

# Development Services

## From Concept to Construction

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### APPEAL SUMMARY

**Status:** Decision Rendered

**Appeal ID:** 9956

**Project Address:** 2527 SE Ankeny St, Building B, Unit 5

**Hearing Date:** 8/7/13

**Appellant Name:** Dylan Lamar

**Case No.:** B-014

**Appellant Phone:** 503-804-1746 x3

**Appeal Type:** Building

**Plans Examiner/Inspector:** Jody Orrison

**Project Type:** residential

**Stories:** 2 **Occupancy:** R-3 **Construction Type:** V-B

**Building/Business Name:** Ankeny Row, Bldg B, Unit 5

**Fire Sprinklers:** Yes - 13D throughout

**Appeal Involves:** Erection of a new structure

**LUR or Permit Application No.:** 13-173274-SD, 13-173301-CO, 13-173296-RS

**Plan Submitted Option:** pdf [File 1] [File 2] [File 3] [File 4] **Proposed use:** Residential, Townhouse

### APPEAL INFORMATION SHEET

#### Appeal item 1

**Code Section** R302.2.4.4

**Requires** Unenclosed eave of a townhouse within 3 ft of a common (assumed) property line with roof framing parallel to property line is limited to a 24 inch projection. One hour fire resistive protection is required.

**Proposed Design** The proposed design includes an unenclosed eave with a 48 inch projection which is continuous across the assumed common property line between townhouses. The proposed design places sidewall sprinklers below the eaves at the assumed common property lines, providing coverage of the eave for more than 3ft in each direction.

An NFPA 13D sprinkler is provided throughout the structure due to portions of the building's exterior being more than 150 ft from the street. However the eaves of concern are located within 150 ft of the street.

**Reason for alternative** Proper exterior shading of windows is important to meet the sustainability objectives of the building, which include net-zero energy performance. The building has a highly energy-efficient envelope with a peak heating load of a typical dwelling being 1,500 Watts, about the size of a hair dryer. As a result the interior environment is very sensitive to unwanted solar gain which can cause overheating even in winter months. Exterior shading (as opposed to interior shades) is necessary to effectively mitigate this solar heat.

If the eave were limited to a 24 inch projection within 3 feet of the assumed common property line the windows below would not be properly shaded and overheating would frequently result. Operable exterior louvered shade systems are available but cost-prohibitive.

## Appeal item 2

**Code Section** R302.2.2.2.3

**Requires** Requires non-combustible or heavy timber deck within 3ft of assumed common property line when not adjacent to another deck.

**Proposed Design** The proposed design includes a light-framed cedar or ipe deck, over a low-slope membrane roof, within 3 ft of an assumed common property line. The proposed design place a sidewall sprinkler below the eaves at the assumed common property lines, which provides coverage of the deck for 3ft from the common property line and the full depth of the deck below (see A13.0 attached).

An NFPA 13D sprinkler is provided throughout the structure due to portions of the building's exterior being more than 150 ft from the street. However the deck of concern is located within 150 ft of the street.

**Reason for alternative** The sprinkler head of concern is anticipated due to a related appeal for a 48" eave projection at this location (necessary for proper solar shading). Since this head will also provide coverage of the full area of the deck adjacent to the common property line, the need a non-combustible deck is diminished. We seek to use either cedar or ipe decking and sleepers at this location to maintain the residential character of the building and avoid the need for a commercial concrete paving system.

Ipe meets NFPA Class A and UBC Class 1 when tested under ASTM Test Method E84. Flame spread, smoke developed values, and fuel contribution ratings under this test indicate that ipe is not readily flammable and does not readily carry or communicate fire, thus offering a moderate degree of fire protection.

The use of Ipe hardwood is cost effective, meets sustainability objectives, is attractive, and is very durable. Although it does not have test documentation to demonstrate that it is non-flammable, tests have been done to show that it inherently has very low flammability characteristics.

## Appeal item 3

**Code Section** M1503.1, M1503.4

**Requires** Calls for range hoods to exhaust directly to outdoors with an exhaust rate of 150cfm, intermittent.

**Proposed Design** The proposed design uses a whole-house heat-recovery ventilation (HRV) system in each unit, which provides balanced flow to/from the outdoors. An air-extract port of the HRV system is located in each kitchen area which exhausts between 25 and 35cfm continuously from the kitchen area. Recirculating range hoods are provided which include charcoal filters to collect airborne cooking grease. The owner-occupants are in favor of this design for the reasons outlined below.

**Reason for alternative** Sustainability objectives of the development include net-zero energy performance through "Passivhaus" construction techniques. These include super-insulation, airtightness (<0.6 ACH50), and heat-recovery ventilation (92% efficient heat recovery). The resulting peak heating load of a typical dwelling is 1,500 Watts, about the size of a hair dryer.

Direct exhaust appliances such as range hoods compromise these energy-efficiency investments and make energy performance objectives more challenging and costly to meet. Additionally, with such a tight envelope, a direct-exhaust range hood may require a make-up air duct which would increase thermal losses further.

The proposed design uses a whole-house heat-recovery ventilation system which continuously exhausts polluted, moisture-laden air from kitchens and bathrooms. The proposed kitchen exhaust rate of 25-35cfm continuous meets OMSC 2010 requirements. Over a 24 hour period the HRV system will exchange house air nearly 5 times. As a comparison, a code-equivalent exhaust system with range hood, bathroom fans and clothes dryers each run an hour per day would result in 1 air exchange in a 24 hour period (see included calculations).

Experience with several Passivhaus projects locally and accounts from many such projects throughout the US and Europe has confirmed the safety and functionality of the proposed ventilation system.

## APPEAL DECISION

**1a. Non-rated construction at eave within 3 ft of a common property line: Granted as proposed.**

**1b. Eave projection at roof framing parallel to the common property line: Granted as proposed.**

**2. Combustible material for deck construction within 3 ft of a common property line: Granted for IPE only and provided no eave vents are located in eaves of roof over deck.**

**3. Recirculating residential range hood: Granted as proposed.**

The Administrative Appeal Board finds that the information submitted by the appellant demonstrates that the approved modifications or alternate methods are consistent with the intent of the code; do not lessen health, safety, accessibility, life, fire safety or structural requirements; and that special conditions unique to this project make strict application of those code sections impractical.