RSWMP shall be prepared for building permit applications for Single-Family Dwelling, Two-Family Dwelling, and duplex projects resulting in an increase or decrease of total impervious surface area or replacing existing impervious surface area. All the existing and proposed impervious and permeable surfaces areas shall be reflected on the Site or Plot Plan, drawn to scale.

(10) Deleting Section R108. Section R108 is deleted in its entirety.

(11) Amending Section R109. Section R109 is amended by amending Sections R109.1.1 through R109.1.6 and adding Sections R109.5 through R109.9 to read:

**R109.1 Types of Inspections**. Inspections and lot survey shall be in accordance with the International Building Code Section B110.

**R109.1.1 Required inspections.** The *building official*, upon notification from the permit holder or the permit holder's agent, shall make the following inspections and shall either approve that portion of the construction as completed or shall notify the permit holder or the permit holder's agent if the same fails to comply with this code.

**R109.1.3 Floodplain inspections.** For construction in areas prone to flooding as established by ROH Chapter 21A, upon placement of the lowest floor, including basement, and prior to further vertical construction, the *building official* shall require submission of documentation, prepared and sealed by a land surveyor, licensed in the State of Hawaii, of the elevation of the lowest floor, including basement, required in Section R106, for the following two stages of construction:

(a) Upon placement of the lowest floor, including basement, and prior to further vertical construction; and

(b) Upon completion of the structure.

**R109.1.5 Other inspections.** In addition to the inspections specified in Sections R109.1.3 through R109.1.6 of this code, the *building official i*s authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of this code and other laws that are enforced by this code.

**R109.1.5.1 Fire-resistance-rated construction inspection**. When fire-resistance-rated construction is required between dwelling units or due to locate on property, an inspection of such construction, after all lathing and/or wallboard is in place, but before any plaster is applied, or before, wallboard joints and fasteners are taped and finished.

**R109.1.6 Final inspections.** Final inspections shall be made after the permitted work is complete and prior to final occupancy.

**R109.5 Special inspections.** Where application is made for construction as described in this section, the owner shall employ one or more special inspectors independent of the contractors performing the work, to provide inspections during construction on the types of work listed under Sections R109.5.1 and R109.5.6 of this code. These inspections are in addition to the inspections specified in Section R109 of this code. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the *building official*, for inspection of the particular type of construction or operation requiring special inspection. The *building official* may impose reasonable fees to cover the cost to conduct examination in licensing of special inspectors and issuance of registration cards.

**Exceptions:**

1. The *building official* may waive the requirements for the employment of a special inspector if the construction is of minor nature.

2. The employment of a special inspector shall not be required for construction work for any government agency that provides for its own inspections.

3. Special inspections are not required for building components unless the design involves the practice of professional engineering or architecture as defined by HRS Section 464.

**R109.5.1 Special inspections for wind requirements.** Special inspections are required for buildings and structures constructed where the 3-second-gust effective ultimate design wind speed is 140 mph or greater.

**R109.5.1.1 Structural wood.** Continuous special inspection is required during field gluing operations of elements of the main windforce-resisting system. Periodic special inspection is required for nailing, bolting, anchoring, and other fastening of components within the main windforce-resisting system, including wood shear walls, wood diaphragms, drag struts, braces, and hold-downs.

**Exception:** Special inspection is not required for wood shear walls, shear panels, and diaphragms, including nailing, bolting, anchoring, and other fastening to other components, of the main windforce-resisting system, where the fastener spacing of the sheathing is more than 4 inches (102 mm) on center.

**R109.5.1.2 Cold-formed steel light-frame construction.** Periodic special inspection is required during welding operations of elements of the main windforce-resisting system. Periodic special inspection is required for screw attachment, bolting, anchoring and other fastening of components within the main windforce-resisting system, including shear walls, braces, diaphragms, collectors (drag struts) and hold-downs.

**Exceptions:** A special inspection is not required for cold-formed steel light-frame shear walls, braces, diaphragms, collectors (drag struts) and hold-downs where either of the following apply:

1. The sheathing is gypsum board of fiberboard.

2. The sheathing is wood structural panel or steel sheets on only one side of the shear wall, shear panel or diaphragm assembly and the fastener spacing of the sheathing is more than 4 inches (102 mm) on center (o.c.).

**R109.5.1.3 Wind-resisting components.** Periodic special inspection is required for the following systems and components:

(a) Roof cladding.

(b) Wall cladding.

**R109.5.2 Termite protection.** Termite barrier, treated structural lumber, and pipe penetrations for new wood frame residential buildings. Special inspection is required.

**R109.5.3 Automatic fire protection systems.** Where an application is made for automatic fire sprinkler systems shall be inspected and evaluated in accordance to the requirements of NFPA 13, NPFA 13D, and NFPA 13R respectively.

**R109.5.4 Concrete construction.** The special inspections and verifications for concrete construction inspected in accordance with ACI 318.

**Exceptions:** Special inspections shall not be required for:

1. Foundation concrete for structures permitted to be designed under the International Residential Code.

2. Concrete footings supporting buildings three stories or less in height that are fully supported on earth or rock where the structural design is based on a specified compressive strength f'c no greater than 2,500 pounds per square inch (psi) (17.2 MPa), regardless of the compressive strength specified in the construction documents or used in the footing construction. Periodic inspection of the reinforcing for all concrete footings shall be required.

3. Nonstructural concrete slabs supported directly on the ground, including pre-stressed slabs on grade, where the effective pre-stress in

the concrete is less than 150 psi (1.03 MPa).

4. Concrete foundation walls constructed in accordance with Tables B1807.1.6.2, B1807.1.6.3(1), B1807.1.6.3(2), B1807.1.6.3(3), or B1807.1.6.3(4).

5. Concrete patios, driveways, and sidewalks on grade.

**R109.5.5 Floodplain construction.** See ROH Chapter 21A.

**R109.6 Building permit requirement.** Where special inspection or testing is required by Section R109.5, the construction drawings shall include a complete list of special inspections required by this section.

**R109.7 Statement of special inspections.** The applicant shall submit a statement of special inspections in accordance with Section R109.7 of this code as a condition for permit issuance.

**R109.8 Contractor responsibility.** When special inspection is required, a contractor's statement shall be submitted containing an acknowledgement of awareness of the special inspection requirements contained on the drawings and that the construction requiring special inspections shall be made accessible for inspections.

**R109.9 Report requirement.** The licensed engineer or architect of record shall submit a final signed report stating that they have received all the special inspection reports and documenting that there are no known unresolved code requirements that create significant public safety deficiencies.

(12) Amending Section R110.1. Section R110.1 is amended to read:

**R110.1 Use and occupancy**. No new building or structure shall be used or occupied, and no change in the existing *occupancy classification* of a building or structure or portion thereof shall be made until the *building official* has issued a certificate of occupancy therefore as provided herein. Issuance of a certificate of occupancy shall not be construed as approval of a violation of the provisions of this code or other ordinances of the jurisdiction.

**Exceptions:**

1. Certificates of occupancy are not required for work exempt from permits in ROH Chapter 18.

2. Accessory buildings or structures.

(13) Amending Section R110.2. Section R110.2 is amended to read:

**R110.2 Change in use.** Changes in the *occupancy classification* of an existing structure shall not be made except as specified by this code.

(14) Amending Section R110.3. Section R110.3 is amended to read:

**R110.3 Certificate issued.** After the *building official* inspects the building or structure and finds no violations of the provisions of this code or other laws that are enforced by the department, the *building official* shall issue a certificate of occupancy which shall contain the following:

(a) The building permit number.

(b) The address of the structure.
.

(c) The name and address of the owner.

(d) A description of the structure or portion thereof for which the certificate is issued.

(e) A statement that the described structure or portion thereof has been inspected for compliance with the requirements of this code.

(f) The name of the *building official*.

(g) If an automatic sprinkler system is provided.

(h) Any special conditions for this permit.

(15) Amending Section R110.4. Section R110.4 is amended to read:

**R110.4 Temporary occupancy.** The *building official* is authorized to issue a temporary certificate of occupancy before the completion of the entire work covered by the permit; provided that such portion or portions shall be occupied safely and is in compliance with the requirements of this code. The *building official* shall set a time period during which the temporary certificate of occupancy is valid.

(16) Amending Section R110.5. Section R110.5 is amended to read:

**R110.5 Revocation.** The *building official* may suspend or revoke a certificate of occupancy issued under the provisions of this code whenever the certificate is issued in error, or on the basis of incorrect information provided, or where it is determined that the structure or portion thereof violates any ordinance or regulation or any of the provisions of this code.

(17) Amending Section R112.1. Section R112.1 is amended to read:

**R112.1 General.** Board of Appeals shall be in accordance with International Building Code Section B113 as adopted by the City and County of Honolulu.

(18) Deleting Section R113. Section R113 is deleted in its entirety and replaced with a new Section R113 to read:

**SECTION R113**
**VIOLATIONS AND PENALTIES**

For violation and penalty provisions, see ROH Chapter 16, Article 10.

(19) Amending Section R202. Section R202 is amended by amending or adding the following definitions to read:

(a) By adding immediately after "ACCESSIBLE" the following definition to read:

**ACCESSORY DWELLING UNIT (ADU).** See ROH Chapter 21, Article 10.

(b) By amending the definition of "BUILDING, EXISTING" to read:

**BUILDING, EXISTING.** Existing building is a building for which a legal building permit has been issued, or one which complied with the Building Code in effect at the time the building was erected.

(c) By adding the following definitions:

**BUILDING, ENCLOSED.** A building that does not comply with the requirements for open or partially enclosed building.

**BUILDING, OPEN.** A building having each wall at least 80 percent open. $A_o \geq 0.8$ Ag where:

$A_o$ = total area of openings in a wall that receives positive external pressure, in ft² (m²)

$A_g$ = the gross area of that wall in which $A_{o\ is}$ identified, in ft² (m²)

**BUILDING, PARTIALLY ENCLOSED.** A building that complies with both of the following conditions:

1. The total area of openings in a wall that receives positive external pressure exceeds that sum of the areas of openings in the balance of the building envelope (walls and roof) by more than 10 percent.

2. The total area of openings in a wall that receives positive external pressure exceeds four ft² (0.37 m²) or one percent of the area of that wall, whichever is smaller, and the percentage of openings balance of the building envelope does not exceed 20 percent.

These conditions are expressed by the following equations:

1. $A_o > 1.1\ A_{oi}$

2.$A_o > 4$ ft² (0.37 m²) or $> 0.01\ A_g$, whichever is smaller, and $A_{oi}/A_{gi} \leq 0.20$

Where:

$A_oA_g$ are defined for Open Building.

$A_{oi}$ = the sum of the areas of openings in the building envelope (walls and roof) not including $A_o$, in ft² (m²).

$A_{gi}$ = the sum of the gross surface areas of the building envelope (walls and roof) not including $A_g$, in ft² (m²).

(d) By amending the definition of "BUILDING OFFICIAL" to read:

**BUILDING OFFICIAL.** The Director of Planning and Permitting of the City or the Director's authorized representative.

(e) By adding the definition of "CARPORT" after "CAP PLATE" to read:

**CARPORT.** A private garage which is at least 100 percent open on one side and with 50 percent net openings on another side or which is provided with an equivalent of such openings on two or more sides.

A private garage which is 100 percent open on one side and 25 percent open on another side with the latter opening so located to provide adequate cross ventilation may be considered a carport when approved by the building official.

(f) By adding the following definition immediately before the definition of "FENESTRATION" to read:

**FENCE.** A structure of permanent material such as wrought iron, wire, wood, vinyl, plastic, etc., with post foundations, erected for purposes of enclosure, division of property or decoration.

(g) By amending the definition of "KITCHEN" to read:

**KITCHEN.** Shall be as defined in the Land Use Ordinance, ROH Chapter 21.

(h) By adding the definition of "OCCUPANCY CLASSIFICATION" after "NOSING" to read:

**OCCUPANCY CLASSIFICATION.** The formal designation of the primary purpose of the building, structure, or portion thereof. Structures shall be classified into one or more of the occupancy groups listed in this section

based on the nature of the hazards and risks to building occupants generally associated with the intended building or structure. Different classifications of occupancy and use represent varying levels of hazard and risk to building occupants and adjacent properties. Certificates of occupancy permit specific occupancy classifications, not all uses within a group occupancy.

(i) By adding the definition of "SPRINKLER EQUIVALENCY" after "SPLINE" to read:

**SPRINKLER EQUIVALENCY.** The use of sprinkler equivalency systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety to those prescribed by the Fire Code, provided technical documentation is submitted to the Authority Having Jurisdiction to demonstrate equivalency and the system, method, or device is approved for the intended purpose.

(j) By amending the definition of "THIRD-PARTY CERTIFICATION AGENCY" to read.

**THIRD-PARTY CERTIFICATION AGENCY**. An approved agency operating a product, material certification system that incorporates an initial product testing, assessment and surveillances of a manufacturer's quality control system. An approved agency may be an individual who has been qualified by the department of planning and permitting to perform single-family residential plans review for code compliance, by having the necessary qualifications who has passed an examination administered by the *building official* with a qualifying score to review for single-family residential building permit requirements.

(k) By amending the definition of "THIRD-PARTY CERTIFIED" to read:

**THIRD-PARTY CERTIFIED.** Either a certification obtained by a manufacturer, indicating that the function and performance characteristics of a product or material have been determined by testing and ongoing surveillance by an approved third-party certification agency; or a certification of code compliance from an approved third-party residential plans reviewer, upon a form provided by the *building official* for compliance to the requirements to obtain a building permit. Manufacturer

assertion of certification is in the form of identification in accordance with the requirements of the third-party certification agency.

(l) By adding the definition of "TRANSIENT" after "TOWNHOUSE" to read:

**TRANSIENT.** Occupancy of a *dwelling unit* where the occupants are primarily residing for a period not more than 90 consecutive days.

(m) By adding the following definition, immediately after "WALL, RETAINING" to read:

**WALL, SITE.** A structure of stone, brick, masonry, concrete, or other similar permanent material, raised to some height and erected for purposes of enclosure, division of property or decoration.

(20) Amending Section R301.1. Section R301.1 is amended by adding Section R301.1.4 to read:

**R301.1.4 Complete load path and uplift ties.** Blocking, bridging, straps, approved framing anchors or mechanical fasteners shall be designed and installed to provide continuous ties from the roof to the foundation system. Sheet metal clamps, ties or clips, shall be formed of galvanized steel or other approved corrosion-resistant material not less than 0.040 inch (1.02 mm) nominal thickness. Uplift resistance shall be in accordance with International Residential Code Table R802.11.

(21) Amending Table R301.2 (1). Table R301.2 (1) is amended to read:

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

| WIND SPEED (mph) | SEISMIC DESIGN CATEGORY | SUBJECT TO DAMAGE FROM | | | FLOOD HAZARDS |
|---|---|---|---|---|---|
| | | WEATHERING | TERMITE | DECAY | |
| Per Figure R301.2(8) State Residential Code | C or $D_0$ | Negligible | Very heavy | Moderate to severe | FEMA |

(22) Amending Section R301.2.1. Section R301.2.1 is amended by adding Table R301.2.1 to read:

**TABLE R301.2.1**
**WIND SPEED BASED ON APPLICABLE WIND DESIGN CRITERIA**

| EFFECTIVE ULTIMATE DESIGN WIND SPEED [a] | EFFECTIVE NOMINAL DESIGN WIND SPEED [b] | WIND PROVISIONS [c] | WINDBORNE DEBRIS PROTECTION |
|---|---|---|---|
| $V_{eff-ult}$ < 140 | $V_{eff-asd}$ < 111 | Residential Code [c] | Not required |
| $140 \leq V_{eff-ult} < 149$ | $111 \leq V_{eff-asd} < 118$ | Alternative Provisions | Required |
| $149 \leq V_{eff-ult}$ | $118 \leq V_{eff-asd}$ | Alternative Provisions [d] | Required |

[a] The Effective Ultimate Design Wind Speed, $V_{eff-ult}$, shall be obtained from the basic wind speed definition used for structural design of *Building*s in the 2018 IBC, ASCE7-16 and Section 16-1.1.

[b] Wind speed conversion to the Effective Nominal Design Wind Speed, $V_{eff-asd}$ shall be in accordance with section R301.2.1.3.

[c] Where the Residential Code requires the Basic Wind Speed, the Effective Nominal Design Wind Speed, $V_{eff-asd}$, shall be used.

[d] The applicability of the wind design provisions of the Residential Code are exceeded and shall not be used. R301.1.1 Alternative provisions provides a list other codes and standards which shall be used in conjunction with applicable requirements of the Residential Code to complete the design.

(23) Amending Section R301.2.1. Section R301.2.1 is amended to read:

**R301.2.1 Wind design criteria.** Buildings and portions thereof may be constructed in accordance with the wind provisions of this code; provided that the ultimate design wind speed $V_{ult}$, determined from Figures R301.2(5), is less than 140 mph. The structural provisions of this code for wind loads are not permitted where wind design is required as specified in Section R301.2.1.1 of this code. Where different construction methods and structural materials are used for various portions of a *Building*, the applicable requirements of this section for each portion shall apply. Where not otherwise specified the wind loads listed in Table R301.2(2), of this code, adjusted for height and exposure using Table R301.2(3), shall be used to determine design load performance requirements for wall coverings, curtain walls, roof coverings, exterior windows, skylights, garage

doors, and exterior doors. Asphalt shingles shall be designed for wind speeds in accordance with Section R905.2.4. A continuous load path shall be provided to transmit the applicable uplift forces in Section R802.11.1 from the roof assembly to the foundation.

(24) Amending Section R301.2.1.2 and Table R301.2.1.2. Section R301.2.1.2 and Table R301.2.1.2 are amended to read:

**R301.2.1.2 Protection of openings.** Windows in *Building*s located in windborne debris regions shall have glazed openings protected from windborne debris. Glazed opening protection for windborne debris shall meet the requirements of the Large Missile Test of ASTM E 1996 and of ASTM E 1886 referenced therein.

**Exceptions:**

1. Wood structural panels with a minimum thickness of 7/16 inch (11 mm) and a maximum panel span of 8 feet (2,438 mm) shall be permitted for opening protection in one- and two-story *Building*s classified as Group R-3 or R-4 occupancy. Panels shall be precut so that they shall be attached to the framing surrounding the opening containing the product with the glazed opening. Panels shall be predrilled as required for the anchorage method and shall be secured with the attachment hardware provided and anchors permanently installed on the *Building*. Attachment in accordance with Table R301.2.1.2 of this code, with corrosion-resistant attachment hardware provided and anchors permanently installed on the *Building* is permitted for *Building*s with a mean roof height of 33 feet (10,058 mm) or less where effective ultimate design wind speeds, $V_{eff\text{-}ult}$ do not exceed 175 mph (78 m/s).

2. Glazing in accessory structures to the single-*Family* dwelling to include but not limited to greenhouses and minor storage sheds.

3. Partially enclosed Occupancy R-3 *Building*s shall be permitted to be designed without wind-borne debris protection. Partially enclosed and open Occupancy R-3 *Building*s shall also include a residential safe room in accordance with ROH Chapter 16, Article 13, Hawaii Residential Safe Room.

**TABLE R301.2.1.2**
**WINDBORNE DEBRIS PROTECTION FASTENING SCHEDULE**
**FOR WOOD STRUCTURAL PANELS [a, b, c, d]**

| FASTENER TYPE | FASTENER SPACING | | |
|---|---|---|---|
| | PANEL SPAN ≤ 4 FOOT | PANEL SPAN > 4 FOOT AND ≤ 6 FOOT | PANEL SPAN > 6 FOOT AND ≤ 8 FOOT |
| No. 8 Wood screw based anchor with 2-inch embedment length | 16" | 10" | 8" |
| No. 10 Wood screw based anchor with 2-inch embedment length | 16" | 12" | 9" |
| ¼-inch lag screw based anchor with 2-inch embedment length | 16" | 16" | 16" |

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm,
1 pound = 0.454 kg, 1 mile per hour = 0.447 m/s.

a. This table is based on 175 mph effective ultimate design wind speed and a mean roof height of 45 feet.

b. Fasteners shall be installed at opposing ends of the wood structural panel. Fasteners shall be located a minimum of 1 inch from the edge of the panel.

c Anchors shall penetrate through the exterior wall covering with an embedment length of 2 inches minimum into the *Building* frame. Fasteners shall be located a minimum of 2-1/2 inches from the edge of concrete block or concrete.

d. Where screws are attached to masonry or masonry/stucco, they shall be attached utilizing vibration-resistant anchors having a minimum ultimate withdrawal capacity of 1,500 pounds.

(25) Amending Section R301.2.1.3 and Table R301.2.1.3. Section R301.2.1.3 and Table R301.2.1.3 are amended to read:

**R301.2.1.3 Wind speed conversion.** When referenced documents are based on fastest mile wind speeds, $V_{fm,}$ or three second gust effective nominal wind speeds, $V_{eff\text{-}asd,}$ the effective ultimate design wind speed, $V_{eff\text{-}ult,}$ obtained from Figure R301.2(8) of the IBC shall be converted using Table R301.2.1.3 of this code.

**TABLE R301.2.1.3**
**CONVERSION OF EQUIVALENT BASIC SPEEDS [a, b, c]**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $V_{eff\text{-}ult}$ | 107 | 114 | 120 | 126 | 133 | 139 | 152 | 158 | 164 | 177 | 183 | 190 | 202 | 215 |
| $V_{eff\text{-}asd}$ | 85 | 90 | 95 | 100 | 105 | 110 | 120 | 125 | 130 | 140 | 145 | 150 | 160 | 170 |
| $V_{fm}$ | 71 | 76 | 80 | 85 | 90 | 95 | 104 | 109 | 114 | 123 | 128 | 133 | 142 | 152 |

For SI: 1 mile per hour = 0.447 m/s.

a. Linear interpolation is permitted.

b. $V_{eff\text{-}asd}$ = Effective nominal design wind speed applicable to methods specified in Exceptions 1 through 5 of Section 1609.1.1 of the International *Building* Code. $V_{eff\text{-}asd} = 0.791\ V_{eff\text{-}ult}$ $V_{eff\text{-}ult}$ = Effective ultimate design wind speed from Table R301.2(8) of this code.

(26) Amending Section R302.3. Section R302.3 is amended by adding Exception 3 to read:

3. An Accessory Dwelling Unit (ADU) created within an existing dwelling unit shall be permitted to be separated from the primary dwelling unit with a single layer of 5/8-inch Type X gypsum board or the equivalent fire resistive construction on the walls and ceilings on the ADU portion.

(27) Amending Section R303.1. The first paragraph of Section R303.1 is amended to read:

**R303.1 Natural light and ventilation.** All guest rooms and habitable rooms shall have an aggregate glazing area of not less than 10 percent of the floor area of such rooms. Natural *ventilation* shall be in accordance with the *Housing Code*.

(28) Amending Section R303.4. Section R303.4 is amended to read:

**R303.4 Mechanical ventilation.** Mechanical ventilation shall be as specified in the *Housing Code*.

(29) Deleting Section R306. Section R306 is deleted in its entirety and replaced with a new Section R306 to read:

**SECTION R306**
**SANITATION**

Sanitation shall be as specified in ROH Chapter 16A, the Housing Code.

(30) Amending Section R309.2. Section R309.2 is amended to read:

**R309.2 Carports.** Carport floor surfaces shall be of approved noncombustible material.

The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

**Exceptions:**

1. Asphalt surfaces shall be permitted at ground level in carports.

2. A carport on a hillside lot serving a detached single-family dwelling may have wood floor planking at least 2 inches (51 mm) in nominal thickness laid with at least 1/4-inch (6.4 mm) spacing between the planks.

(31) Amending Section R309.3. Section R309.3 is amended to read:

**R309.3 Flood hazard areas.** See ROH Chapter 16, Article 11, and ROH Chapter 21A.

(32) Amending Section R310.1. Section R310.1 is amended by adding Exception 3 to read:

3. Non-safety glazed glass jalousie bladed windows may be used for emergency escape or rescue.

(33) Amending Section R311.7.1. Section R311.7.1 is amended by adding Exception 2 to read:

2. Private stairways serving an occupant load of less than five persons shall not be less than 30 inches (762 mm) in width.

(34) Amending Section R313.2. Section R313.2 is amending by adding Section R313.2.2 to read:

**R313.2.2 Sprinkler Equivalency Requirements for Access Road and Firefighting Water Supply.** The installation of a fire sprinkler system shall only be required for new homes where a sprinkler equivalency for fire access road or water supply is needed. Any renovation or addition to an existing one- and two-family dwelling that is not creating a new stand-alone dwelling unit is still considered exempt from requiring a fire sprinkler system. The sprinkler equivalency will be required if the fire department access and/or water supply does not meet the requirements of ROH Chapter 20. The sprinkler equivalency requirements include the following conditions:

(a) Fire hydrants shall be provided for detached one- and two-family dwellings in accordance with both of the following criteria:

(1) The maximum distance to a fire hydrant from the closest point on the building shall not exceeds 600 feet (183 meters), and

(2) The distance between fire hydrants shall not exceed 800 feet (244 meters).

(b) When Fire Department Access and Water Supply requirements of NFPA 1 2018 edition Chapter 18, as amended are not met, the applicant may request approval for an equivalency to install an NFPA 13D automatic sprinkler system.

**Exceptions:** Where approved by the *Fire Official*.

(35) Amending Sections R317.1 and R317.3.1. Sections R317.1 and R317.3.1 are amended to read:

**R317.1 Location required.** Protection of wood and wood-based products from decay shall be provided in the following locations by the use of wood that is

preservative-treated in accordance with AWPA U1.

**R317.3.1 Fasteners for preservative-treated wood.** Fasteners for non-borate pressure preservative and fire-retardant-treated wood shall be of hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze, or copper. The coating weights for zinc-coated fasteners shall be in accordance with ASTM A 153.

**Exceptions:**

1. One-half-inch (12.7 mm) diameter or greater steel bolts.

2. Fasteners other than nails and timber rivets shall be permitted to be of mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B695, Class 55 minimum.

(36) Amending Section R317. Section R317 is amended by adding Section R317.5 to read:

**R317.5 Glued laminated, engineered or composite structural members.** For the portions of these structural members that form the structural supports of a building or other structure, which are structural glued laminated members made up of dimensional lumber, engineered wood products, or structural composite lumber, pressure treated in accordance with AWPA U 1 (UC1 through UC4B) or by Light Oil Solvent Preservative (LOSP) treatment standard as approved by the *building official*. Water based treatment processes are not allowed to be used on these products unless specified by a structural engineer for use with reduced load values.

(37) Amending Section R317. Section R317 is amended by adding Section R317.6 to read:

**R317.6 Under-floor clearance.** Minimum clearance between the bottom of floor joists or bottom of floors without joists and the ground beneath shall be 24 inches (610 mm); the minimum clearance between the bottom of girders and the ground shall be 18 inches (457 mm).

**Exception:** Open slat wood decks shall have ground clearance of at least 6 inches (152 mm) for any wood member. Accessible under-floor areas shall be provided with a minimum 14 inches x 24 inches (356 mm x 610 mm) access opening.

Accessible under-floor areas shall be provided with a minimum 18-inch (457 mm) by 24-inch (610 mm) access opening, effectively screened or covered. Pipes, ducts and other construction shall not interfere with the accessibility to or within under-floor areas. See Section M1305.1.3 for access requirements where mechanical equipment is located under floors.

(38) Amending Section R318.1.1. Section R318.1.1 is amended by adding a second paragraph to read:

All lumber less than 2 inches (51 mm) in nominal thickness shall be identified per bundle by means of a label consisting of the above requirements. Labels measuring no less than 6 inches x 8 inches (152 mm x 203 mm) shall be placed on the lower left corner of the strapped bundle.

(39) Amending Section R318.1. Section R318.1 is amended by adding Section R318.1.3 to read:

**R318.1.3 Structure protection.** Where the plates, sills, and structural lumber of new wood frame buildings are supported directly on the ground by:

1. A concrete slab or foundation, the soil beneath the building shall be either:

1.1 Chemically treated at the maximum label rate for control of Formosan subterranean termites by a licensed pest control operator, or

1.2 Basaltic Termite Barrier (BTB), stainless steel termite barrier mesh, or other termite barrier approved by the *building official*, installed according to the manufacturer's installation instructions.

2. The perimeter of the structure shall be protected by either:

2.1 A continuous chemical barrier applied at the maximum label rates by an operator licensed to control ground termites to the backfill in 12 inches (305 mm) lifts in a band extending at least 12 inches (305 mm) beyond the concrete; or

2.2 A continuous barrier of BTB at least 4 inches (102 mm) in thickness extending at least 6 inches (152 mm) beyond the concrete slab.

3. A poured-in-place concrete foundation wall, the foundation wall shall be protected from the adjacent soil by either:

3.1 A continuous chemical barrier applied at the maximum label rates by an operator licensed to control ground termites to the backfill in 12 inches (305 mm) lifts in a band extending at least 12 inches (305 mm) beyond the concrete; or

3.2 A continuous barrier of BTB at least 6 inches (152 mm) in thickness extending the full height of the retained soil; or

3.3 An approved stainless steel termite barrier mesh shall protect all cracks and joints.

4. A CMU foundation wall, the foundation wall shall be protected from the adjacent soil by either:

4.1 A continuous barrier of BTB at least 6 inches (152 mm) in thickness extending the full height of the retained soil;

4.2. An approved stainless steel termite barrier mesh between the top of the CMU and all wood framing; or

4.3 A continuous cap or reinforced concrete at least 4 inches (102 mm) in thickness between the top of the CMU and all wood framing.

**Exception:** When a CMU foundation wall forms a retaining wall that is part of a wood frame structure, the CMU shall be protected from the soil by a full barrier of BTB or stainless steel termite barrier.

(40) Amending Section R318.2. Section R318.2 is amended to read:

**R318.2 Chemical termiticide treatment.** Chemical termiticide treatment shall include soil treatment and/or field applied wood treatment. The concentration, rate of application, and method of treatment of the chemical termiticide shall be in strict accordance with the termiticide label. Chemical treatment shall be applied at the maximum label rate for control of Formosan subterranean termites by a licensed pest control operator. There shall be a continuous chemical barrier applied at the maximum label rates, by an operator licensed to control ground

termites, to the finished grade in a band extending at least 12 inches (305 mm) beyond the concrete.

(41) Amending Section R318.3. Section R318.3 is amended to read:

**R318.3 Barriers.** Approved physical barriers, such as metal or plastic sheeting or collars specifically designed for termite prevention, Basaltic Termite Barrier (BTB), stainless steel termite barrier mesh, or other termite barrier approved by the *building official*, installed according to the manufacturer's installation instructions, shall be installed in manner to prevent termites from entering the structure. Shields placed on top of an exterior foundation wall are permitted to be used only if in combination with another method of protection.

(42) Amending Section R322.2. Section R322.2 is amended to read:

**R322.2 Flood hazard areas.** All areas that have been determined to be located within areas of special flood hazard shall be in accordance to ROH Chapter 21A.

(43) Amending Section R323.1. Section R323.1 is amended to read:

**R323.1 General.** This section applies to the construction of storm shelters when constructed as separate detached buildings or when constructed as safe rooms within buildings for the purpose of providing safe refuge from storms that produce high winds, such as tornados and hurricane. In addition to other applicable requirements in this code, storm shelters shall be constructed in accordance with ICC/NSSA-500 or ROH Chapter 16, Article 13.

(44) Amending Chapter 3. Chapter 3 is amended by adding Sections R328 and R328.1 through R328.4 to read:

**R328 Light-transmission plastic roof structures.** Awnings, patio covers, carports and similar structures. Roofed structures constructed of light-transmitting plastics shall comply with this section.

**R328.1 Specifications.** Light-transmitting plastics, including thermoplastic, thermosetting or reinforced thermosetting plastic material shall have a self-ignition temperature of 650°F (343°C) or greater where tested in accordance with ASTM D 1929, a smoke-development index not greater than 450 where tested in the manner intended for use in accordance with ASTM E 84 or UL 723, or a maximum average smoke density rating not greater than 75 where tested in the

thickness intended to be used in accordance with ASTM D 2843 and shall conform to one of the following combustibility classifications.

(a) Class CC1: Plastic materials that have a burning extent of 1 inch (25 mm) or less where tested at a nominal thickness of 0.060 inches (1.5 mm), or in the thickness intended for use, in accordance with ASTM D 635.

(b) Class CC2: Plastic materials that have a burning rate of 2-1/2 inches per minute (1.06 m/s) or less where tested at a nominal thickness of 0.060 inches (1.5 mm), or in the thickness intended for use, in accordance with ASTM D 635.

**R328.2 Structural requirements.** Light-transmitting plastic materials in their assembly shall be of adequate strength and durability to withstand the loads indicated in International Residential Code Section R301.6. Technical data shall be submitted to establish stresses, maximum unsupported spans and such other information for the various thickness an forms used as deemed necessary by the building official.

**R328.3 Fastening.** Fastening shall be adequate to withstand the loads in Section R301. Proper allowance shall be made for expansion and contraction of light-transmitting plastic materials in accordance with accepted data on the coefficient of expansion of the material and other material in conjunction with which it is employed.

**R328.4 Size limitation.**

(a) Swimming pool structures shall not exceed 5,000 square feet (465 $m^2$) in area and shall have a minimum fire separation distance of 10 feet (3,048 mm).

(b) Roof coverings over carports, terraces, and patios shall have a minimum fire separation distance of 6 feet (1,829 mm).

(45) Amending Section R403.1.6. Section 403.1.6 is amended by adding Section R403.1.6.2 to read:

**R403.1.6.2 Concrete Strap Type Anchors.** Concrete strap-type anchors made out of cold-formed steel shall not be used along the perimeter edges of a slab on

grade where the steel does not have at least 1-1/2 inches side cover or other adequate protection.

(46) Amending Chapter 6. Chapter 6 is amended by adding Section R611 to read:

**SECTION R611**
**WALLS WITHOUT STUDS**

**R611.1 General.** For Type V-B buildings, single-wall construction without studs may be used in accordance with this section for repairs to existing buildings of single-wall construction.

One-story and the uppermost story of wood frame Type V-B buildings may be of single-wall construction with board thickness specified in this section, without studs, when requirements of this section are met. Floor to ceiling height shall not exceed 8 feet (2,438 mm).

Any provision of this code to the contrary notwithstanding, studding of not less than 2-inch x 3-inch (51 mm x 76 mm) may be used on one-story buildings of double-wall construction.

When wood-frame dwellings are supported by posts, 2-inch x 4-inch (51 mm x 102 mm) foundation bracing shall be provided.

For one-story conventional residential structures, the local practice of using foundation blocks with termite shields shall be acceptable in all areas except in flood hazard areas and developments adjacent to drainage facilities as specified in ROH Section 16-11.1.

**R611.2 Board for Single-Wall Construction.**

**R611.2.1 One and One-Eighth Inch Boards.** Single-wall construction with boards of 1-1/8 inch (28.6 mm) net thickness are not required to have girts.

**R611.2.2 One-Inch Boards.** Where single-wall construction is with boards of 1-inch thickness (25 mm), no girt is required, provided approved stiffeners for any section of such wall are spaced not more than 10 feet (3,048 mm) along the wall.

**R611.2.3 Three-Fourths-Inch Boards.** Single-wall construction with boards of 3/4-inch (19 mm) net thickness shall have girts and cross partitions at least every 30 feet (9,144 mm).

**R611.2.4 Approved Stiffeners.** Approved stiffeners shall be studs at least 2-inches x 4-inches (51 mm x 102 mm), full height window or door jambs, posts, walls or partitions at right angles to the section of wall under construction.

**R611.2.5 Girts.** Girts for single-wall construction shall be not less than 2-inch x 6-inch (51 mm x 152 mm) belt course or other approved strengthening about mid height between the floor and ceiling on all exterior walls.

**R611.2.6 Complete Load Path.** Blocking, bridging, straps, approved framing anchors or mechanical fasteners shall be designed and installed to provide continuous ties from the roof to the foundation system. Sheet metal clamps, ties or clips, shall be formed of ASTM A153 G90 galvanized steel or other approved corrosion-resistant material not less than 0.040-inch (1 mm) nominal thickness. Uplift resistance shall be in accordance with International Residential Code Table R802.11.

(47) Amending Section R903.4.1. Section R903.4.1 is amended to read:

**R903.4.1 Secondary (emergency overflow) drains or scuppers.** Where roof drains are required, secondary emergency overflow drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water shall be entrapped if the primary drains allow buildup for any reason. Overflow drains having the same size as the roof drains shall be installed with the inlet flow line located 2 inches (51 mm) above the low point of the roof, or overflow scuppers having three times the size of the roof drains and having a minimum opening height of 4 inches (102 mm) shall be installed in the adjacent parapet walls with the inlet flow located 2 inches (51 mm) above the low point of the roof served. Installation shall be in accordance with the *Plumbing Code*.

(48) Deleting Chapter 11. Chapter 11 is deleted in its entirety and replaced with a new Chapter 11 to read:

# A BILL FOR AN ORDINANCE

## CHAPTER 11
## ENERGY EFFICIENCY

See ROH Chapter 16B.

(49) Amend Section M1201. Section M1201 is amended to read:

**M1201.1 Scope.** The provisions of Chapters 12 through 24 should only be considered a guide and are not mandatory.

(50) Amend Part VII. Part VII is amended to read:

***Part VII—Plumbing***

Part VII, which corresponds to Chapter 25 through 33, is deleted in its entirety. Refer to ROH Chapter 19.

(51) Amend Chapters 35 through 43. Chapters 35 through 43 have been amended to read:

**Chapters 35 through 43 Electrical.** Chapters 35 through 43 are deleted in their entirety. Refer to ROH Chapter 17.

(52) Amending Chapter 44. Chapter 44 (Reference Standards-AISI S230) is amended to read:

| Standard reference number | Referenced code Title number | In section |
|---|---|---|
| ACI 318, Section 19.3.2.1 | Modify ACI 318 Table 19.3.2.1 as follows: Change the Maximum w/cm ratio for Exposure Class CI to 0.50. Concrete with demonstrated equivalent performance is acceptable in lieu of prescriptive mixture proportions for Exposure Class C1 and C2.<br><br>Exposure Class C1 and C2. Exposure Class C1 and C2 shall apply to any exposed concrete within 600 feet from a shoreline when light gauge metal frame is used. Exposed concrete is defined as any concrete that is not enclosed within a building envelope. | |

| | |
|---|---|
| ACI 318<br>Section 20.7.6 | ACI 318, Section 20.7.6 Anchor Bolts at the Perimeter Edge of a Slab on Grade. Anchor bolts shall be hot dipped galvanized in accordance with ASTM F2329 and have a minimum concrete side cover of 1-1/2 inches unless provisions have been made to protect the anchor bolts from corrosion. |
| AISI S230 | Standard for Cold-formed Steel Framing-Prescriptive Method for One- and Two-*Family* Dwellings……R301.1.1, R301.2.1.1, R301.2.2.3.1 R301.2.2.7, R301.2.2.8 R603.6, R603.9.4.1, R603.9.4.2, R608.9.2, R608.9.3, Figure R608.9(11), R608.10 |

(53) Amending Section T101.1. Section T101.1 is amended by adding an Exemption to read:

**Exemption:** A new single-family dwelling that receives a variance from the chief energy officer of the Hawaii State Energy Office."

SECTION 4. Chapter 16, Article 9, Revised Ordinances of Honolulu 2021 ("Adoption of the International Existing Building Code"), is repealed.

SECTION 5. Chapter 16, Revised Ordinances of Honolulu 2021 ("Building Code"), is amended by adding a new Article 9 to read as follows:

"**ARTICLE 9: ADOPTION OF THE HAWAII STATE EXISTING BUILDING CODE**

**§ 16-9.1 Adoption of the Hawaii State Existing Building Code.**

The Hawaii State Existing Building Code adopted by the State of Hawaii on November 17, 2020, which adopts with modifications the 2018 edition of the International Existing Building Code as published by the International Code Council, Inc., 500 New Jersey Avenue, NW, 6th Floor, Washington, DC 20001, is adopted by reference and made a part hereof, subject to the following amendments.

(1) Amending Section 101.2. Section 101.2 is amended by deleting the Exception.

(2) Amending Section 101.4.2. Section 101.4.2 is amended to read:

**[A] 101.4.2 Buildings previously occupied.**

The legal occupancy of an existing building currently in existence on the date of the adoption of this code shall be permitted to continue without change, except

as covered in this code, the Fire Code, or as deemed necessary by the code official for the general safety and welfare of the occupants and the public.

(3) Amending Section 101.7. Section 101.7 is amended to read:

**[A] 101.7 Correction of violations of other codes.**

*Repairs* or *alterations* mandated by the Building, Housing, or Fire Codes or mandated by any ordinance adopted pursuant to law shall conform only to the requirements of that code, or ordinance and shall not be required to conform to this code unless the code requiring such *repair* or *alteration* so provides.

(4) Deleting Sections 103 through 115. Sections 103 through 115 are deleted.

(5) Amending Section 116. Section 116 is amended to read:

**Section 116 EMERGENCY MEASURES.**

See ROH Chapter 16, Article 1, Section 115 – UNSAFE BUILDINGS.

(6) Amending Section 117.2. Section 117.2 is amended to read:

**Section 117.2 DEMOLITION.**

Section 117.2. See ROH Chapter 16A, Article 10.

(7) Amending Section 202. Section 202 is amended to read:

(A) Adding the following definition to read:

"**CITY.**" The City and County of Honolulu.

(B) Amending the definition of "CODE OFFICIAL" to read:

"**CODE OFFICIAL.**" The director of planning and permitting of the City or the director's authorized representative.

(C) Amending the definition of "SUBSTANTIAL IMPROVEMENT" to read:

"**SUBSTANTIAL IMPROVEMENT.**" Has the same meaning as defined in ROH Chapter 21A.

(8) Amending Section 301.3.1. Section 301.3.1 is amended to read:

**301.3.1 Prescriptive compliance method**. *Repairs*, *alterations*, *additions* and *changes of occupancy* complying with International Existing Building Code Chapter 5 and the International Fire Code shall be considered in compliance with the provisions of this code.

(9) Amending Section 302.3. Section 302.3 is amended to read:

**302.3 Additional codes.** *Alterations, repairs, additions* and *changes of occupancy* to, or relocation of, *existing buildings* and structures shall comply with the provisions for *alterations, repairs, additions* and *changes of occupancy* or relocation, respectively, in this code and ROH Chapter 16B Building Energy Conservation Code, ROH Chapter 20, Fire Code of the City and County of Honolulu, ROH Chapter 19, Plumbing Code, and ROH Chapter 17, Electrical Code. Where provisions of the other codes conflict with provisions of this code, the provisions of this code shall take precedence.

(10) Amending Section 502.6. Section 502.6 is amended to read:

**502.6 Smoke alarms in existing portions of a building.** Where an addition is made to a building or structure of a Group R or I-1 occupancy, the existing building shall be provided with smoke alarms in accordance with Section 502.6.1 through 502.6.3 of this code.

(11) Amending Section 502.6. Section 502.6 is amended by adding Sections 502.6.1 through 502.6.3 to read:

**502.6.1 Single- and multi-station smoke alarms.** Existing Group I-1 and R occupancies shall be provided with single-station smoke alarms.

**Exceptions:**

1. Where the code that was in effect at the time of construction required smoke alarms and smoke alarms complying with those requirements are already provided.

2. Where smoke alarms have been installed in occupancies and dwellings that were not required to have them at the time of construction, additional smoke alarms shall not be required; provided that the existing smoke alarms comply with requirements that were in effect at the time of installation.

3. Where smoke detectors connected to a fire alarm system have been installed as a substitute for smoke alarms.

**502.6.2 Interconnection.** Where more than one smoke alarm is required to be installed within an individual *dwelling* or *sleeping unit,* the smoke alarms shall be interconnected in such a manner that the activation of one alarm shall activate all of the alarms in the individual unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

**Exceptions:**

1. Interconnection is not required in buildings that are not undergoing *alterations*, repairs or construction of any kind.

2. Smoke alarms in existing areas are not required to be interconnected where *alterations* or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or *basement* available which could provide access for interconnection without the removal of interior finishes.

**502.6.3 Power source.** Single-station smoke alarms shall receive their primary power from the building wiring; provided that such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system. Smoke alarms shall emit a signal

when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

**Exceptions:**

1. Smoke alarms are permitted to be solely battery operated in existing buildings where no construction is taking place.

2. Smoke alarms are permitted to be solely battery operated in buildings that are not served from a commercial power source.

3. Smoke alarms are permitted to be solely battery operated in existing areas of buildings undergoing *alterations* or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or *basement* available which could provide access for building wiring without the removal of interior finishes.

(12) Deleted Chapters 12 through 23. Chapters 12 through 23 are deleted in their entirety."

SECTION 6. Chapter 16, Article 13, Revised Ordinances of Honolulu 2021 ("Hawaii Residential Safe Room"), is repealed.

SECTION 7. Chapter 16, Revised Ordinances of Honolulu 2021 ("Building Code"), is amended by adding a new Article 13 to read as follows:

"**ARTICLE 13: HAWAII RESIDENTIAL SAFE ROOM**

**§ 16-13.1 Performance-based design criteria.**

The residential safe room must meet the performance-based design criteria's minimum performance specifications of this article.

**§ 16-13.2 Intent and scope.**

The intent of the residential safe room is to temporarily provide an enhanced protection area, fully enclosed within a dwelling or within an accessory structure to a residence, which is designed and constructed to withstand the wind pressures, windborne debris impacts, and other requirements of this section.

**§ 16-13.3 Alternative standards.**

(a) *Manufactured safe room designs subject to approval.* A manufactured safe room or safe room kit may be substituted if documentation is submitted and approved by the building official. The safe room must be engineered, tested, and manufactured to meet or exceed the criteria of this section.

(b) *FEMA in-residence shelter designs permitted.* It is permissible to build FEMA In-Residence Shelters of up to 64 square feet of floor area with walls up to 8 feet long that are built in accordance with construction details of FEMA 320.

(c) In addition to other applicable requirements in this code, storm shelters must be constructed in accordance with ICC-500 and this article and Article 14.

**§ 16-13.4 Site criteria.**

Residential safe rooms must not be constructed within areas subject to stream flooding, coastal flooding, or dam failure inundation within any of the following areas:

(a) FEMA Special Flood Hazard Areas (SFHA) subject to rainfall runoff or stream or flash flooding;

(b) Coastal zones "V" or "A" identified in the Flood Insurance Rate Map (FIRM) issued by FEMA for floodplain management purposes, in which the flood hazard are tides, storm surge, waves, tsunamis, or a combination of these hazards; and

(c) Areas subject to dam failure inundation as determined by the State department of land and natural resources.

**§ 16-13.5 Size of safe room.**

The safe room must be designed to provide a minimum of 7 square feet per person for one- and two-family dwellings and 10 square feet per person for other types of dwellings, based on usable floor area. Usable floor area is defined as the protected occupant area between the safe room walls at the level of fixed seating, where fixed seating exists, minus the area of sanitary facilities or other items that impede usage of the safe room area. Occupant load for a dwelling must not be less than the number of

bedrooms plus one. The room does not need to exceed 120 square feet.

**§ 16-13.6 Provisions for exiting.**

The safe room must be equipped with an impact protected, inward-swinging interior door or exterior door suitable for a means of exiting in an emergency.

**§ 16-13.7 Design for dead, live, wind, rain, and impact loads.**

(a) *Structural integrity criteria.*

(1) The residential safe room must be built with a complete structural system and a complete load path for vertical and lateral loads caused by gravity and wind.

(2) The ceiling structure and wall must be capable of supporting a superimposed debris dead load of the full weight of any building floors and roof above, but not less than 60 psf.

(3) The residential safe room enclosure must be capable of simultaneously resisting lateral and uplift with pressures corresponding to a 145 mph 3-second peak gust ultimate design wind speed, determined in accordance with ASCE-7, Minimum Design Loads for Buildings and Other Structures. The site exposure factor must be based on exposure C or the exposure zone shown in State Building Code Appendix W Figure 1609.4, whichever is greater. The values for the gust factor and the directionality factor must be taken as 0.85. Topographic wind amplification caused by mountainous terrain must be considered in accordance with the building code. Internal pressure must be determined in accordance with ASCE-7.

(b) *Windborne debris impact protection of building enclosure elements*. The exterior walls, vents, openings, fixed or operable windows, and entry doors into the safe room, must meet or exceed Level D requirements of ASTM E 1996 (Table 422.5-1), or be an approved assembly listed in this article. The interior walls, doors, openings, and ceilings into the safe room must meet or exceed Level C requirements of ASTM E 1996 (Table 422.5-1), or be an approved assembly listed in State Building Code Appendix U Section 429.5.2. Any exterior wall penetrations greater than 36 square inches must be considered an opening.

(c) *Debris impact and cyclic pressure loading of glazing and protective systems*. Impact protective systems must meet the ASTM E 1996 cyclic pressure requirement for the loading given in Table 16.13.1.

**Table 16.13.1**
**Windborne Debris Protection and Cyclic Pressure Criteria for Residential Safe Rooms**

| ASTM E 1996 MISSILE LEVEL RATING | DEBRIS MISSILE SIZE | DEBRIS IMPACT SPEED | ENCLOSURE WALL CEILING, AND FLOOR CYCLIC AIR PRESSURE TESTING – MAXIMUM INWARD AND MAXIMUM OUTWARD PRESSURES, $V_{eff-asd}$ |
|---|---|---|---|
| C | 2 x 4 weighing 4.5 lb. +/- 0.25 lb., and with min. length 4 ft. +/- 4-inch | 40 ft./sec. or at least 27 mph | 35 psf inward and outward |
| D | 2 X 4 weighing 9.0 lb. +/- 0.25 lb., and with min. length 8 ft. +/- 4-inch | 50 ft./sec. or at least 34 mph | 35 psf inward<br>45 psf outward |

(d) *Approved Debris Impact Resistant Exterior Wall Assemblies.* Wall assemblies constructed in accordance with Table 16-13.7(d) are deemed to comply with § 16-13.7(b).

| ***Table 16-13.7(d) Wall Assemblies Complying with § 16-13.7(b)*** |
|---|
| Wall Assemblage |
| 3/4-inch plywood on 2 x 4-inch or larger wood studs spaced at 16 inches, on-center with #8 x 3-inch wood screws at 6 inches on-center. |
| 3/4-inch plywood on 350S162-33 or greater studs spaced at 16 inches on-center with #8 sheet metal screws at 6 inches on-center. |
| 8-1/4-inch cementitious lap siding over 22-gage sheet metal attached to 350S-162-33 or greater studs spaced at 24 inches on-center. |

| |
|---|
| 8-1/4-inch cementitious lap siding attached to 350S-162-33 or greater studs spaced at 24 inches on-center studs with interior 3/4-inch interior plywood sheathing. |
| 8-1/4-inch cementitious lap siding attached to 350S-162-33 or greater studs spaced at 24 inches on-center with1/2-inch interior 22-gage sheet metal composite gypsum wallboard. |
| 8-1/4-inch cementitious lap siding attached to 2 x 4-inch or larger wood studs spaced at 16 inches on-center with 1/2-inch interior 22-gage sheet metal composite gypsum wallboard. |
| 8-1/4-inch cementitious lap siding attached to 2 x 4-inch or larger wood studs spaced at 16 inches on-center with 22-gage sheet metal and 1/2-inch interior gypsum wallboard. |
| Cementitious lap siding attached to 5/8-inch structural plywood on 2 x 4-inch or larger wood studs spaces at 16 inches on-center. |
| Cementitious lap siding attached to 5/8-inch structural plywood on 2 x 4-inch or larger or 363S-137-43 or greater steel studs spaced at 16 inches on-center. |
| EFS with 1/2-inch dens-glass exterior sheathing on 362S-137-43 or greater steel studs spaced at 16 inches on-center and 1/2-inch interior gypsum wallboard. |
| 24-gage steel sheet (50 ksi) on girts. |
| Concrete with a thickness of 4 inches with reinforcing. |
| Concrete masonry units with a thickness of 6 inches with partial grouting and reinforcing spaced at 24 inches on-center |
| Concrete masonry units with a thickness of 8 inches with partial grouting and reinforcing spaced at 24 inches on-center. |
| Interior or exterior wall with laterally braced 2 x 4-inch or larger wood studs with sheathing on either side 22-gage sheet metal. |

Sheathing must be attached to studs with fasteners at 6 inches (152 mm) on center for edge and field fastening. Door frames and windows must be fastened to structural members on all sides with a maximum fastener spacing of 6 inches, not to exceed 4 inches from the corners, designed in accordance with the pressures of Table 16-13.1.

(e) *Approved Debris Impact Resistant Interior Wall Assemblies*. Wall assembly construction methods in accordance with Table 16-13.7(e) are deemed to comply with State Building Code Appendix U Section 429.5.2 when sheathing is installed on the debris impacted side of the safe room wall:

| ***Table 16-13.7(e) Wall Assembly Methods Complying with State Building Code Appendix U Section 429.5.2*** |
|---|
| Wall Assemblage |
| 1/2-inch plywood on 2 x 4 or larger wood studs spaced at 16 inches on-center with #8 x 3-inch wood screws at [~~six~~] 6 inches on-center. |
| 1/2-inch plywood on 350S162-33 or greater metal studs spaced at 16 inches on-center with #8 sheet metal screws at 6 inches on-center. |
| 5/8-inch plywood on 350S162-33 or greater metals studs spaced at 24 inches on-center with #8 sheet metal screws at 6 inches on-center. |
| 1/2-inch interior 22-gage sheet metal composite gypsum wallboard on 2 x 4 or larger wood studs spaced at 16 inches on-center with #8 x 3-inch wood screws at 6 inches on-center. |
| 1/2-inch interior 22-gage sheet metal composite gypsum wallboard on 350S162-33 or larger metal studs spaced at 16 inches on-center with #8 sheet metal screws at 6 inches on-center. |
| Interior doors with 5/8-inch plywood or solid wood panels with three hinges and double latching mechanism. |

Sheathing must be attached to studs with fasteners at 6 inches (152 mm) on center for edge and field fastening. Door frames and windows must be fastened to structural members on all sides with a maximum fastener spacing of 6 inches and not to exceed 4 inches from the corners, designed in accordance with the pressures of Table 16-13.1.

(f) *Approved Debris Impact Resistant Interior Ceiling Assemblies*. Wall assembly construction methods in accordance with Table 16-13.7(f) shall be deemed to comply with State Building Code Appendix U Section 429.5.2.

| ***Table 16-13.7(f) Wall Assembly Methods Complying with State Building Code Appendix U Section 429.5.2*** |
|---|
| Wall Assemblage |
| 1/2-inch plywood on either side of ceiling joists spaced at 24 inches on-center with #8 x 3-inch wood screws at 6 inches on-center. |
| 1/2-inch interior 22-gage sheet metal composite gypsum wallboard on either side of ceiling joists spaced at 24 inches on-center with #8 x 3-inch wood screws at 6 inches on-center. |

Sheathing must be attached to ceiling joists with fasteners at 6 inches (152 mm) on center for edge and field fastening. Door frames and windows must be fastened to structural members on all sides with a maximum fastener spacing of 6 inches and not to exceed 4 inches from the corners, designed in accordance with the pressures of Table 16-13.1.

**§ 16-13.8 Ventilation.**

The residential safe room must be naturally ventilated to allow the enclosure to have approximately one air change every two hours. This requirement may be satisfied by a total of 12 square inches of venting per occupant. There must be at least two ventilation sources. The requirements for natural and mechanical must be in accordance with Chapter 16A.

**§ 16-13.9 Construction documents.**

Construction documents for the residential safe room must be directly prepared by a Hawaii-licensed structural engineer.

**§ 16-13.10 Special inspection.**

The construction or installation of the residential safe room must be verified for conformance to the drawings in accordance with the appropriate requirements of International Building Code Chapter 17."

SECTION 8. Chapter 16, Article 14, Revised Ordinances of Honolulu 2021 ("State- and City-Owned High Occupancy Buildings—Design Criteria for Enhanced Hurricane Protection Areas"), is repealed.

SECTION 9. Chapter 16, Revised Ordinances of Honolulu 2021 ("Building Code"), is amended by adding a new Article 14 to read as follows:

**"ARTICLE 14: ADOPTION OF THE STATE- AND CITY-OWNED HIGH OCCUPANCY BUILDINGS—DESIGN CRITERIA FOR ENHANCED HURRICANE PROTECTION AREAS**

**§ 16-14.1 Intent.**

The purpose of this article is to establish minimum life safety design criteria for enhanced hurricane protection areas within high occupancy State- or county-owned

buildings permitted to be occupied during hurricanes of up to Saffir Simpson Category 3.

**§ 16-14.2 Scope.**

This article applies to Risk Category III and IV buildings defined by International Building Code Table 1604.5, for the following specific occupancies:

(1) Enclosed and partially enclosed (covered) structures whose primary occupancy is public assembly with an occupant load greater than 300;

(2) Health care facilities with an occupant load of 50 or more resident patients, but not having surgery or emergency treatment facilities;

(3) Any other State- or county-owned building with an occupant load greater than 5,000 people; and

(4) Hospitals and other health care facilities having surgery or emergency treatment facilities.

**Exception:** Facilities located within Flood Zone V and Flood Zone A that are designated by the owner to be evacuated during hurricane warnings declared by the National Weather Service, shall not be subject to these requirements.

**§ 16-14.3 Site criteria.**

(a) *Comply with ASCE 24-14, Flood Resistant Design and Construction, based on provisions for Risk Category III*.

(1) Floor slab on grade must be 1.5 feet above the base flood elevation of the county's flood hazard map, or a higher elevation as determined by a modeling methodology that predicts the maximum envelope and depth of inundation including the combined effects of storm surge and wave actions with respect to a Category 3 hurricane, nor less than the flood elevation associated with a 500-year mean recurrence interval.

(2) Locate outside of V and Coastal A flood zones unless justified by site-specific analysis or designed for vertical evacuation in accordance with a method approved by the building official. When a building within a V or Coastal A flood zone is approved, the bottom of the lowest structural

framing member of any elevated first floor space must be 2 feet above the base flood elevation of the county's flood hazard map, or at higher elevation as determined by a modeling methodology that predicts the maximum envelope and depth of inundation including the combined effects of storm surge and wave actions with respect to a Category 3 hurricane, nor less than the flood elevation associated with a 500-year mean recurrence interval.

(b) *Emergency vehicle access.* Provide at least one route for emergency vehicle access. The portion of the emergency route within the site must be above the 100-year flood elevation.

(c) *Landscaping and utility laydown impact hazards*. Landscaping around the building must be designed to provide standoff separation sufficient to maintain emergency vehicle access in the event of mature tree blowdown. Trees must not interfere with the functioning of overhead or underground utility lines, nor cause laydown or falling impact hazard to the building envelope or utility lines.

(d) *Adjacent buildings*. The building must not be located within 1,000 feet of any hazardous material facilities defined by International Building Code Table 1604.5. Unanchored light-framed portable structures must not be permitted within 300 feet of the building, unless the windborne debris hazard of the portable structure uplift is mitigated.

**§ 16-14.4 Enhanced hurricane protection area program requirements.**

(a) *Applicable net area*. At least 50 percent of the net square feet of a facility must be constructed to qualify as an enhanced hurricane protection area. The net floor area is determined by subtracting from the gross square feet the floor area of excluded spaces, exterior walls, columns, fixed or movable objects, equipment or other features that under probable conditions cannot be removed or stored during use as a storm shelter.

(b) *Excluded space*s. Spaces such as mechanical rooms, electrical rooms, storage rooms, attic and crawl spaces, must not be considered as net floor area permitted to be occupied during a hurricane.

(c) *Occupancy capacity*. The occupancy capacity is determined by dividing the net area of the enhanced hurricane protection area by 15 square feet net floor area per person.

(d) *Toilets and hand washing facilities*. Toilet and hand washing facilities must be located and accessible from within the perimeter of the enhanced hurricane protection area.

(e) *Accessibility*. Where the refuge occupancy accommodates more than 50 persons, provide an ADA-accessible route to a shelter area at each facility with a minimum of one wheelchair space for every 200 enhanced hurricane protection area occupants determined in accordance with § 16-14.4(c).

**§ 16-14.5 Design wind, rain, and impact loads.**

(a) *Structural design criteria*. The building main wind force resisting system and structural components must be designed per ASCE 7 for a 145 mph minimum peak 3-second gust ultimate design wind speed.

Topographic and directionality factors must be the site-specific values determined per State Building Code Appendix W. Design for interior pressure must be based on the largest opening in any exterior facade or roof surface.

(b) *Windborne debris missile impact for building enclosure elements*. Exterior glazing and glazed openings, louvers, roof openings and doors must be provided with windborne debris impact resistance or protection systems conforming to ASTM E1996-14 Level D, i.e., 9 lb. 2 X 4 @ 50 fps (34 mph).

(c) *Cyclic pressure loading of impact resistive glazing or windborne impact protective systems*. Resistance to the calculated maximum inward and outward pressure must be designed to conform to ASTM E1996-14.

(d) *Windows*. All unprotected window assemblies and their anchoring systems must be designed and installed to meet the wind load and missile impact criteria of this section.

(e) *Window protective systems*. Windows may be provided with permanent or deployable protective systems; provided that the protective system is designed and installed to meet the wind load and missile impact criteria and completely covers the window assembly and anchoring system.

(f) All exterior and interior doors subject to possible wind exposure or missile impact must have doors, frames, anchoring devices, and vision panels designed and installed to resist the wind load and missile impact criteria or such doors, frames, anchoring devices, and vision panels must be provided with impact protective systems designed and installed to resist the wind load and missile impact criteria of this section.

(g) *Exterior envelope*. The building enclosure, including walls, roofs, glazed openings, louvers, and doors, must not be perforated or penetrated by windborne debris, as determined by compliance with ASTM E1996-14 Level D.

(h) *Parapets*. Parapets must satisfy the wind load and missile impact criteria of the exterior envelope.

(i) *Roofs*.

(1) *Roof openings.* Roof openings (e.g., HVAC fans, ducts, skylights) must be provided with protection for the wind load and missile impact criteria of §§ 16-14.5.(b) and 16-14.5.(c).

(2) *High wind roof coverings*. Roof coverings must be specified and designed according to the latest ASTM Standards for high wind uplift forces or International Building Code Section 1507, whichever is [~~the~~] greater.

(3) *Roof drainage*. Roofs must have adequate slope, drains, and overflow drains or scuppers sized to accommodate 100-year hourly rainfall rates in accordance with International Building Code Section 1611.1 and Figure 1611.1 but not less than 2 inches per hour for 6 continuous hours.

**§ 16-14.6 Ventilation.**

(a) *Mechanical ventilation*. Mechanical ventilation as required in accordance with the International Mechanical Code. Air intakes and exhausts must be designed and installed to meet the wind load and missile impact criteria of §§ 16-14.5(i)(2) and 16-14.5(i)(3).

(b) *HVAC equipment anchorage*. HVAC equipment mounted on roofs and anchoring systems must be designed and installed to meet the wind load criteria. Roof openings for roof-mounted HVAC equipment must have a 12-inch-high curb designed to prevent the entry of rain water.

**§ 16-14.7 Standby electrical system capability.**

(a) Provide a standby emergency electrical power system per International Building Code Chapter 27 and NFPA 70 Article 700 Emergency Systems and Article 701 Legally Required Standby Systems that has the capability of being connected to an emergency generator or other temporary power source. The emergency system capabilities must include:

(1) An emergency lighting system;

(2) Illuminated exit signs;

(3) Fire protection systems, fire alarm systems and fire sprinkler systems; and

(4) Minimum mechanical ventilation for health/safety purposes.

(b) *Emergency generator*. When emergency generators are preinstalled, the facility housing the generator, permanent or portable, must be an enclosed area designed to protect the generators from wind and missile impact.

Generators hardened by the manufacturer to withstand the area's design wind and missile impact criteria must be exempt from the enclosed area criteria requirement.

**§ 16-14.8 Quality assurance.**

(a) *Information on construction documents*. Construction documents must include design criteria, the occupancy capacity of the enhanced hurricane protective

area, and Project Specifications must include opening protection devices. Floor plans must indicate all enhanced hurricane protection area portions of the facility and exiting routes therefrom. The latitude and longitude coordinates of the building must be recorded on the construction documents.

(b) *Special inspection***.** In addition to the requirements of International Building Code Chapter 17, special inspections must include at least the following systems and components:

(1) Roof cladding and roof framing connections;

(2) Wall connections to roof and floor diaphragms and framing;

(3) Roof and floor diaphragm systems, including collectors, drag struts and boundary elements;

(4) Vertical windforce-resisting systems, including braced frames, moment frames and shear walls;

(5) Windforce-resisting system connections to the foundation; and

(6) Fabrication and installation of systems or components required to meet the impact-resistance requirements of the Hawaii State Building Code Section 1609.1.2.

**Exception:** Fabrication of manufactured systems or components that have a label indicating compliance with the wind-load and impact-resistance requirements of this code.

(c) *Quality assurance plan*. A construction quality assurance program must be included in the construction documents and must include:

(1) The materials, systems, components, and work required to have special inspection or testing by the building official or by the registered design professional responsible for each portion of the work;

(2) The type and extent of each special inspection;

(3) The type and extent of each test;

(4) Additional requirements for special inspection or testing for seismic or wind resistance; and

(5) For each type of special inspection, identification as to whether it is continuous special inspection or periodic special inspection.

(d) *Peer review*. Construction documents must be independently reviewed by a Hawaii-licensed structural engineer. A written opinion report of compliance must be submitted to the Hawaii Emergency Management Agency, the building official, and the owner.

**§ 16-14.9 Compliance re-certification when altered, deteriorated, or damaged.**

Alterations must be reviewed by a Hawaii-licensed structural engineer to determine whether any alterations would cause a violation of this section. Deterioration or damage to any component of the building requires an evaluation by a Hawaii-licensed structural engineer to determine repairs necessary to maintain compliance with this section."

SECTION 10. Severability. If any provision of this ordinance, or the application thereof to any person or circumstances, is held invalid, the invalidity does not affect other provisions or applications of the ordinance that can be given effect without the invalid provision or application, and to this end the provisions of this ordinance are severable.

SECTION 11. Effective date. This ordinance will take effect on _____. Building permit applications and construction documents submitted to the building official before the effective date of this ordinance shall be reviewed for compliance with the code in effect at the time of their submission. Revisions to building permit applications and construction documents submitted to the building official before the effective date of this ordinance may comply with the building code in effect when the original application and construction documents were submitted to the building official;

# A BILL FOR AN ORDINANCE

provided that this section will not prohibit an applicant from complying with this ordinance instead of the building code in effect when a building permit application and plans were submitted to the building official.

INTRODUCED BY:

Tommy Waters (br)

DATE OF INTRODUCTION:

November 30, 2023
Honolulu, Hawai‘i

Councilmembers

APPROVED AS TO FORM AND LEGALITY:

Deputy Corporation Counsel

APPROVED this _____day of _____, 20 ___.

RICK BLANGIARDI, Mayor
City and County of Honolulu

**Report Title:**
Building Code; Residential Code; Existing Building Code; International Building Code; International Residential Code; International Existing Building Code

**Description:**
Adopts the Hawaii State Building Code, including Appendices U, W, and X, the State Residential Code, and the State Existing Building Code. Updates provisions relating to Hawaii Residential Safe Room and State- and City-Owned High Occupancy Buildings—Design Criteria for Enhanced Hurricane Protection Areas.

*The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.*