

ORDINANCE NO. 030, 2011
OF THE COUNCIL OF THE CITY OF FORT COLLINS
AMENDING CHAPTER 5, ARTICLE II, DIVISION 2, OF THE
CODE OF THE CITY OF FORT COLLINS FOR THE PURPOSE OF
AMENDING THE 2009 INTERNATIONAL BUILDING CODE AS ADOPTED

WHEREAS, the City Council has determined that it is in the best interests of the health, safety and welfare of the City and its citizens to better align Fort Collins' built environment with community goals of improved indoor environmental quality, protection of the natural environment, reduced carbon emissions, reduced energy use and reduced water use; and

WHEREAS, City staff has conducted a significant public outreach program, working with three advisory committees comprised of representatives from the residential and commercial construction industries, housing industry, real estate and appraisal industries, construction recycling industry, specialized-trade contractors, and regional code officials; and

WHEREAS, on February 2, 2011, the substance of the amendments was presented to the Electric Board, and the Electric Board recommended approval of the amendments; and

WHEREAS, on February 3, 2011, the substance of the amendments was presented to the Affordable Housing Board, and the Affordable Housing Board recommended against approval of the amendments; and

WHEREAS, on February 9, 2011, the substance of the amendments was presented to the Landmark Preservation Commission, and the Landmark Preservation Commission recommended approval of the amendments; and

WHEREAS, on February 16, 2011, the substance of the amendments was presented to the Economic Advisory Commission, and the Economic Advisory Commission recommended approval of the amendments; and

WHEREAS, on February 16, 2011, the substance of the amendments was presented to the Natural Resources Advisory Board, and the Natural Resources Advisory Board recommended approval of the amendments; and

WHEREAS, on February 17, 2011, the substance of the amendments was presented to the Water Board, and the Water Board considered water related elements and recommended approval of those amendments; and

WHEREAS, on February 24, 2011, the substance of the amendments was presented to the Building Review Board, and the Building Review Board recommended against approval of these amendments; and

WHEREAS, on February 28, 2011, the substance of the amendments was presented to the Air Quality Advisory Board, and the Air Quality Advisory Board recommended approval of these amendments; and

WHEREAS, based on input obtained through this outreach process, together with City Council and advisory board review and comment, staff has developed proposed amendments to the 2009 International Building Code ("IBC") as set forth in this Ordinance; and

WHEREAS, the City Council has determined that it is in the best interests of the health, safety and welfare of the City and its citizens that the IBC as adopted be amended.

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF FORT COLLINS as follows:

Section 1. That the opening paragraph of Section 5-27 of the Code of the City of Fort Collins is hereby amended to read as follows:

Sec. 5-27. Amendments and deletions to code.

The *2009 International Building Code* adopted § 5-26 is hereby amended to read as follows:

Section 2. That Subsection (16) of Section 5-27 of the Code of the City of Fort Collins is hereby amended by the addition of a new subparagraph which reads in its entirety as follows:

(16) **Section 202. DEFINITIONS**, is hereby amended to add the following definitions in alphabetical sequence as follows:

"The term "**COMMISSIONING**" is hereby added to read as follows:

"COMMISSIONING. A process to verify and document that the selected *building* and systems have been designed, installed, and function in accordance with the *construction documents*, manufacturers' specifications, and minimum code requirements."

"The term "**VOLATILE ORGANIC COMPOUND (VOC)**" is hereby added to read as follows:

"VOLATILE ORGANIC COMPOUND (VOC): "Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. VOCs include a variety of chemicals, some of which may have short-and long-term adverse health effects emitted as gases from certain solids or liquids."

Section 3. That Section 5-27 of the Code of the City of Fort Collins is hereby amended by the addition of a new subsection (40) which reads in its entirety as follows:

“(40) **1405.13.3 Fenestration installation.** For new construction, all *fenestration* installations shall be in accordance with American Architectural manufacturers Association (AAMA) Standards/Specifications for Windows, Doors and Skylights and shall be supervised and inspected by an individual certified as an Installation Master by Architectural Testing, Inc. (ATI), or other *approved agency*.”

Section 4. That Section 5-27 of the Code of the City of Fort Collins is hereby amended by the addition of a new subsection which reads in its entirety as follows:

A new chapter is hereby added to read as follows:

**“CHAPTER 36
SUSTAINABLE *BUILDING* CONSTRUCTION PRACTICES**

**SECTION 3601
GENERAL**

3601.1 Scope. The provisions of this chapter shall govern sustainable *building* construction practices for new construction and additions that require a building permit, unless otherwise noted.

**SECTION 3602
RESOURCE EFFICIENCY**

3602.1 Construction waste management. For new *buildings*, a construction waste management plan acceptable to the Building Official that includes recycling of concrete, wood, metals and cardboard, is required at the time of application for a building permit. The construction waste management plan shall be implemented and conspicuously posted on the construction site. Substantive changes to the plan shall be subject to prior approval by the Building Official.

3602.2 Certified tropical hardwood. All tropical hardwoods used in new construction, additions and alterations requiring a building permit, shall be certified by the Forest Stewardship Council or other *approved agency*. Certification demonstrating compliance shall be required with delivery of such materials and shall be available for inspection.

**“SECTION 3603
INDOOR ENVIRONMENTAL QUALITY (IEQ)**

3603.1 Indoor Air Quality (IAQ)

3603.1.1 Heating, Ventilating, and Air Conditioning Design . Prior to and during construction, reasonable efforts shall be made to minimize the release and accumulation of debris and particulates, and the specific requirements of this section shall apply.

3603.1.1.1 Air handling system access. The arrangement and location of air handling system components including, but not limited to, air handler units, fans, coils and condensate pans shall allow access for cleaning and *repair* of the air handling surfaces of such components. Piping, conduits, and other *building* components shall not be located so as to obstruct the required access.

3603.1.1.2 Durability of air handling surfaces. Surfaces exposed to airflow within air handling systems shall be constructed of materials that are resistant to deterioration and will not break away, crack, peel, flake off, or show evidence of delamination or continued erosion when tested in accordance with the erosion test in UL 181.

3603.1.1.3 Airstream surfaces. Materials exposed to airflow within ducts, within air plenums, or on top of suspended ceilings, shall not break away, crack, peel, flake off, or show evidence of delamination or continued erosion when tested in accordance with the erosion test in UL 181.

3603.1.2 Building pollutant flush-out. After all interior finishes are installed, the *building* shall be flushed-out by ventilating at a minimum rate of 0.30 cfm per ft² of outside air or the design outdoor airflow rate determined from Chapter 4 of the IMC, whichever is greater, for at least 14 days while maintaining an internal temperature of at least 60°F, and relative humidity not higher than 60 percent. Occupancy shall be permitted to start one day after start of the flush-out, provided that flush-out continues for the full 14 days. The *building* shall not be “baked out” by increasing the temperature of the space above the occupied set point. Where continuous *ventilation* is not possible, the aggregate of flush-out periods shall be equivalent to 14 days of continuous *ventilation*. Flush-out reports shall be provided to the Building Official prior to approval.

Exception: All residential *buildings*.

3603.2 Low-volatile organic compound (VOC) materials. Construction materials, floor coverings and site-applied finishes, including sealants and adhesives, resilient flooring, carpeting and pad, site-applied paints, stains and varnishes, structural wood panels, hardwood veneer plywood, particle board and fiber board *building* products, and insulation shall meet specified *volatile organic compound (VOC)* emissions limits in accordance with relevant standards California Department of Public Health (CDPH) 01350; GREENGUARD Environmental Institute GGPS.001 standard for *building* materials and finishes; and Green Seal® standards. Documentation demonstrating compliance shall be required with delivery of such materials and shall be available for inspection.

Exception: For *alterations* to existing *buildings*, carpeting and pad, structural wood

panels, hardwood, veneer plywood, particle board and fiber board *building* products and insulation are not subject to this requirement.

3603.3 Acoustical control. Minimum requirements for exterior-to-interior sound transmission, interior sound transmission, and background sound levels in new construction and additions thereto, except as noted hereunder, shall be provided as specified herein.

3603.3.1 Sound transmission. *Buildings* and tenant spaces shall comply with the following sound transmission requirements:

Exceptions:

1. Portions of *buildings* or *structures* that have the interior environment open to the exterior environment.
2. Concession stands and toilet facilities in Group A-4 and A-5 occupancies.

3603.3.1.1 Exterior sound transmission. Where a Group A1, A3, E and I occupancy *building*, a Group B occupancy *building* used for educational purposes, or a Group R occupancy *building* is constructed at a location listed herein, the wall and roof-ceiling assemblies making up the *building thermal envelope* shall have a composite sound transmission class (STC_c) rating of 40 or greater in the following locations:

1. within 500 feet (300 m) of a multi-lane highway (road) designed for high-speed travel by large numbers of vehicles, and having no traffic lights, stop signs, nor other regulations requiring vehicles to stop, fire station, heavy industrial or manufacturing zone or facilities, commercial storage facility with back-up alarms, outdoor music amphitheater, or sports arena or stadium;
2. within 250 feet (150 m) of a truck route roadway containing four or more traffic lanes; or
3. within 1,000 feet (900 m) of an active railway.

3603.3.1.2 Interior sound transmission. Interior wall and floor/ceiling assemblies, separating interior rooms and spaces shall be designed in accordance with the following requirements:

1. Wall and floor-ceiling assemblies separating adjacent tenant spaces, tenant spaces and public places, hotel rooms, motel rooms, and patient rooms in nursing homes and hospitals and adjacent classrooms shall have a composite STC rating of 50 or greater.

2. Wall and floor-ceiling assemblies separating classrooms from rest rooms and showers shall have a composite STC rating of 53 or greater.
3. Wall and floor-ceiling assemblies separating classrooms from music rooms, mechanical rooms, cafeteria, gymnasiums, and indoor swimming pools shall have a composite STC rating of 60 or greater.

Exception: Residential Group R occupancies addressed in Section 1207 of this code.

3603.3.1.3 Background Sound. The average background sound levels within unoccupied rooms (from heating, ventilating and air conditioning and other *building* systems) shall be below the maximum A-weighted sound level for specific occupancies from Table 3603 below. This shall be confirmed by spot checks during the commissioning process.

TABLE 3603
MAXIMUM ALLOWABLE BACKGROUND SOUND IN ROOMS

Occupancy	Maximum A-weighted sound level (dB _a)
Small auditoriums (≤500 seats)	39
Large auditoriums, large live indoor theaters, and large churches (for very good speech articulation) (>500 seats)	35
TV and broadcast studios (close microphone pickup only)	35
Small live indoor theaters (≤ 500 seats)	35
Private residences:	
Bedrooms	39
Apartments	48
Family rooms and living rooms	48
Schools:	
Lecture and classrooms	
Core learning space with enclosed volume ≤ 20,000 cu ft (<566 cu m)	35
Core learning space with enclosed volume > 20,000 cu ft (>566 cu m)	40
Open-plan classrooms	35
Hotels/motels:	
Individual rooms or suites	44
Meeting/banquet rooms	44
Service support areas	57

Office buildings:	
Offices	
executive	44
small, private	48
large, with conference tables	44
Conference rooms	
Large	39
Small	44
Open-plan areas	48
Business machines, computers	53
Public circulation	57
Hospitals and clinics	
Private rooms	39
Wards	44
Operating rooms	44
Laboratories	53
Corridors	53
Public areas	52
Movie theaters ≤ 500 seats	48
Churches, small (≤500 seats)	44
Courtrooms	44
Libraries	48
Restaurants	52
Light maintenance shops, industrial plant control rooms, kitchens, and laundries	62
Shops and garages	67

SECTION 3604

COMMISSIONING, OPERATIONS & MAINTENANCE

3604.1 Building commissioning. For new *buildings* and *additions* with a gross floor of greater than 15,000 ft² (1,395 m²), *commissioning* shall be performed in accordance with this section. A commissioning process shall be incorporated into the design and construction of the *building* project that verifies that the delivered *building* and its components, assemblies, and systems comply with the documented *owner project requirements* (OPR). Procedures, documentation, tools and training shall be provided to the *building* operating staff to sustain features of the *building* assemblies and systems for the service life of the *building*. This material shall be assembled and organized into a systems manual that provides necessary information to the *building* operating staff to operate and maintain all *commissioned* systems identified with the *building* project. The owner shall retain the system manual and final commissioning report described below. An electronic formatted copy of the final commissioning report shall be provided to the Building Official.

The following commissioning activities shall be completed prior to approval:

1. Designate an *approved project commissioning authority* (CxA) to lead, review, and oversee completion of the *commissioning* process activities.
2. The owner, in conjunction with the design team as necessary, shall develop the *owner's project requirements* (OPR) to guide the CxA. The OPR will be distributed to all parties

participating in the project programming, design, construction, and operations, and the *commissioning* team members.

3. The design team shall develop the *basis of design* (BOD).
4. The CxA shall review the both the *OPR* and *BOD* for clarity and completeness.
5. Construction phase *commissioning* requirements shall be incorporated into project specifications and other construction documents developed by the design team.
6. Develop and implement a *commissioning plan* containing all required forms and procedures for the complete testing of all equipment, systems, and controls included in Section 3604.1.1.
7. Verify the installation and performance of the systems to be *commissioned*.
8. Complete a final *commissioning* report satisfactory to the Building Official.
9. Verify the owner requirements for training operating personnel and *building* occupants are completed.
10. Verify that a system manual in a form satisfactory to the Building Official has been prepared. At a minimum, the system manual shall include operations and maintenance documentation and full warranty information, and shall provide operating staff the information needed to understand and operate the *commissioned* systems as designed.

3604.1.1 Systems. The following systems, if included in the *building* project, shall be *commissioned*:

1. heating, ventilating, air-conditioning, indoor-air-quality, and refrigeration systems and associated controls;
2. *building thermal envelope* systems, components, and assemblies to verify thermal, air, and moisture integrity;
3. all lighting controls and shading controls;
4. service water heating systems;
5. renewable energy systems; and
6. background sound levels.”

Section 5. That Section 5-27 of the Code of the City of Fort Collins is hereby amended by the addition of a new subparagraph which reads in its entirety as follows:

Chapter 35 REFERENCED STANDARDS is hereby amended by adding the following additional referenced standard in alphabetical sequence:

“**CDPH** California Department of Public Health
1615 Capitol Avenue
Sacramento, CA 95814

CDPH 01350 Standard Method for Testing VOC emissions from indoor sources
Referenced in Amended 09 IBC Section **3603.2 Maximum Allowable Background Sound in Rooms**”

"FSC Forest Stewardship Council U.S. (FSC-US)
212 Third Avenue North, Suite 504
Minneapolis, MN 55401"

"GEI GREENGUARD Environmental Institute
2211 Newmarket Parkway, Suite 110
Marietta, GA 30067

GGPS.001.GREENGUARD IAQ Standard for *Building* Materials, Finishes and Furnishings
Referenced in Amended 09 IBC Section **3603.2 Maximum Allowable Background Sound in Rooms**"

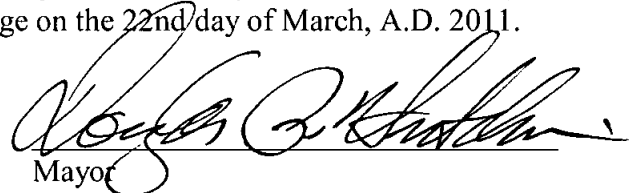
"Green Seal®
1001 Connecticut Avenue, NW
Suite 827
Washington, DC 20036-5525

GS-11 Paintings and Coatings
GS-43 Recycled Content Latex Paints
Referenced in Amended 09 IBC Section **3603.2 Maximum Allowable Background Sound in Rooms**"

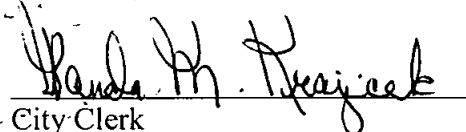
Section 6. That all subsections in Section 5-27 of the Code of the City of Fort Collins are hereby renumbered in sequential order as they appear in the IBC.

Section 7. That the requirements set forth herein above will be effective as to all applications for building permits filed on or after January 1, 2012.

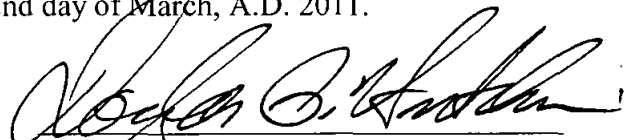
Introduced, considered favorably on first reading, and ordered published this 1st day of March, A.D. 2011, and to be presented for final passage on the 22nd day of March, A.D. 2011.


Mayor

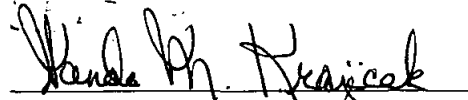
ATTEST:


City Clerk

Passed and adopted on final reading on the 22nd day of March, A.D. 2011.


Mayor

ATTEST:


City Clerk