ORDINANCE No. 116656

COUNCIL BILL No. 109597

AN ORDINANCE amending the Seattle Mechanical Code, Chapter 22.400 of the Seattle Municipal Code, as adopted by Ordinance 116011 to incorporate requirements of the Washington State Mechanical Code and the Washington State Ventilation and Indoor Air Quality Code and to make minor editorial corrections.

The City o

Honorable President:

Your Committee on

to which was referred the within Co
report that we have considered the s

4-14-93

Full Council

COMPTROLLER FILE No.

Introduced: 3-15-93	By: Donaldson
Referred: 3-16-93	To: Land Use
Referred:	To:
Referred:	To:
Reported: APR 2 6 1993	Second Reading: APR 2 6 1993
Third Reading: APR 2 6 1993	Signed: APR 2 6 1993
Presented to Mayor: APR 2 7 1993	Approved: APR 29 93
Returned to City Clerk: APR 29 93	Published:
Vetoed by Mayor:	Veto Published:
Passed over Veto:	Veto Sustained: OK

LAW/MF

Law Department

The City of Seattle--Legislative Department

Date Reported and Adopted

REPORT OF COMMITTEE

President:

mittee on

was referred the within Council Bill No.

t we have considered the same and respectfully recommend that the same:

1-4-93 3-0 Do Pass

Full Council vote 7-0

Committee Chair

ORDINANCE 116656

AN ORDINANCE amending the Seattle Mechanical Code, Chapter 22.400 of the Seattle Municipal Code, as adopted by Ordinance 116011 to incorporate requirements of the Washington State Mechanical Code and the Washington State Ventilation and Indoor Air Quality Code and to make minor editorial corrections.

BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. Subsection 301(c) of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

Sec. 301. (c) **Exempted Work. (Refrigeration).** A refrigeration permit shall not be required for the following:

1. Any self-contained refrigerating equipment for which an operating permit is not required.

2. Any unit refrigeration system which does not exceed three horse-power rating.

Exemption from the permit requirements of this mechanical code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provision of this mechanical code or any other laws or ordinances of the City.

Section 2. Section 415 of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

M

Sec. 415. MACHINERY ROOM. See **REFRIGERATION MACHINERY ROOM.**

MANUAL. Capable of being operated by human intervention.

MANUFACTURER'S INSTALLATION INSTRUCTIONS are printed instructions included with equipment as part of the conditions of listing.

MASONRY HEATER is a heating system which is predominantly masonry construction, having a mass of at least 1764 pounds (800 kg) excluding chimney and base. Within the masonry mass are contained a firebox and multiple heat exchange channels which store the heat and allow for extremely high temperature fires to be burned.

MECHANICAL JOINT is a gas-tight joint obtained by the joining of metal parts through a positive-holding mechanical construction.

CS 19.2

Section 3. Section 421 of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

S

Sec. 421. SATURATION PRESSURE of a refrigerant is the pressure at which there is stable coexistence of the vapor and liquid or the vapor and solid phase.

SELF-CONTAINED means having all essential working parts except energy and control connections so contained in a case or framework that they do not depend on appliances or fastenings outside of the machine.

SHAFT is an interior space enclosed by walls or construction extending through one or more stories or basements which connects openings in successive floors or floors and roof, to accommodate elevators, dumbwaiters, mechanical equipment or similar devices to transmit light or ventilation air.

SHAFT ENCLOSURE is the walls or construction forming the boundaries of a shaft.

SLEEVE. A factory-built chimney fitting designed to protect combustible materials when it is necessary to penetrate a combustible wall to connect to a chimney.

SMOKE DETECTOR is an approved device that senses visible or invisible particles of combustion.

SOLDERED JOINT is a gas-tight joint obtained by the joining of metal parts with metallic mixtures or alloys which melt at a temperature below 800°F. and above 400°F.

SOLID FUEL BURNING APPLIANCE is any factory-built ((~~or-site built~~)) appliance designed to ((~~provide heat for a structure by burning~~)) burn solid fuels.

SOURCE SPECIFIC VENTILATION SYSTEM is a mechanical ventilation system including all fans, controls, and ducting, which is dedicated to exhausting contaminant-laden air to the exterior of the building from the room or space in which the contaminant is generated.

STOP VALVE is a device to shut off the flow of refrigerant.

SUBSTANTIALLY AIRTIGHT DUCTS are welded or gasketed ducts which are mechanically fastened.

SYSTEM is a combination of equipment and/or controls, accessories, interconnecting means, and terminal elements by which air is transferred.

Section 4. Section 423 of the Seattle Mechanical Code, 1991 Edition is amended as follows:

U

Sec. 423. U.B.C. STANDARDS is the Uniform Building Code Standards 1991 Edition.

UNCONDITIONED SPACE. (See **CONDITIONED SPACE**).

UNCONFINED SPACE is a room or space having a volume equal to at least 50 cubic feet per 1000 Btu/h of the aggregate input rating of all fuel-burning appliances installed in that space. Rooms communicating directly with the space in which the appliances are installed, through openings not furnished with doors, are considered a part of the unconfined space.

UNIT HEATER is a heating appliance designed for nonresidential space heating and equipped with an integral means for circulation of air.

UNIT REFRIGERATION SYSTEM is a refrigerating unit which has been factory assembled and tested prior to its installation. Such unit shall not be connected to any ductwork. The unit shall be a complete one-unit package without remote parts.

UNLISTED, AS TO APPLIANCES, EQUIPMENT AND MATERIALS are those products which are not listed as having been tested for compliance with nationally recognized safety standards. Used, antique and homemade appliances are included in this definition.

UNPROTECTED TUBING is tubing which is not protected by enclosure or suitable location so that it is exposed to crushing, abrasion, puncture or similar mechanical damage under installed conditions.

UNUSUALLY TIGHT CONSTRUCTION is construction ((~~permitted on or after October 26, 1986~~)) where:

(a) Walls and ceilings exposed to the outside atmosphere have a continuous water vapor retarder with a rating of one perm or less with any openings gasketed or sealed, and

(b) Weatherstripping on openable windows and doors, and

(c) Caulking or sealants are applied to areas such as joints around window and door frames, between sole plates and floors, between wall-ceiling joints, between wall panels and at penetrations for plumbing, electrical and gas lines and at other openings; and

(d) Any building constructed under the 1986 or 1991 Seattle Energy Code, 1986 or 1991 Washington State Energy Code, 1986 or 1990 Northwest Energy Code or equivalent.

Section 5. Table 6-A of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

TABLE NO. 6-A

SIZE OF COMBUSTION-AIR OPENINGS OR DUCTS[1]

COLUMN I		COLUMN II	
Existing Buildings of Ordinary Tightness		New Construction and Existing Buildings of Unusually Tight Construction[2,6]	
Condition	Size of Openings or Ducts	Condition	Size of Openings or Ducts
Appliance in unconfined[3] space:	May rely on infiltration alone.	**Appliance in unconfined[3] space:** Obtain combustion air from outdoors or from space freely communicating with outdoors.	Provide two openings, each having 1 sq. in. per 5,000 Btu/h input. Ducts admitting outdoor air may be connected to the cold-air return.
Appliance in confined[5] space: 1. All air from inside building.	Provide two openings into enclosure each having one square inch per 1000 Btu/h input freely communicating with other unconfined interior spaces. Minimum 100 sq. in. each opening.[4]	**Appliance in confined[5] space:** Obtain combustion air from outdoors or from space freely communicating with outdoors.	1. Provide two **vertical** ducts or plenums; 1 sq. in. per 4,000 Btu/h input each duct or plenum. 2. Provide two **horizontal** ducts or plenums, 1 sq. in. per 2,000 Btu/h input each duct or plenum. 3. Provide two **openings in an exterior** wall of the enclosure; each opening 1 sq. in. per 4,000 Btu/h input. 4. Provide one **ceiling opening to** ventilated attic **and** one **vertical** duct to attic; each opening 1 sq. in. per 4,000 Btu/h input. 5. Provide one **opening in** enclosure ceiling to ventilated attic and one **opening in** enclosure **floor** to ventilated crawl space; each opening 1 sq. in. per 4,000 Btu/h input.
2. Part of air from inside building	Provide two openings into enclosure[4] from other freely communicating unconfined[3] interior spaces each having an area of 100 sq. in. plus one duct or plenum opening to outdoors having an area of 1 sq. in. per 5,000 Btu/h input rating. The outdoor duct or plenum opening may be connected to the cold-air return.		
3. All air from outdoors. Obtain from outdoors or from space freely communicating with outdoors.	Use any of the methods listed for confined space in unusually tight construction as indicated in Column II.		

1 For location of openings see Section 602.

2 New equipment in semi-heated space may rely on infiltration alone.

3 See Chapter 4.

4 When the total input rating of appliances in enclosure exceeds 100,000 Btu/h, the area of each opening into the enclosure shall be increased 1 square inch for each 1,000 Btu/h over 100,000.

5 As defined in Section 405.

((6 ~~Buildings permitted on or after October 26, 1986 are considered to be unusually tight construction.~~))

6 Any building constructed under the 1986 or 1991 Seattle Energy Code, 1986 or 1991 Washington State Energy Code, 1986 or 1990 Northwest Energy Code or equivalent.

CS 19.2

Section 6. Subsection 914(a) of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

METAL CHIMNEYS

Sec. 914. (a) **General.** 1. **Limitations.** Unlisted single-wall metal chimneys (smokestacks) shall not be installed within a dwelling unit of a Group R Occupancy.

Metal chimneys shall not be carried up inside ventilating ducts unless such ducts are constructed and installed as required by this code for chimneys and are used solely for exhaust of air from the room or space in which the appliances served by the metal chimneys are located.

2. **Design.** Metal chimneys shall have a minimum thickness of 0.127 inch (No. 10 manufacturer's standard gage) steel and shall be designed and constructed as specified in this chapter and Chapters 23 and 27 of the Building Code.

3. **Construction.** Unlisted metal chimneys shall be riveted or welded and, unless structurally self-supporting, shall be guyed securely or firmly anchored to or otherwise supported by the building or structure served thereby. All joints shall be liquid tight or of such a design that liquid will drain to the interior of the chimney.

4. **Lining.** Metal chimneys shall be lined as required by Table No. 9-C.

5. **Termination.** Metal chimneys shall terminate as required by Table No. 9-C.

6. **Clearance.** Clearance from combustible construction shall be in accordance with Table No. 9-C and the applicable requirements for each classification of chimney as required by this chapter.

When a metal chimney passes through a ceiling or roof constructed of combustible materials, it shall be protected by an approved ventilating thimble extending not less than 9 inches below and 9 inches above the ceiling or roof construction. Thimbles shall be of a size to provide a clearance on all sides of the chimney at least 18 inches, except that for chimneys of low-heat appliances the clearance may be reduced to at least 6 inches.

7. **Support.** Metal chimneys shall be supported on properly designed foundations of masonry or reinforced concrete or on noncombustible material having a fire-resistance rating of not less than three hours, provided such supports are independent of the building construction and the load is transferred to the ground.

8. **Enclosure required for interior chimneys.** Metal chimneys or parts thereof in a building exceeding one story in height shall be enclosed above the story in which the appliance served is located, in walls of noncombustible construction having a fire-resistive rating of not less than one hour if the building is less than ((~~four~~)) five stories in height, and not less than two hours if the building is ((~~four~~)) five stories or more in height, with a space on all

sides between the chimney and the enclosing walls sufficient to render the entire chimney accessible for examination and repair. The enclosing walls shall be without openings.

EXCEPTION: Doorways equipped with a fire assembly having a one-hour fire-resistive rating may be permitted at each floor level for inspection purposes.

Section 7. Section 10.102 of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

APPLICATION TO EXISTING BUILDINGS

Sec. 10.102 (a) **Additions to Existing Buildings.** Additions to existing buildings or structures may be made without making the entire building comply, provided that the new addition shall conform to the provisions of this chapter.

EXCEPTION: ~~((Additions that do not include kitchens, bathrooms, water closets, indoor swimming pools, spas and other areas where excess water vapors are produced and are less than 500 square feet are exempt from Sections 10.103 and 10.104.))~~ Additions with less than 500 square feet of conditioned floor area are exempt from the requirements in this chapter for whole house ventilation systems.

(b) **Alterations and Repairs.** All ((~~substantial~~)) alterations and repairs may be made to existing buildings or moved buildings built or permitted prior to the enforcement of this chapter without making the entire building comply with the provisions of this chapter, provided the alterations or repairs comply with this chapter.

EXCEPTION: Air handling/conditioning equipment, which is being replaced without alteration or repair of the associated air distribution system is exempt from the requirements of this chapter.

(c) **Historic Buildings.** Buildings which are designated as historical landmarks are exempt from this chapter only to the extent necessary to preserve those features essential to their historical appearance or function.

Section 8. Section 10.103 of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

MINIMUM VENTILATION CRITERIA FOR ALL GROUP R OCCUPANCIES FIVE STORIES AND LESS

Sec. 10.103 (a). **General.** This section shall apply to all Group R occupancies five stories or less as defined by the Building Code. Residential structures greater than 5 stories in height shall comply with Section 10.105, for outdoor air supply requirements. For source specific ventilation requirements, see Section 10.103(b)1. Compliance with this section shall be demonstrated through engineering calculations or performance testing. Documentation of calculations shall be submitted to the building official where required. Performance testing shall be conducted in accordance with recognized test methods.

At the discretion of the building official, flow testing may be required to verify that the mechanical system(s) satisfies the requirements of this section. Flow testing may be performed using flow hoods measuring at the intake or exhaust points of the system, in-line pitot tube, or pitot-traverse type measurement systems in the duct, short term tracer gas measurements, or other means approved by the building official.

(b) **Minimum Ventilation Performance.** Each dwelling unit or guest room shall be equipped with source specific and whole house ventilation systems designed and installed to satisfy the ventilation requirements of this chapter.

EXCEPTION: All public corridors shall meet the ventilation requirements in Section 1205 of the Building Code.

1. **Source Specific Ventilation.** Source specific exhaust ventilation shall be required in each kitchen, bathroom, water closet, laundry ((~~facility~~)) room, indoor swimming pool, spa, and other rooms where excess water vapor or cooking odor is produced.

The minimum source specific ventilation effective exhaust capacity shall be not less than levels specified in Table No. 10.1-A.

2. **Whole House Ventilation Systems.** Each dwelling unit shall be equipped with a whole house ventilation system which shall be capable of providing at least 0.35 air changes per hour, but not less than 15 cubic feet per minute per bedroom plus an additional 15 cubic feet per minute. Whole house ventilation systems shall be designed to limit ventilation to a level no greater than 0.5 air changes per hour under normal operation conditions. Whole house ventilation systems shall supply outside air to all habitable rooms through individual outside air inlets, forced-air heating system, ducting or equivalent means. Doors and operable lites in windows are deemed not to meet the outside air supply intake requirements.

EXCEPTION: For dwelling units of no more than 1,400 square feet, the maximum ventilation rate shall be 0.65 air changes per hour.

(c) **Controls.** All ventilation system controls shall be readily accessible. Controls for whole house ventilation systems shall be capable of operating the ventilation system without energizing other energy-consuming appliances.

EXCEPTION: Continuously operated whole house ventilation system switches shall not be readily accessible by the occupant.

1. **Source Specific Ventilation Systems.** Source specific ventilation systems shall be controlled by manual switches, dehumidistats, timers, or other approved means.

2. **Intermittently Operated Whole House Ventilation Systems.** The intermittently operated whole house ventilation systems shall be constructed to have the

capability for continuous operation, and shall have a manual control and an automatic control, such as a clock timer. At the time of final inspection, the automatic control timer shall be set to operate the whole house fan for a minimum of eight hours a day.

(d) **Noise.** Whole house fans located four feet or less from the interior grille shall have a sone rating of 1.5 or less measured at 0.1 inches water gage. Remotely mounted fans shall be acoustically isolated from the structural elements of the building and from attached duct work using insulated flexible duct or other approved material.

EXCEPTION: Whole house ventilation systems which are integrated with forced-air heating systems or heat-recovery ventilation systems are exempt from the sone rating requirements of this section.

(e) **Ventilation Ducts.** All ducts shall terminate outside the building. Exhaust ducts in systems which are designed to operate intermittently shall be equipped with back-draft dampers. All exhaust ducts in unconditioned spaces shall be insulated to a minimum of R-4. All supply ducts in the conditioned space shall be insulated to meet a minimum of R-4. For all other ducts, see the Seattle Energy Code, Table 5-11.

(f) **Outside Air.** A mechanical system shall supply outside air as required in subsection (b). The mechanical system may consist of exhaust fans, supply fans, or both.

1. **Outside Air Inlets.** Inlets shall be screened or otherwise protected from entry by insects, leaves, or other material. Outside air inlets shall be located so as not to take air from the following areas:

A. Closer than 10 feet from an appliance vent outlet, unless such vent outlet is 3 feet above the outside air inlet.

B. Where it will pick up objectionable odors, fumes or flammable vapors.

C. A hazardous or unsanitary location.

D. A room or space having any fuel-burning appliances therein.

E. Closer than 10 feet from a vent opening of a plumbing drainage system unless the vent opening is at least 3 feet above the air inlet.

F. Attics, crawl spaces or garages.

2. **Individual Room Outside Air Inlets.** Individual room outside air inlets shall ((~~have a controllable and secure opening and be capable of a total opening area of not less than four square inches and tested by a nationally recognized standard or approved agency and located to avoid drafts.~~)):

A. Have controllable and secure openings;

B. Be sleeved or otherwise designed so as not to compromise the thermal properties of the wall or window in which they are placed;

C. Provide not less than 4 square inches of net free area of opening for each habitable space. Any inlet or combination of inlets which provide 10 CFM at 10 Pascals as determined by the Home Ventilating Institute Air Flow Test Standard is deemed equivalent to 4 square inches net free area.

3. **Ventilation Integrated with Forced-Air Systems.** The outside air connection to the return air stream shall be located upstream of the forced-air system blower and shall not be connected directly into a furnace cabinet to prevent thermal shock to the heat exchanger.

4. **Distribution.** Outside air shall be distributed to each habitable room by individual inlets, separate duct systems, or a forced-air system. Where outside air supplies are separated from exhaust points by doors, provisions shall be made to ensure air flow by installation of distribution ducts, undercutting doors, installation of grilles, transoms, or similar means where permitted by the Building Code. Doors shall be undercut to a minimum of one-half inch above the surface of the finish floor covering.

Section 9. Section 10.104 of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

MECHANICAL VENTILATION CRITERIA AND MINIMUM VENTILATION PRESCRIPTIVE REQUIREMENTS FOR ALL GROUP R OCCUPANCIES FIVE STORIES AND LESS

Sec. 10.104 (a) **General.** This section establishes minimum prescriptive design requirements for intermittently operated systems. Continuously operated systems shall comply with Section 10.103. System characteristics not addressed in the following sections shall comply with Section 10.103. A system which meets the requirements of this section shall be deemed to satisfy the requirements of this chapter.

(b) **Source Specific.** Exhaust fans providing source specific ventilation shall have minimum fan flow rating not less than 50 CFM at 0.25 inches water gage for bathrooms, laundries or similar rooms and 100 CFM at 0.25 inches water gage for kitchens. Manufacturers' fan flow ratings shall be determined as per HVI Standard No. 916 (July 1989) or AMCA Standard No. 210.

EXCEPTION: Where a range hood or down draft exhaust fan is used to satisfy the source specific ventilation requirements for kitchens, the range hood or down draft exhaust shall not be less than 100 CFM at 0.10 inches water gage.

(c) **Whole House.** Whole house ventilation systems may consist of whole house exhaust, integration with forced-air systems or dedicated heat recovery ventilation systems. Whole house ((~~exhaust~~)) ventilation systems shall provide ventilation capacity as specified in Table 10.1-B and meet the following requirements:

1. Exhaust fans providing whole house ventilation shall have a flow rating at 0.25 inches water gage as specified in Table No. 10.1-B. Manufacturer's fan flow ratings shall be determined as per HVI Standard No. 916 (July 1989) or AMCA Standard No. 210. Table No. 10.1-B shall not be used for dwelling units with more than ((~~four~~)) five bedrooms.

2. Integrated forced-air ventilation systems shall have an ((~~6-inch-diameter-or-equivalent~~)) outside air inlet duct connecting a terminal element on the outside of the building to the return air plenum of the forced-air system((~~.~~)), ((~~The outside-air-inlet-duct-shall-be-equipped-with-a-damper-or other-device-that-regulates-air-flow-to-a-minimum-of-0.35-air changes-per-hour-but-not-greater-than-0.50-air-changes-per hour-under-normal-operating-conditions.~~)) at a point within 4 feet upstream of the air handler, and be equipped with one of the following:

A. A motorized damper connected to the automatic ventilation control as specified in Section 10.103(c); or

B. A damper installed and set to meet measured flow rates as specified in Table 10.1-B, by either field testing or following manufacturer's installation instructions based on site conditions; or

C. An automatic flow regulated device with field measured or field calculated minimum negative pressure differential of 0.07 inches water gage at the point where the outside air duct is connected to the return air plenum.

3. All duct work in heat recovery ventilation systems shall be not less than 6 inch diameter. Balancing dampers shall be installed on the inlet and exhaust side. Flow measurement grids shall be installed on the supply and return. System minimum flow rating shall be not less than that specified in Table No. 10.1-B. Maximum flow rates in Table No. 10.1-B do not apply to heat recovery ventilation systems.

(d) **Source Specific and Whole House Exhaust Ducts.** Exhaust ducts shall meet all requirements of Section 10.103(g). Duct diameter, length and number of elbows for exhaust fans shall be as specified in Table No. 10.1-C. Terminal elements for exhaust fan duct systems shall have at least the equivalent net free area of the duct work. Duct diameter, length, and number of elbows for integrated forced air systems shall be as specified in Table 10.1-D. Terminal elements for integrated systems shall be the same size as the connecting ductwork or 8 inches in diameter, whichever is greater.

Section 10. Section 10.105 of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

MECHANICAL VENTILATION CRITERIA AND MINIMUM VENTILATION PERFORMANCE FOR ALL OTHER OCCUPANCIES

Sec. 10.105. Outside Air Requirements for Ventilation. Where a mechanical ventilation system is installed in lieu of natural ventilation as required by Sections 605, 705, 805, 905 and 1005 of the Building Code, the system shall be capable of supplying or exhausting where allowed by Table No. 10.1-((B)),E, the rate of outside air specified in Table No. 10.1-((B))E, to the occupied zone during all times that the space is occupied. Occupant density shall be taken from Table No. 10.1-((B))E.

EXCEPTION: Where occupancy density is known and documented in the plans, the outside air rate may be based on the design occupant density. Under no circumstance shall the occupancies used result in outside air less than one-half of that resulting from application of Table 10.1-E estimated maximum occupancy values.

Outside air shall be ducted in a fully enclosed path directly to every air handling unit in each zone not provided with sufficient openable area for natural ventilation.

EXCEPTION: Ducts may terminate within 12 inches of the intake to the HVAC unit provided they are physically fastened so that the outside air duct is directed into the unit intake.

To consider higher occupant densities, desires for higher outside air quantities per person, and HVAC systems with a ventilation effectiveness of less than 100%, the maximum total air quantities used as the basis for calculating heating and cooling design loads and for sizing HVAC equipment shall not exceed three times the quantities specified in Table No. 10.1-((B))E.

Section 11 . Section 10.106 of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

SOLID FUEL BURNING APPLIANCES, ((AND)) FIREPLACES, AND MASONRY HEATERS

Sec. 10.106 ((~~(a) General.--Solid-fuel-burning-appliances and-fireplaces-shall-satisfy-one-of-the-following-criteria:~~))

((~~(b)~~)) (a) **Solid Fuel Burning Appliances.** Solid fuel burning appliances shall be provided with the following:

1. Tight fitting metal or ceramic glass ((~~or-metal~~)) doors.

2. A. A source from outside the structure of primary combustion air, connected to the appliance as per manufacturer's specification. The air inlet shall originate at a point below the fire box. The duct shall be 4 inches or greater in diameter, not to exceed to 20 feet in length, and be installed as per manufacturer's instructions;

or

B. The appliance and manufacturer's recommended combustion air supply, as an installed unit, shall be certified by an independent testing laboratory to have passed Test No. 11 - Negative Pressure Test, Section 12.3, of ULC S627-M1984 "Space Heaters for Use with Solid Fuels," modified as follows:

1) Negative pressure of 8 Pascal shall be initially established with the chamber sealed and the air supply, if not directly connected to the appliance, closed off.

2) The air supply, if not directly connected to the appliance, shall then be opened.

3) The maximum allowable air exchange rate from chamber leakage and intentional air supply for the unit (appliance with combustion air supply) in the test chamber is 3.5 air changes per hour, or 28 cfm (cubic feet of air per minute), whichever is less.

EXCEPTION: Combustion air may be supplied to the room in which the solid fuel burning appliance is located in lieu of direct ducting, provided that one of the following conditions is met:

i) The solid fuel burning appliance is part of a central heating plant and installed in an unconditioned space in conformance with the Mechanical Code; or

ii) The solid fuel burning appliance is installed in existing construction directly on a concrete floor or surrounded by masonry materials as in a fireplace.

The combustion air terminus shall be located as close to the solid fuel burning appliance as possible and shall be provided with a barometric damper or equivalent. The combustion air source shall be specified by the manufacturer or no less than 4 inches in diameter or the equivalent in area or as approved.

((~~2.--An outside source of combustion air directly connected to the firebox, or tested and listed to the performance requirements of the carbon monoxide test required by the Department of Housing and Urban Development Mobile Home Construction and Safety Standards.~~

~~**EXCEPTION:** --If existing construction prohibits the introduction of outside combustion air directly to the appliance or the solid fuel burning appliance is part of the central heating system and is installed in an unconditioned space, combustion air may be supplied to the room in which the solid fuel burning appliance is located in lieu of direct ducting. --The combustion air terminus shall be located as close to the solid fuel burning appliance as possible and shall be provided with a barometric damper or equivalent. The combustion air source shall be no less than four inches in diameter or the equivalent in area or as approved.~~))

((~~c~~))(b) **Fireplaces.** Fireplaces shall be provided with each of the following:

1. Tightly fitting flue dampers, operated by a readily accessible manual or approved automatic control.

EXCEPTION: Fireplaces with gas logs shall be installed in accordance with the Mechanical Code Section 803.

2. An outside source for combustion air ducted into the firebox. The duct shall be at least six square inches, and shall be provided with an operable outside air duct damper.

3. ((~~Tightly~~)) Site built fireplaces shall have tight fitting glass or metal doors, or flue draft induction fan or as approved for minimizing back-drafting. Factory built fireplaces shall use doors listed for the installed appliance.

((~~**EXCEPTION:** Fireplaces with gas logs shall be installed in accordance with Chapter 8.~~))

(c) **Masonry Heaters.** Masonry heaters shall be approved by the Department of Ecology and shall contain both of the following:

1. Primary combustion air ducted from the outside of the structure to the appliance.

2. Tight fitting ceramic glass or metal doors. Flue damper, when provided, shall have an external control and when in the closed position shall have a net free area of not less than five percent of the flue cross sectional area.

Section 12. Table 10.1-B of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

WHOLE HOUSE EXHAUST FAN PRESCRIPTIVE REQUIREMENTS[1]
TABLE 10.1-B

Bedrooms	CFM Minimum	CFM Maximum
2 or less	50	75
3	80	120
4	100	150
5	120	180

[1] This table shall not be used for dwelling units containing more than five bedrooms.

Section 13. Chapter 10.1 of the Seattle Mechanical Code, 1991 Edition, is amended by adding Table No. 10.1-D as follows:

PRESCRIPTIVE INTEGRATED FORCED AIR SUPPLY DUCT SIZING
TABLE 10.1-D

Number of Bedrooms	Minimum Smooth Duct Diameter	Minimum Flexible Duct Diameter	Maximum Length[1]	Maximum Number of Elbows[2]
2 or less	6 inch	7 inch	20 feet	3
3	7 inch	8 inch	20 feet	3
4 or more	8 inch	9 inch	20 feet	3

[1] For lengths over 20 feet increase duct diameter 1 inch.

[2] For elbows numbering more than 3 increase duct diameter 1 inch.

Section 14. Table 10.1-D of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

TABLE 10.1-((D))E
OUTSIDE AIR REQUIREMENTS FOR VENTILATION[1]

Application	Estimated Maximum Occupancy, persons per 1000 ft^2 of net occupiable space	Outside Air Requirements
	COMMERCIAL	
		cfm/person
Dry Cleaners, Laundries[3]		
Commercial laundry	10	25
Commercial dry cleaner	30	30
Storage, pick up	30	35
Coin-operated laundries	20	15
Coin-operated dry cleaners	20	15
For Group R Occupancies five stories and less, see requirements in Sections 10.103 and 10.104		
Dwelling Units In Buildings Greater Than Five Stories or Attached to I-Occupancy Facilities Bedrooms & Living areas[24]		15
Food and Beverage Service		
Dining rooms	70	20
Cafeteria, fast food	100	20
Bars, cocktail lounges[4]	100	30
Kitchens (cooking)[5]	20	15
Garages, Repair, Service Stations[6]		**cfm/ft^2 floor**
Enclosed parking garage		1.50
Auto repair rooms		1.50
Hotels, Motels, Resorts[7], ((Dormitories[7])) Congregate Residences with more than Five Stories[8]		**cfm/room**
Bedrooms		30
Living Rooms		30
Bath[9]		35
		cfm/person
Lobbies	30	15
Conference rooms	50	20
Assembly rooms	120	15
((~~Dormitory sleeping areas~~))	((20))	((~~15~~))
Gambling casinos[4]	120	30
Offices[10]		
Office space	7	20
Reception areas	60	15
Telecommunications centers and data entry areas	60	20
Conference rooms[4]	50	20

TABLE 10.1-((B))E (continued)
OUTSIDE AIR REQUIREMENTS FOR VENTILATION[1]

Application	Estimated Maximum Occupancy, persons per 1000 ft^2 of net occupiable space	Outside Air Requirements
Public Spaces		**cfm/ft^2**
Corridors and utilities		0.05
		cfm/wc or urinal
Public restrooms[11]		50
		cfm/ft^2
Locker and dressing rooms		0.50
		cfm/person
Smoking lounge[12]	70	60
		cfm/ft^2
Elevators[13]		1.00
Retail Stores, Sales Floors, and Show Room Floors		
Basement and street	30	0.30
Upper floors	20	0.20
Storage rooms	15	0.15
Dressing rooms		0.20
Malls and arcades	20	0.20
Shipping and receiving	10	0.15
Warehouses	5	0.05
		cfm/person
Smoking lounge[12]	70	60
Speciality Shops		
Barber	25	15
Beauty	25	25
Reducing salons	20	15
Florists[14]	8	15
		cfm/ft^2
Clothier, furniture		0.30
		cfm/person
Hardware, drugs, fabric	8	15
Supermarkets	8	15
		cfm/ft^2
Pet shops		1.00
Sports and Amusement[15]		**cfm/person**
Spectator areas	150	15
Game rooms	70	25
		cfm/ft^2
Ice arenas (playing areas)		0.50
Swimming pools (pool & deck area)[16]		0.50
		cfm/person
Playing floors (gymnasium)	30	20
Ballroom and discos	100	25
Bowling alleys (seating areas)	70	25
Theaters[17]		
Ticket booths	60	20
Lobbies	150	20
Auditorium	150	15
Stages, studios	70	15

TABLE 10.1-((B))E (continued)
OUTSIDE AIR REQUIREMENTS FOR VENTILATION[1]

Application	Estimated Maximum Occupancy, persons per 1000 ft^2 of net occupiable space	Outside Air Requirements
Transportation[18]		
Waiting rooms	100	15
Platforms	100	15
Vehicles	150	15
Workrooms		
Meat processing[19]	10	15
Photo studios	10	15
		cfm/ft^2
Darkrooms	10	0.50
		cfm/person
Pharmacy	20	15
Bank vaults	5	15
		cfm/ft^2
Duplicating, printing[20]		0.50
INSTITUTIONAL		
Education		**cfm/person**
Classroom	50	15
Laboratories[21]	30	20
Training shop	30	20
Music rooms	50	15
Libraries	20	15
		cfm/ft^2
Locker rooms		0.50
Corridors		0.10
		cfm/person
Auditoriums	150	15
Smoking lounges[12]	70	60
Hospitals, Nursing and Convalescent Homes[22]		
Patient rooms	10	25
Medical procedure	20	15
Operating rooms	20	30
Recovery and ICU	20	15
		cfm/ft^2
Autopsy rooms[23]		0.50
		cfm/person
Physical Therapy	20	15
Correctional Facilities		
Cells	20	20
Dining halls	100	15
Guard stations	40	15

1 From ASHRAE Standard 62-1989. This table prescribes supply rates of acceptable outside air required for acceptable indoor air quality. These values have been chosen to control CO_2 and other contaminants with an adequate margin of safety and to account for

TABLE 10.1-((Đ))E (continued)
OUTSIDE AIR REQUIREMENTS FOR VENTILATION[1]

2 Independent of room size; installed capacity for intermittent use.

3 Dry-cleaning processing may require more air.

4 Supplementary smoke-removal equipment may be required.

5 Makeup air for hood exhaust may require more ventilating air. The sum of the outside air and transfer air of acceptable quality from adjacent spaces shall be sufficient to provide an exhaust rate of not less than 1.5 cfm/ft^2.

6 Distribution among people must consider worker location and concentration of running engines; stands where engines are run must incorporate systems for positive engine exhaust withdrawal. Contaminant sensors may be used to control ventilation.

7 See also food and beverage services, merchandising, barber and beauty shops, garages.

8 Independent of room size.

9 Installed capacity for intermittent use.

10 Some office equipment may require local exhaust.

11 Mechanical exhaust with no recirculation.

12 Normally supplied by transfer air; local mechanical exhaust with no recirculation recommended.

13 Normally supplied by transfer air.

14 Ventilation to optimize plant growth may dictate requirements.

15 When internal combustion engines are operated for maintenance of playing surfaces, increased ventilation rates may be required.

16 Higher values may be required for humidity control.

17 Special ventilation will be needed to eliminate special stage effects (e.g., dry ice vapors, mists, etc.)

18 Ventilation within vehicles may require special consideration.

19 Spaces maintained at low temperatures (-10°F to +50°F) are not covered by these requirements unless the occupancy is continuous. Ventilation from adjoining spaces is permissible. When the occupancy is intermittent, infiltration will normally exceed the ventilation requirement.

20 Installed equipment must incorporate positive exhaust and control (as required) of undesirable contaminants (toxic or otherwise).

21 Special contaminant control systems may be required for processes or functions including laboratory animal occupancy.

22 Special requirements or codes and pressure relationships may determine minimum ventilation rates and filter efficiency. Procedures generating contaminants may require higher rates.

TABLE 10.1-((Đ))E (continued)
OUTSIDE AIR REQUIREMENTS FOR VENTILATION[1]

23	Air shall not be recirculated into other spaces.
24	Occupant loading shall be based on the number of bedrooms as follows: first bedroom, two persons; each additional bedroom, one person. Where higher occupant loadings are known, they shall be used.

Section 15. Subsection 1107(j) of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

(j) **Exhaust Outlets.** Outlets for exhausts that exceed 600|F. shall be in accordance with Table No. 9-C.

The termination point for exhaust ducts discharging to the atmosphere shall be not less than the following:

1. Duct outlets conveying explosive or flammable vapors, fumes or dusts: 30 feet from property line; 10 feet from operable openings into the building; 6 feet from exterior walls or roofs; 30 feet from combustible walls or operable openings into the building which are in the direction of the exhaust discharge; 10 feet above adjoining grade and 10 feet from mechanical air intake into the building which is in the direction of the exhaust discharge. This includes carpentry shop exhaust, industrial chemical lab, paint shop and sandblasting exhaust system.

2. Other product-conveying outlets: 10 feet from property line; 3 feet from exterior wall or roof; 10 feet from operable openings into the building; 10 feet above adjoining grade and 10 feet from mechanical air intake. This includes central vacuum system, dry cleaner, photo lab, school chemical lab and combustion engine exhaust.

3. Environmental air duct exhaust outlets: 3 feet from property line; 3 feet from operable openings into the building for all occupancies other than Group((s)) ((R-and)) M; and 10 feet from a mechanical air intake. This includes environment air ducts regulated by Section 1104, except for parking garage exhaust outlets.

4. Parking garage exhaust outlets: 10 feet from a property line; 10 feet from operable openings into a building, and 10 feet from mechanical air intake. Exhaust outlets which extend to the roof shall extend 3 feet above the roof.

(For the purpose of this section, property line shall include any property line separating one lot from another lot but shall not include any property line separating a lot from a public street or alley right-of-way.)

Section 16. Section 1508 of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

REFRIGERATION MACHINERY ROOM VENTILATION

Sec. 1508. Refrigeration machinery rooms shall be provided with means of ventilation to the outside of the building. Such ventilation shall also incorporate provisions for emergency ventilation. ((~~The following~~)) Requirements 1 and 2 may be combined in one system.

1. An emergency exhaust system serving no other area and having the capacity to provide a complete change of air in such room at least once every five minutes and discharge to the outside of the building at a location not less than 20 feet from any operable opening or mechanical air intake in

any building shall be provided. Provisions shall be made for makeup air to replace that being exhausted. Each exhaust ventilation system shall be controlled by a readily accessible emergency ventilation switch located within 2 feet of the switch specified in Section 1509, and the switch shall be labeled to comply with Section 1519. An operating status indicator shall be provided at the switch and at the fire control center (when required).

2. A mechanical ventilation system or gravity ventilation openings to the outside of the building shall be sized in accordance with Table No. 15-B based on accumulated horsepower in the rooms with refrigeration units and shall operate continuously.

Gravity openings shall be so installed that approximately one half of the required area is located within 12 inches of the ceiling and one half of the required area is located within 12 inches of the floor of the room. Every portion of the lower opening shall be horizontal or slope downward from the opening in the refrigeration machinery room to the exterior of the building at or above the adjacent ground level.

Equipment and components located in a refrigeration machinery room shall be protected from freezing or other low temperature damage.

3. Where gravity ventilation is not provided, operation of the mechanical ventilation shall occur anytime space is occupied or operations or maintenance personnel are present.

Section 17. Appendix B Section 2508 of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

PROHIBITED LOCATIONS

Sec. 2508. ((No)) Water heaters which depend((s)) on combustion of fuel for heat shall not be installed in a((ny)) room used ((for)) or designed to be used for sleeping purposes, ((or in any)) bathroom, clothes closet, or in a closet or other confined space opening into a((ny)) bath or bedroom. See also Section 802.

EXCEPTION: Direct vent water heaters.

Where not prohibited by other regulations, water heaters may be located under a stairway or landing.

Section 18 . This ordinance shall take effect and be in force on July 1, 1993; otherwise it shall take effect at the time it shall have become a law under the provisions of the City Charter.

Passed by the City Council the 26th day of April, 1993 and signed by me in open session in authentication of its passage this 26th day of April 1993.

Margaret Carter
President of the City Council Pro Tem

Approved by me this 29th day of April, 1993.

Norman B. Rice
Mayor

Filed by me this 29th day of April, 1993.

BY Margaret Carter
Deputy

(SEAL)
Published _____

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CS 19.2

Seattle
Department of Construction and Land Use

R. F. Krochalis, Director
Norman B. Rice, Mayor

M E M O R A N D U M

TO: George Benson, City Council President
VIA: Diana Gale, Director, OMB
ATTENTION: Daniel Becker, Budget Analyst

FROM: Rick Krochalis, Director

DATE: March 11, 1993

SUBJECT: Seattle Building and Mechanical Code Ordinances

Attached for your consideration are proposed ordinances to amend the 1991 Seattle Building Code and the 1991 Seattle Mechanical Code. Lists of changes and cost reports are also attached. Costs include copying, training staff and writing new Director's Rules and public information documents. No additional funds are requested.

The Building Code amendments would incorporate requirements of the Washington State Building Code which regulate fire sprinklers in portable school classrooms, the use of solid-fuel-burning devices, emergency and standby power for hazardous occupancies, and residential group care facilities, and would require space for recyclable material in new buildings. Local provision for code alternates such as methane reduction measures for sites near methane-producing landfills and mitigation of liquefaction potential are added. Construction standards for transformer vaults are revised. Changes in the Washington State Ventilation and Indoor Air Quality Code are incorporated.

The Mechanical Code amendments would incorporate requirements of the Washington State Mechanical Code and changes to the Washington State Ventilation and Indoor Air Quality Code.

Issues raised during public review are resolved in these ordinances. The amendments were reviewed by the Building Code Advisory Board (BCAB) and its Mechanical Code Committee. The names of Board members are attached to this transmittal memo. The review process for the amendments was announced to the public in DCLU's January and February INFO newsletter which is circulated to over 1500 subscribers.

We have tentatively scheduled April 14, 1993 as a date for public hearing at the Council Land Use Committee meeting.

If you have any questions, please call Terry Ross, at 233-3891.

Attachments

Seattle
Department of Construction and Land Use

R. F. Krochalis, Director
Norman B. Rice, Mayor

AMENDMENTS TO SEATTLE MECHANICAL CODE, 1991 EDITION

LIST OF CHANGES

March 1993

The items listed below are proposed amendments to the 1991 Seattle Mechanical Code.

KEY: VIAQ = Washington State Ventilation and Indoor Air Quality Code, 1993 Edition
WSMC = Washington State Mechanical Code, 1991 Edition
SBC = Seattle Building Code, 1991 Edition
UPC = Uniform Plumbing Code, 1991 Edition

1991 SMC Chap/Sec/ Ord Page	Source	Change
301(c)/1	staff	add "unit"
415/1	VIAQ	add "Masonry Heater" definition
421/2	VIAQ	change "Solid Fuel Burning Appliance" definition
423/3	WSMC	change definition of "Unusually Tight Construction" [also Table 6-A]
914(a)8/5	staff	change four stories to five stories to be consistent with SBC 3309(b), Table 5-D, Table 17-A
10.1/6	VIAQ	adopt state changes to Sections: 10.102-10.106, Table 10.1-B, new Table Table 10.1-D change Table 10.1-D to Table 10.E
1107(j)/20	staff	delete Group R Occupancy from exception to be consistent with SBC 1205(c)
1508/20	WSMC	adopt state wording
2508/21	UPC	change wording to be consistent with UPC 1309

smclist

BUILDING CODE ADVISORY BOARD ROSTER
October 00

BOARD MEMBER	REPRESENTING
Sue Alden NBBJ Group 111 South Jackson Street Seattle, WA 98104 (223-5073)	American Institute of Architects (AIA)
Gene Colin Ferguson Construction 7433 Fifth Avenue South Seattle, WA 98108 (767-3810)	Associated General Contractors (AGC)
Marjorie Conradt Skilling Ward Magnusson Barkshire Pacific First Center - #500 1420 Fifth Avenue Seattle, WA 98101-2341 (292-1200)	Structural Engineers' Association (SEAW)
Keith Elder Iverson Elder, Inc. 22025 20th Avenue S.E. #1100 Bothell, WA 98021 (483-1250)	American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE)
Tom Harader Harader Mebust Group, Inc. 1219 Westlake Avenue North #200 Seattle, WA 98121 (284-1651)	Seattle Master Builders(SMB)
Alexander Hicks 7619 S.E. 37th Place Mercer Island, WA 98040 (232-9478)	General Public
Jesse Jones, Sr. Union Local #242 2800 First Avenue Seattle, WA 98121 (441-0470)	Organized Labor
Terry McCann Huckell/Weinman Associates, Inc. 205 Lake Street South #202 Kirkland, WA 98032 (828-4463)	Greater Seattle Chamber of Commerce
Carole Martens 8035 42nd Avenue N.E. Seattle, WA 98115 (524-4921)	General Public
Bob Messer Skinner Building #525 1326 Fifth Avenue Seattle, WA 98101 (223-5035)	Building Owners and Managers Association (BOMA)
Elsa Young 1601 East Boston Terrace Seattle, WA 98112 (323-3482)	Apartment Association of Seattle and King County

****

Seattle Fire Department	Chief B. L. Hanson (6-1450)	04-44-04
DCLU	Dennis J. McLerran, Director (4-8899)	01-04-03

BCAB MECHANICAL CODE COMMITTEE (for '91 SMC review)

Keith Elder
Iverson-Elder, Inc.
22025 20th Ave. S.E. #1100
Bothell, WA 98021-4406

Rick Ward
Notkin Engineering
2614 Fourth Avenue #420
Seattle, WA 98121

Richard Calvert
Esmond Petska & Assoc.
101 Stewart Street #925
Seattle, WA 98101

Ed Besch
Oil Heat Institute
3820 Stone Way North
Seattle, WA 98103

Glenn Frye
Washington Natural Gas
815 Mercer Street - 4th floor
Seattle, WA 98109

Ronn M. Parsley
ACCO
6952 South 220th Street
Kent, WA 98032

David Gardner
Amsco Refrigeration
17210 - 109th Place S.E.
Renton, WA 98055

Timothy Sisko
Cascade Air Conditioning
1544 N.W. Ballard Way
Seattle, WA 98107

Bill Nugent
Sno-King Sheet Metal Trust
6810 220th S.W.
Mountlake Terrace, WA 98043

Russ Byrd
Seattle Fire Department
04-44-04

Richard Andersen
Sea.-King Co. Health Depart.
11-06-29

Terry Ross
Code Development and
Community Relations

Robby Liem
Permits & Plans

Frank Watier
Construction Inspections

Tom Kinsman
Permits & Plans

Matt Lampe
Permits & Plans

Jack Weller
Construction Inspections

Kermit Robinson
Code Development and
Community Relations

Wil Hairston
Construction Inspections

Don Gentry
Construction Inspections

Bob Strobel
Construction Inspections

John Hogan
Code Development and
Community Relations

Maureen Traxler
Code Development and
Community Relations

Sherm Westman
Sheet Metal & Air Conditionin
Contractors of Western Was
1200 Westlake Ave. N.
Seattle, WA 98109

Additional Information for Legislative Request

Request for approval to amend the 1991 Seattle Mechanical Code.

1.	Statement of Proposal/Objectives:	An ordinance amending the 1991 Seattle Mechanical Code to incorporate requirements of the Washington State Mechanical Code and the Washington State Ventilation and Indoor Air Quality Code and to make minor editorial corrections.
2.	Dollar Amount Requested:	N/A
3.	Funding Source:	N/A
4.	Commitment:	N/A
5.	New Positions:	N/A
6.	Facilities/Equipment:	N/A
7.	Criteria Used in Program/Project Evaluation:	N/A
8.	Alternative Methods of Funding the Program:	N/A

G:ADDMECH

ESTIMATES OF COST IMPACTS FOR AMENDMENTS TO THE
1991 SEATTLE MECHANICAL CODE

FEBRUARY 1993

The cost estimates which follow include publishing the new code, training staff and writing new Director's Rules and public information documents. Staff time is converted to cost at the rate of $119.90/hour. The overall estimate is $3,326.00. Detailed notes follow the table.

Task		Hours	Cost
1.	Training		
	a. Prepare materials	3	$ 360
	b. Give training	1.5	180
	c. Receive training	22.5	2,698
2.	Copying		
	a. Cost for ordinance	--	44
3.	Publishing		
	a. Cost for code pages	--	44
4.	Map Changes		
	None required	--	--
5.	Revise Directors Rules		
	Not required	--	--
6.	Public Information		
	Not required	--	--
7.	Procedural Changes		
	None required	--	--
8.	Plan Review Time		
	No changes	--	--
9.	Automation		
	No Changes	--	--
10.	New forms		
	None required	--	--
11.	Enforcement		
	No changes	--	--
12.	Code Committee		
	No increase in time	--	--

Task		Hours	Costs
13.	Inspection Impacts None	--	--
14.	Records Management/Microfilm No changes	--	--
15.	New Types of Permits None	--	--
16.	Space and Equipment Costs No changes	--	--
17.	Total for Amendment		$ 3,326

Notes on Estimates of Cost Impacts for
Amendments to the 1991 Seattle Mechanical Code
February 1993

Task		Hours	Costs
1.	Training		
	a. Prepare materials		
	3 staff	3.0	$ 360
	b. Give training		
	3 staff	3.0	180
	c. Receive training		
	(most during regular staff meetings)		
	Energy-Mechanical plan examiners (4) and Mechanical inspectors (3) and Intake (1) (8 x .5)	4.0	
	Building plan examiners (24 x .5 hours)	12.0	
	Building inspectors (13 x .5 hour)	6.5	
		22.5	2,698
2.	Copying		
	Cost for ordinance		
	22 pages x $0.04/page x 50 copies	--	44
3.	Publishing		
	Cost for code insert pages		
	22 pages x $0.04/page x 50 copies	--	44

g:costrpt

93-78

City of Seattle

Executive Department—Office of Management and Budget

Diana Gale, Director
Norman B. Rice, Mayor

Approved as to form
MK 4/1/93

March 19, 1993

The Honorable Mark Sidran
City Attorney
City of Seattle

Attention: Margaret Klockars

Dear Mr. Sidran:

The Mayor is proposing to the City Council that the enclosed legislation be adopted.

REQUESTING DEPARTMENT	Construction and Land Use
SUBJECT:	AN ORDINANCE amending the Seattle Mechanical Code and Seattle Building Code to incorporate changes in requirements of the Washington State Ventilation and Indoor Air Quality Code, the Washington State Building Code, and the Washington State Mechanical Code.

Pursuant to the City Council's S.O.P. 100-014, the Executive Department is forwarding this request for legislation to your office for review and drafting.

After reviewing this request and any necessary redrafting of the enclosed legislation, return the legislation to OMB. Any specific questions regarding the legislation can be directed to Daniel Becker at 684-8073.

Sincerely,

Norman B. Rice
Mayor

by
Diana Bec for
DIANA GALE
Budget Director

DG/db/rs

Enclosure

cc: Director, DCLU

STATE OF WASHINGTON - KING COUNTY

29976
City of Seattle

—ss.

No.

Affidavit of Publication

The undersigned, on oath states that he is an authorized representative of The Daily Journal of Commerce, a daily newspaper, which newspaper is a legal newspaper of general circulation and it is now and has been for more than six months prior to the date of publication hereinafter referred to, published in the English language continuously as a daily newspaper in Seattle, King County, Washington, and it is now and during all of said time was printed in an office maintained at the aforesaid place of publication of this newspaper. The Daily Journal of Commerce was on the 12th day of June, 1941, approved as a legal newspaper by the Superior Court of King County.

FILED
CITY OF SEATTLE
93 MAY 14 PM 3:10
CITY CLERK

The notice in the exact form annexed, was published in regular issues of The Daily Journal of Commerce, which was regularly distributed to its subscribers during the below stated period. The annexed notice, a

ORD:116656

was published on

05/11/93

The amount of the fee charged for the foregoing publication is the sum of $, which amount has been paid in full.

A Hardman

Subscribed and sworn to before me on

05/11/93

Notary Public for the State of Washington,
residing in Seattle

City of Seattle Ordinances

City of Seattle
ORDINANCE 116656

AN ORDINANCE amending the Seattle Mechanical Code, Chapter 22.400 of the Seattle Municipal Code, as adopted by Ordinance 116011 to incorporate requirements of the Washington State Mechanical Code and the Washington State Ventilation and Indoor Air Quality Code and to make minor editorial corrections.

BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. Subsection 301(c) of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

Sec. 301. (c) Exempted Work. (Refrigeration). A refrigeration permit shall not be required for the following:

1. Any self-contained refrigerating equipment for which an operating permit is not required.

2. Any unit refrigeration system which does not exceed three horse-power rating.

Exemption from the permit requirements of this mechanical code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provision of this mechanical code or any other laws or ordinances of the City.

Section 2. Section 415 of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

M

Sec. 415. MACHINERY ROOM. See REFRIGERATION MACHINERY ROOM.

MANUAL. Capable of being operated by human intervention.

MANUFACTURER'S INSTALLATION INSTRUCTIONS are printed instructions included with equipment as part of the conditions of listing.

MASONRY HEATER is a heating system which is predominantly masonry construction, having a mass of at least 1154 pounds (520 kg) excluding chimney and base. Within the masonry mass are contained a firebox and multiple heat exchange channels which store the heat and allow for extremely high temperature fires to be burned.

MECHANICAL JOINT is a gas-tight joint obtained by the joining of metal parts through a positive-holding mechanical construction.

Section 3. Section 421 of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

S

Sec. 421. SATURATION PRESSURE of a refrigerant is the pressure at which there is stable coexistence of the vapor and liquid or the vapor and solid phase.

SELF-CONTAINED means having all essential working parts except energy and control connections so contained in a case or framework that they do not depend on appliances or fastenings outside of the machine.

SHAFT is an interior space enclosed by walls or construction extending through one or more stories or basements which connects openings in successive floors or floors and roof, to accommodate elevators, dumbwaiters, mechanical equipment or similar devices to transmit light or ventilation air.

SHAFT ENCLOSURE is the walls or construction forming the boundaries of a shaft.

SLEEVE. A factory-built chimney fitting designed to protect combustible materials when it is necessary to penetrate a combustible wall to connect to a chimney.

SMOKE DETECTOR is an approved device that senses visible or invisible particles of combustion.

SOLDERED JOINT is a gas-tight joint obtained by the joining of metal parts with metallic mixtures or alloys which melt at a temperature below 800°F. and above 400°F.

SOLID FUEL BURNING APPLIANCE is any factory-built ((or-site built)) appliance designed to ((provide-heat-for-a-structure by-burning)) burn solid fuels.

SOURCE SPECIFIC VENTILATION SYSTEM is a mechanical ventilation system including all fans, controls, and ducting, which is dedicated to exhausting contaminant-laden air to the exterior of the building from the room or space in which the contaminant is generated.

STOP VALVE is a device to shut off the flow of refrigerant.

SUBSTANTIALLY AIRTIGHT DUCTS are welded or gasketed ducts which are mechanically fastened.

SYSTEM is a combination of equipment and/or controls, accessories, interconnecting means, and terminal elements by which air is transferred.

Section 4. Section 423 of the Seattle Mechanical Code, 1991 Edition is amended as follows:

U

Sec. 423. U.B.C. STANDARDS is the Uniform Building Code Standards 1991 Edition.

UNCONDITIONED SPACE. (See CONDITIONED SPACE).

UNCONFINED SPACE is a room or space having a volume equal to at least 50 cubic feet per 1000 Btu/h of the aggregate input rating of all fuel-burning appliances installed in that space. Rooms communicating directly with the space in which the appliances are installed, through openings not furnished with doors, are considered a part of the unconfined space.

UNIT HEATER is a heating appliance designed for nonresidential space heating and equipped with an integral means for circulation of air.

UNIT REFRIGERATION SYSTEM is a refrigerating unit which has been factory assembled and tested prior to its installation. Such unit shall not be connected to any ductwork. The unit shall be a complete one-unit package without remote parts.

UNLISTED, AS TO APPLIANCES, EQUIPMENT AND MATERIALS are those products which are not listed as having been tested for compliance with nationally recognized safety standards. Used, antique and homemade appliances are included in this definition.

UNPROTECTED TUBING is tubing which is not protected by enclosure or suitable location so that it is exposed to crushing, abrasion, puncture or similar mechanical damage under installed conditions.

UNUSUALLY TIGHT CONSTRUCTION is construction ((permitted-on or-after-October-86;-1986)) where:

(a) Walls and ceilings exposed to the outside atmosphere have a continuous water vapor retarder with a rating of one perm or less with any openings gasketed or sealed, and

(b) Weatherstripping on openable windows and doors, and

(c) Caulking or sealants are applied to areas such as joints around window and door frames, between sole plates and floors, between wall-ceiling joints, between wall panels and at penetrations for plumbing, electrical and gas lines and at other openings; and

(d) Any building constructed under the 1986 or 1991 Seattle Energy Code, 1986 or 1991 Washington State Energy Code, 1986 or 1990 Northwest Energy Code or equivalent.

Section 5. Table 6-A of the Seattle Mechanical Code, 1991 Edition, is amended as follows:

TABLE NO. 6-A

SIZE OF COMBUSTION-AIR OPENINGS OR DUCTS[1]

COLUMN I	COLUMN II
Existing Buildings of Ordinary Tightness	New Construction and Existing Buildings of Unusually