

Stuart Silk Architects

August 1, 2019

Project Number: 1902-087

Project Address: 4150 Boulevard Pl, Mercer Island, WA 98040

Mercer Island Fire Marshal's Office
Attn: Stephen Mair
3030 78th Avenue SE
Mercer Island, WA 98040

Fire Code Alternate Request

We are requesting alterations to the Mercer Island Fire Code, Title 17, per 2012 IFC – (A) 104.9 Alternative Materials and Methods.

Project Narrative

The project is a proposed new single family residence located within a wooded site off of Boulevard Pl. Per the fire plan review on 3-12-2019, from Mercer Island's Fire Marshal's Office, there is a declared fire area of 5,766 square feet. There is a code deficiency identified in section six (6) of the fire plan review, regarding drive width, which is less than 12 feet for the access road to the property.

Hydrant ID number D3-40 with a PSI of 74, has been installed and is available for serving our property and proposed building. The flow required with sprinkler reduction is 1000 GPM @ 20 psi (50% reduction from required flow without sprinklers). We have an available flow rate of 1502 GPM @ 20 psi. The distance from the hydrant to all building points on our property (furthest point) is 330 feet, which is allowable with sprinklers.

The proposed building, a new 3-level single family residence with an attached garage, will be excavated into the hillside along one side.

Project Alternative Fire Protections:

1. We propose installing a "NFPA 13D-Standard" sprinkler system identified on our fire plan review. This shall include the following, per Mercer Island Residential Sprinkler Standard, MIMC Title 17:

- **Water Flow Alarm:** The sprinkler system shall have installed a means of notification for a water flow event. If we cannot interface the water flow switch to smoke alarms then a separate horn or bell will be required to be located on each level including the lower level of

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the structure for occupant water-flow notification to a minimum of 75 dBA in the sleeping rooms.

- **Garage Entry Door Coverage:** A single sprinkler head shall be installed inside the garage, above the door from the house to the garage, to provide protection and notification in the event of a car fire.
 - **Sprinkler System Drain:** The system shall be piped all the way to the exterior of the building and not cause damage to landscaping while water is flowing.
 - **Spare Head Box:** A cabinet containing a minimum of two spare heads of each type and a sprinkler wrench shall be provided.
 - **Bathroom Coverage:** All bathrooms regardless of size shall be covered.
 - **Closet Coverage:** All closets in common areas or egress pathways shall be covered.
 - **Water Flow Monitoring:** Water flow monitoring by a central station is required.
 - **Exterior Fuel Fired Equipment Coverage:** Any covered porch with natural gas outlet is required to have sidewall sprinkler coverage using an Intermediate temperature sprinkler head.
2. Installation of a monitored “Household Fire Alarm System” per NFPA 72, Chapter 29.
 3. Solid Core or fire rated doors throughout building.

Summary Statement:

We believe the proposed is equal to or better than the code requirement.

Included submittals:

Mercer Island Fire Plan Review, March 12, 2019

This report has been prepared by:

ERIK BREDBERG

Erik Bredberg, Architect, Stuart Silk Architects



Mercer Island Fire Marshal Office
 3030 78th Avenue SE
 Mercer Island, WA 98040
 (206) 275-7966

Permit No: 1902-087

FIRE PLAN REVIEW

Name: _____

Address: 4150 BOULEVARD PL.

1. PROJECT TYPE

- NSF
- Alteration or Addition

Valuation Ratio
 Proposed Work _____ / Assessed Value _____ =
 _____ % (from Fire Area Work Sheet)

- Exempt structure - detached garage or similar structure less than 750 sf.
- Less than 10% (fire review not required)
- 10 - 49% (monitored Household Fire Alarm System per NFPA 72 Chapter 29, if fire deficiency)
- 50% or greater (substantial alteration)

2. FIRE AREA

- Fire Area = 5766 square feet (sf) (from Fire Area Worksheet)
- ≥ 10000 SF Requires a NFPA 13R or 13 sprinkler system (use 13R sprinkler system as base)

3. FIRE FLOW

Hydrant ID# D3-40 PSI 74
 Flow Required 2000 GPM @ 20 psi (from IFC table B105.1)
 With Sprinkler Reduction 1000 GPM @ 20 psi (50% reduction)
 Available 500 GPM @ 20 psi (Max of 500gpm for a 2-port hydrant)

- Does not meet fire flow even with sprinkler reduction (use 13R sprinkler system as base)

4. HYDRANTS

Number Required: 1 Spacing _____ Max. Frontage _____

- Number Available: 2 Spacing _____ Frontage _____

- Distance from all building points to a hydrant 330 (300' Max, 600' w/ Sprinklers)
- OK w/Sprinklers

5. FIRE ACCESS ROADS

- Distance from all points to access road (150'). 270
- Length provided: 1400 ft.
- Width Required: 26' ($< 500' = 20', \geq 500' = 26'$)
- Width provided: $\geq 16'$ $12' - 16'$ $\leq 12'$
- Radius provided (minimum 28' inside/45' outside): 0 Medset ft.
- Turnaround provided: None Sub Standard Standard
- Grade Provided: $< 10'$ $< 15'$ $< 20'$ $> 20'$ 20'

6. CODE ALT/DEFICIENCIES

- Distance _____
- Length _____ = Width 20' 26'
- Width Provided: _____
- 16'
- 12' - 16'
- ~~12'~~ **(Code Alternate Required)**
- Radius _____
- Turn Around
- Substandard
- None
- Grade _____
- 10' - 15'
- 15' - 20'
- Over 20' **(Code Alternate Required)**

130' + code Alt road