

THE COSTS OF BUILDING TO **WILDFIRE-RESISTANT** **STANDARDS**

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HEADWATERS
ECONOMICS



HEADWATERS ECONOMICS

Maui County, HI



Lewis & Clark County, MT



Coconino County, AZ



La Pine, OR



Roadmap



Homes are fuel



What does it cost?



What are the opportunities?

Roadmap



Homes are fuel



What does it cost?



What are the opportunities?

Homes are a source of fuel.



Roadmap



Homes are fuel



What does it cost?



What are the opportunities?

Roof New Construction



Roof New Construction Cost



2018

Executive Summary

Construction Costs for a Wildfire-Resistant Home

California Edition

June 2022

2022

2024

Retrofitting a Home for Wildfire Resistance
Costs and Considerations

Spring 2024

Retrofitting a Home for Wildfire Resistance
Costs and Considerations

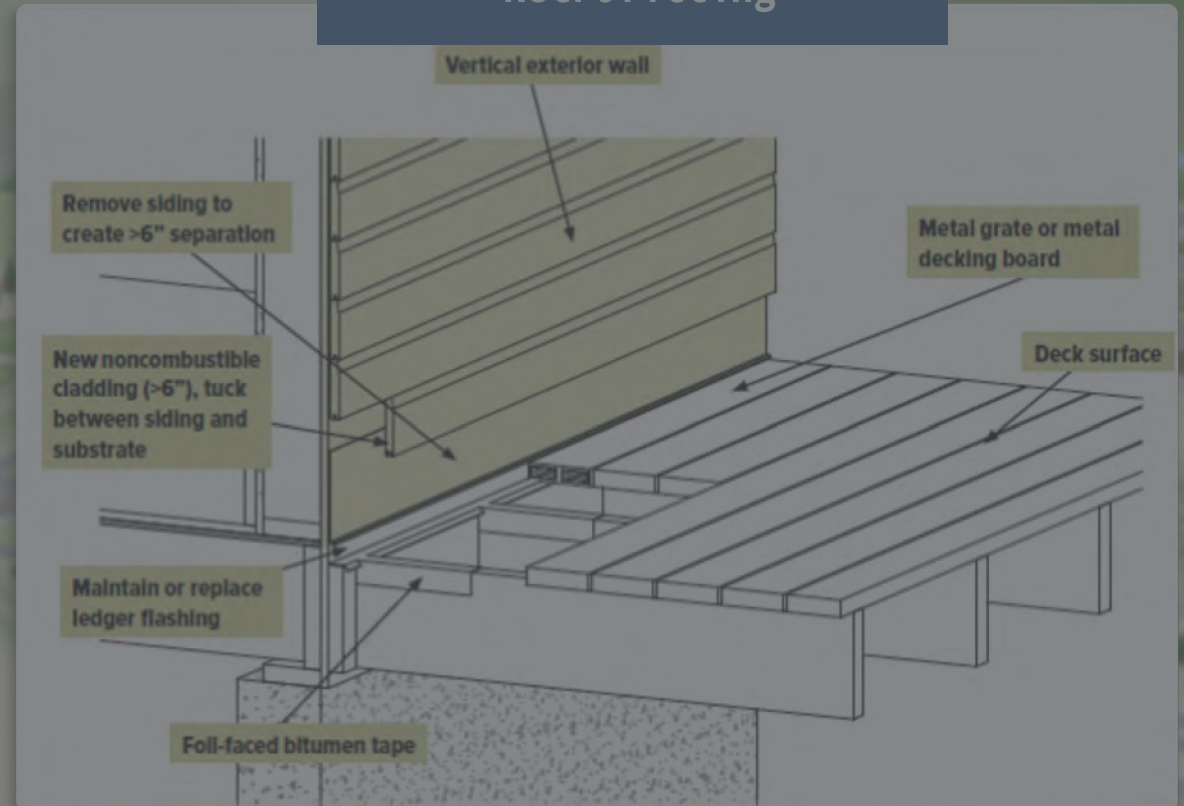
Spring 2024

How much does it cost?

New construction



Retrofitting

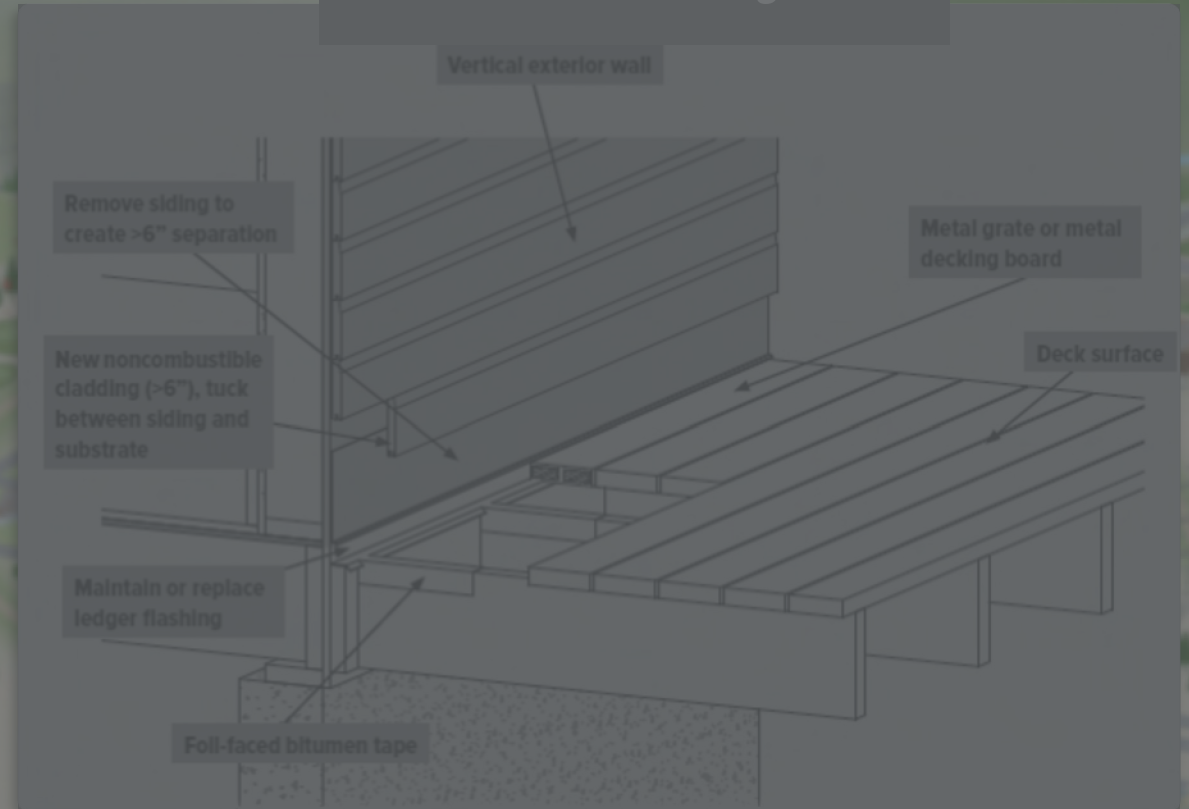


How much does it cost?

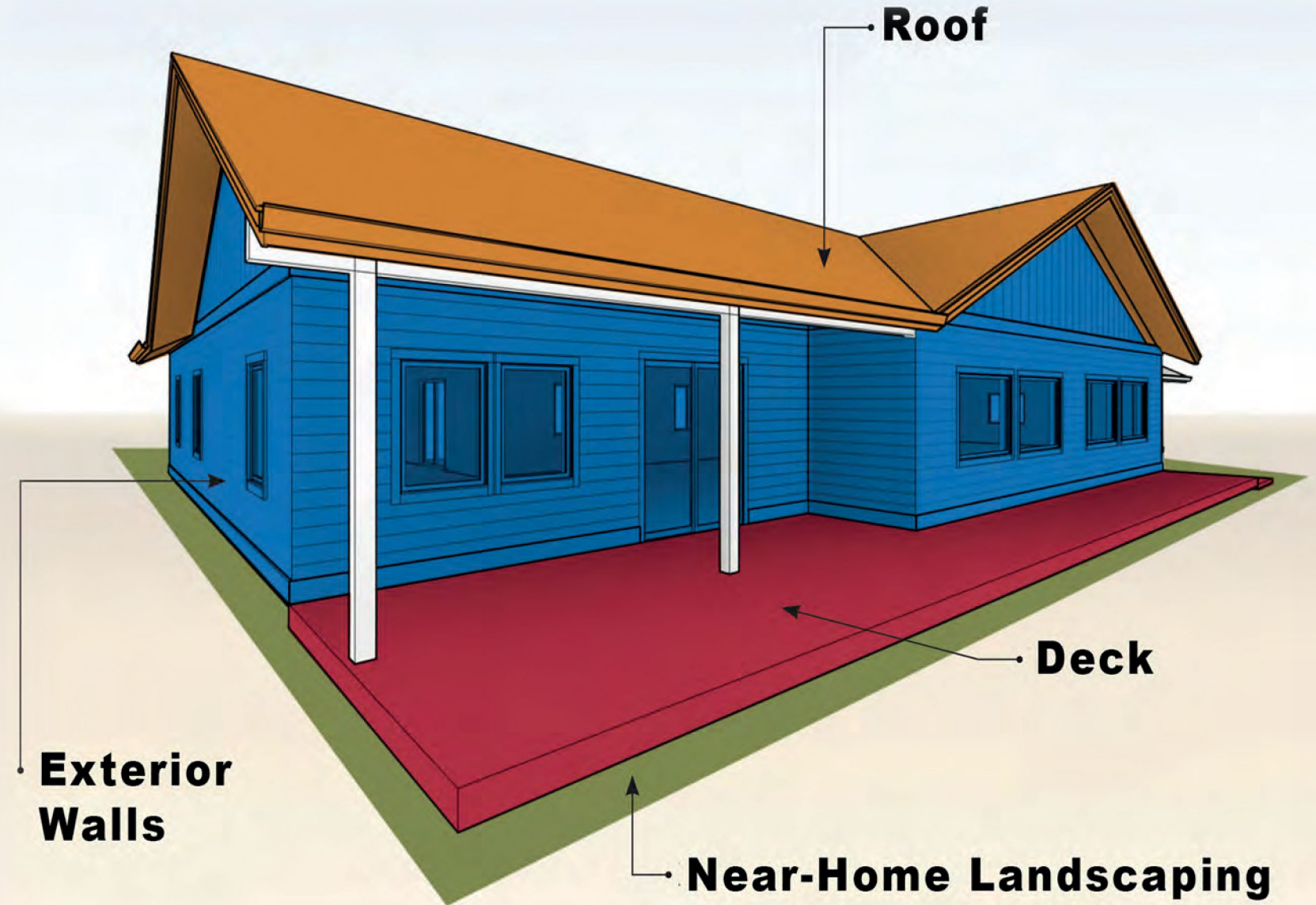
New construction



Retrofitting

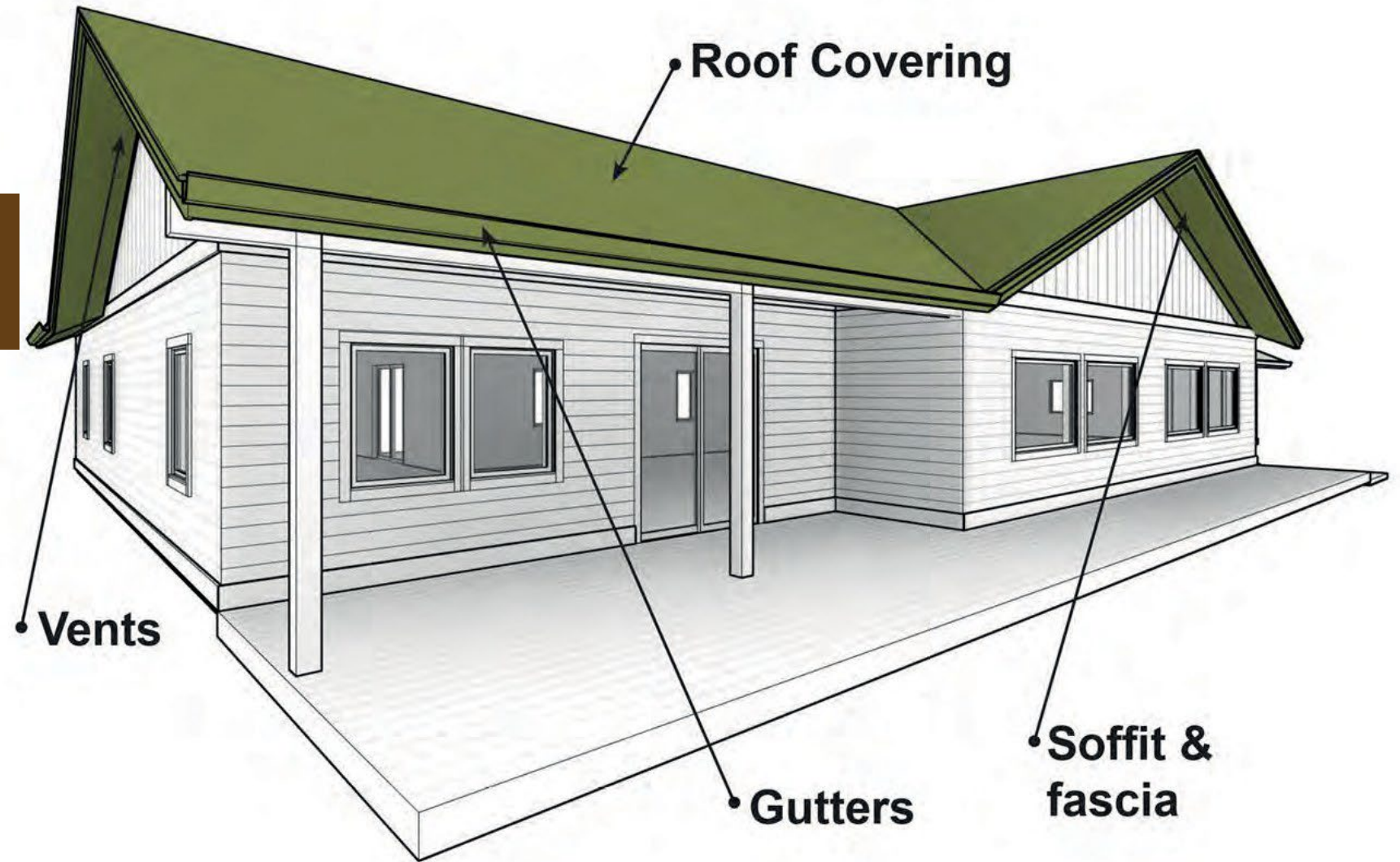


Wildfire-Resistant Costs for New Construction



Wildfire-Resistant Costs for New Construction

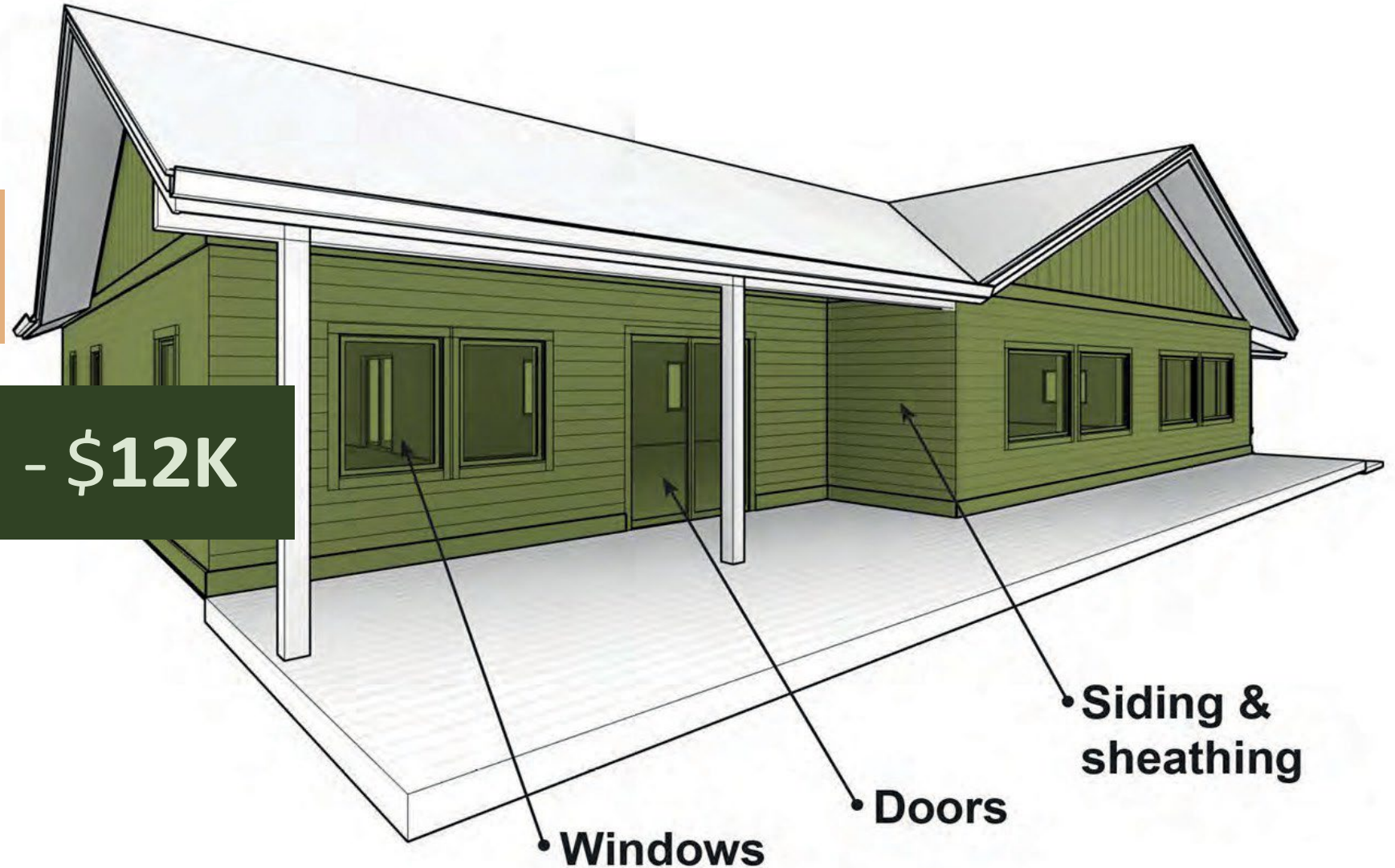
Roof + \$6K



Wildfire-Resistant Costs for New Construction

Roof + \$6K

Exterior Walls - \$12K

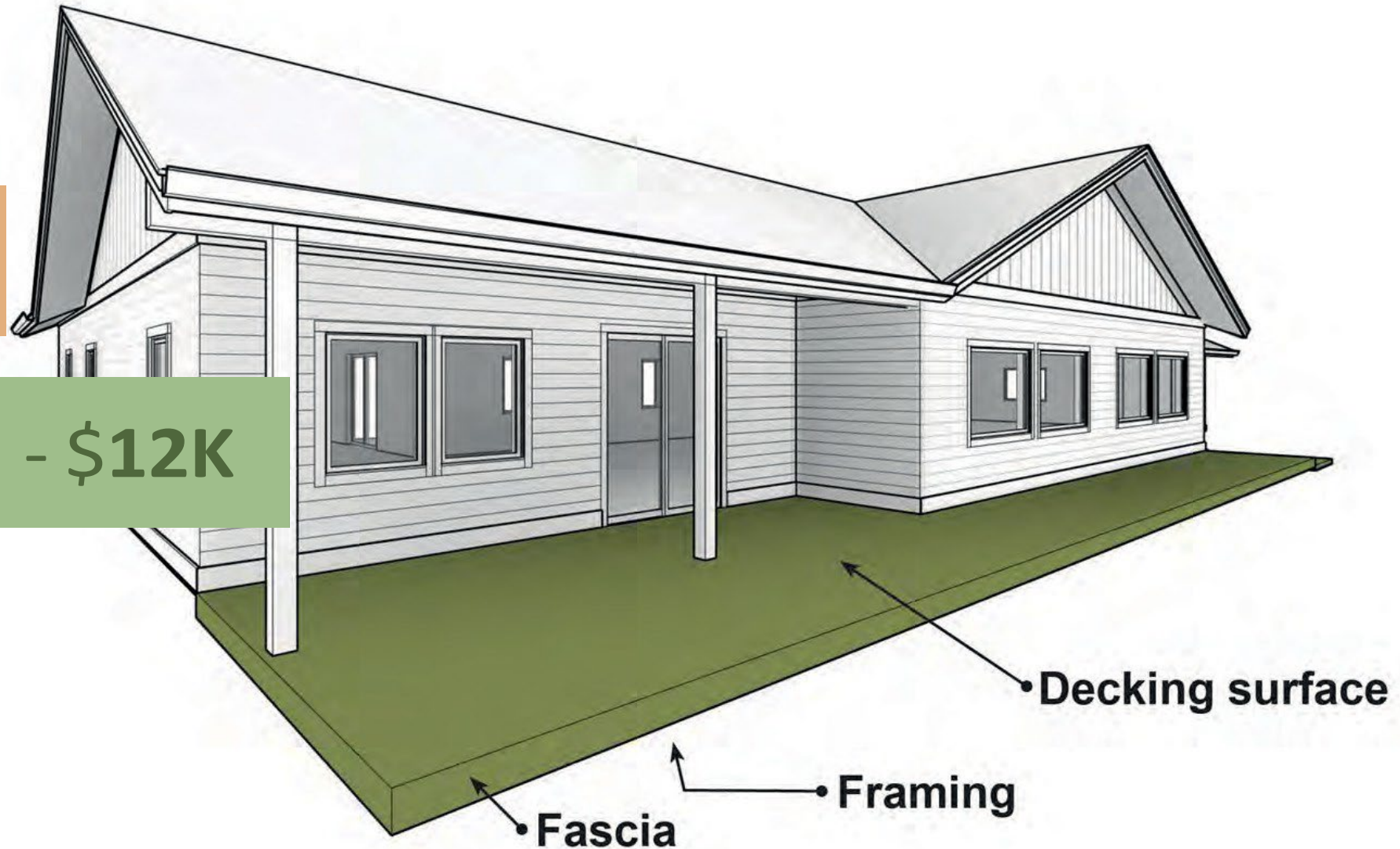


Wildfire-Resistant Costs for New Construction

Roof + \$6K

Exterior Walls - \$12K

Deck + \$2K



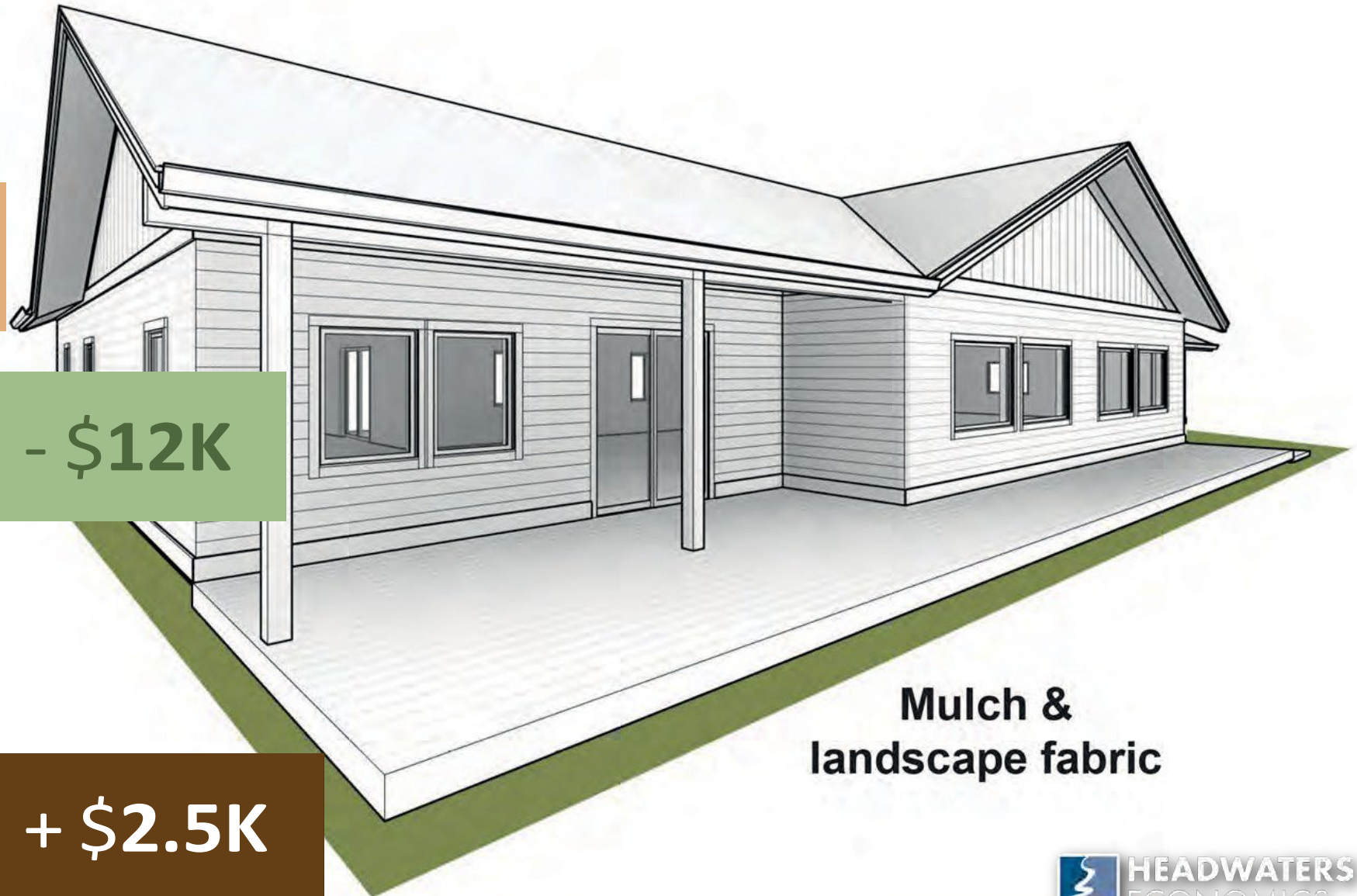
Wildfire-Resistant Costs for New Construction

Roof + \$6K

Exterior Walls - \$12K

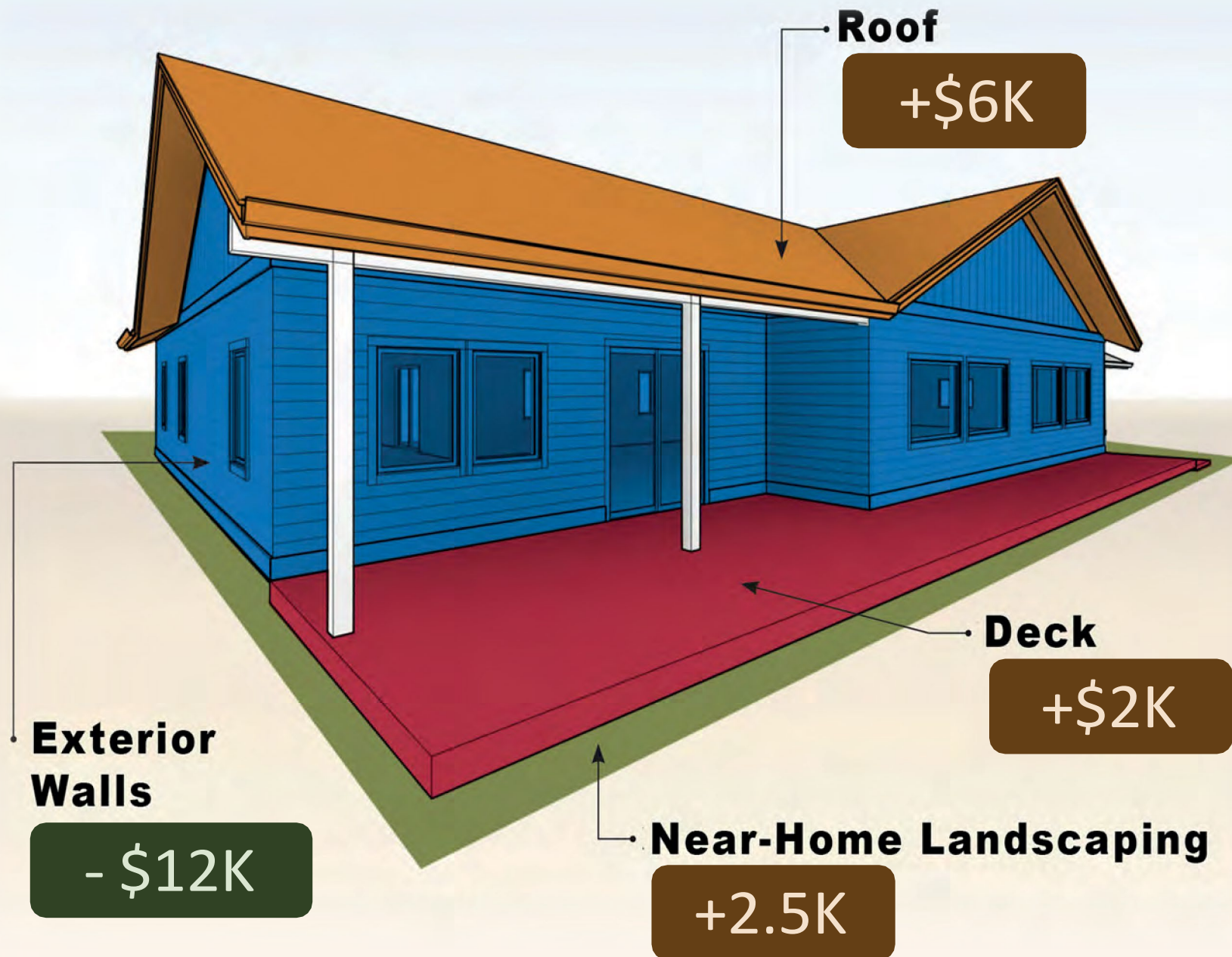
Deck + \$2K

Landscaping + \$2.5K



Mulch &
landscape fabric

Costs are comparable



Adds 10% to building costs

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Retrofitting a Home for Wildfire Resistance Costs and Considerations

Spring 2024



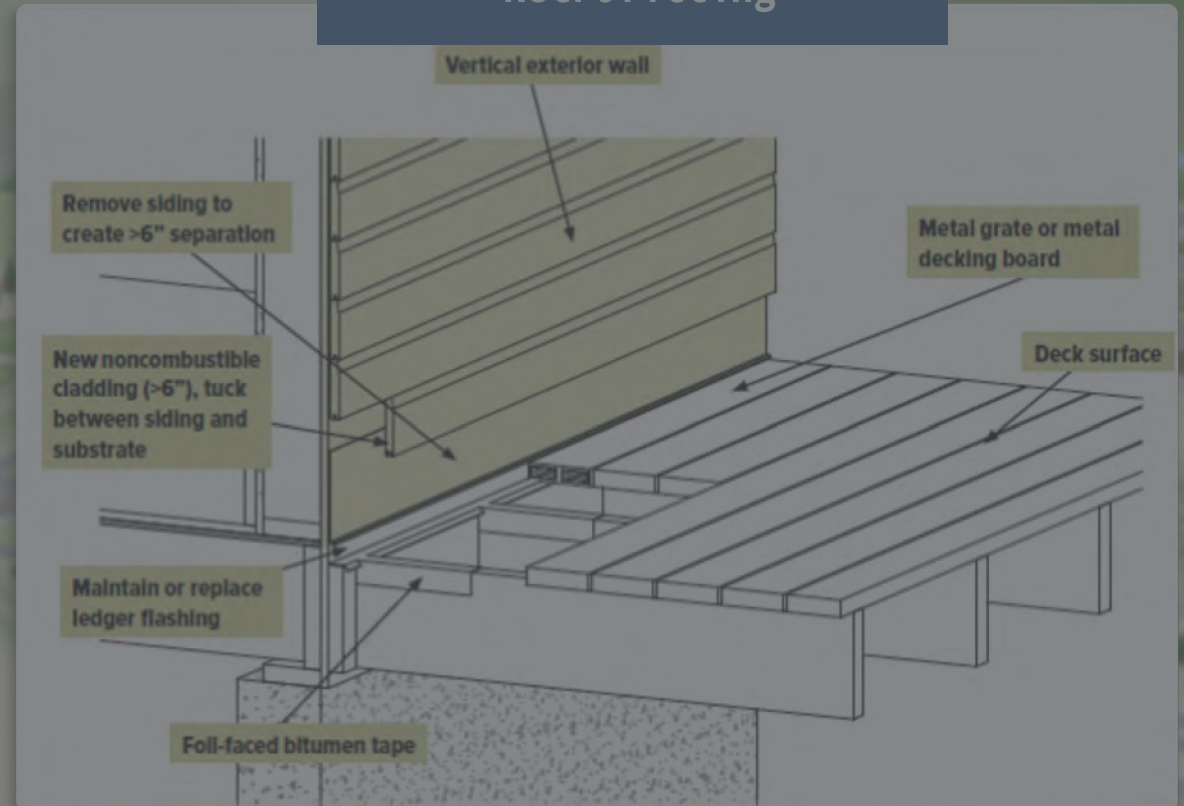
HEADWATERS ECONOMICS

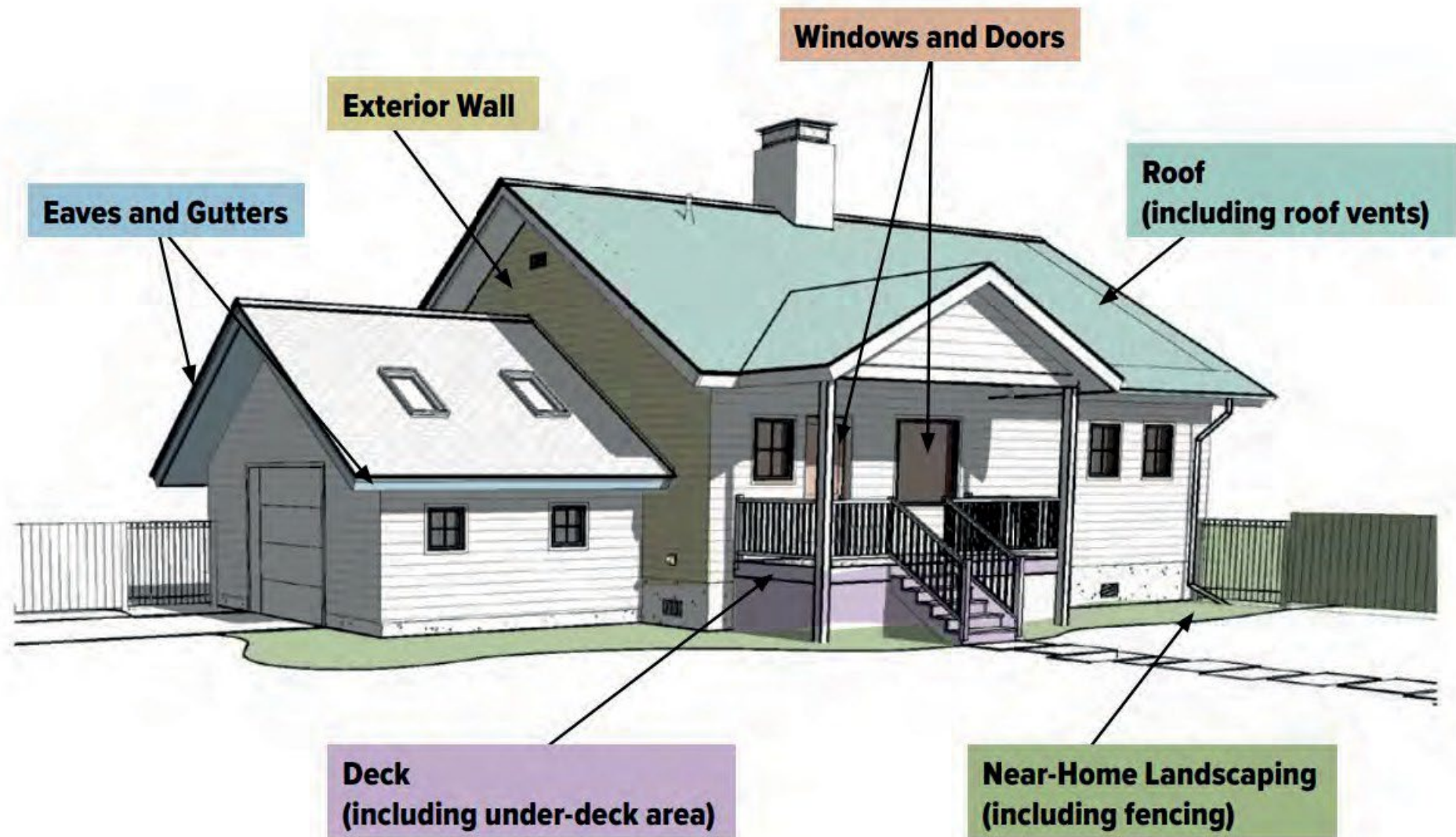
How much does it cost?

New construction

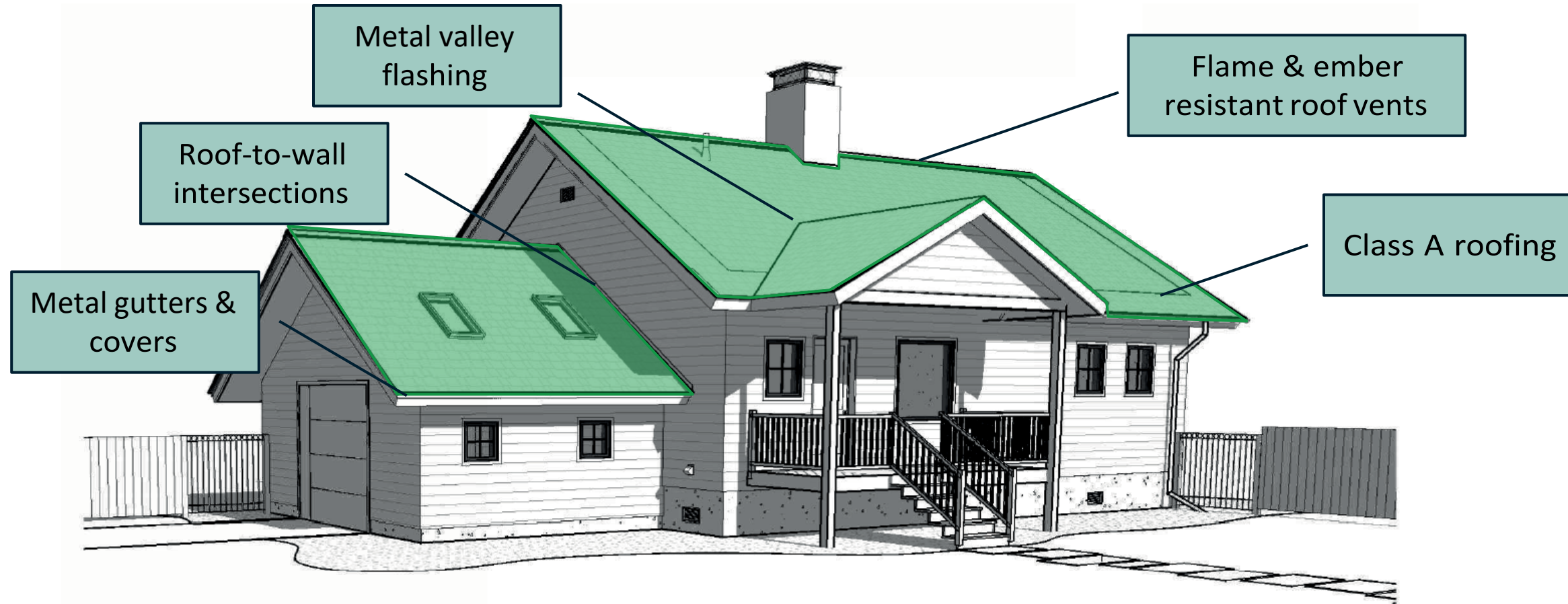


Retrofitting

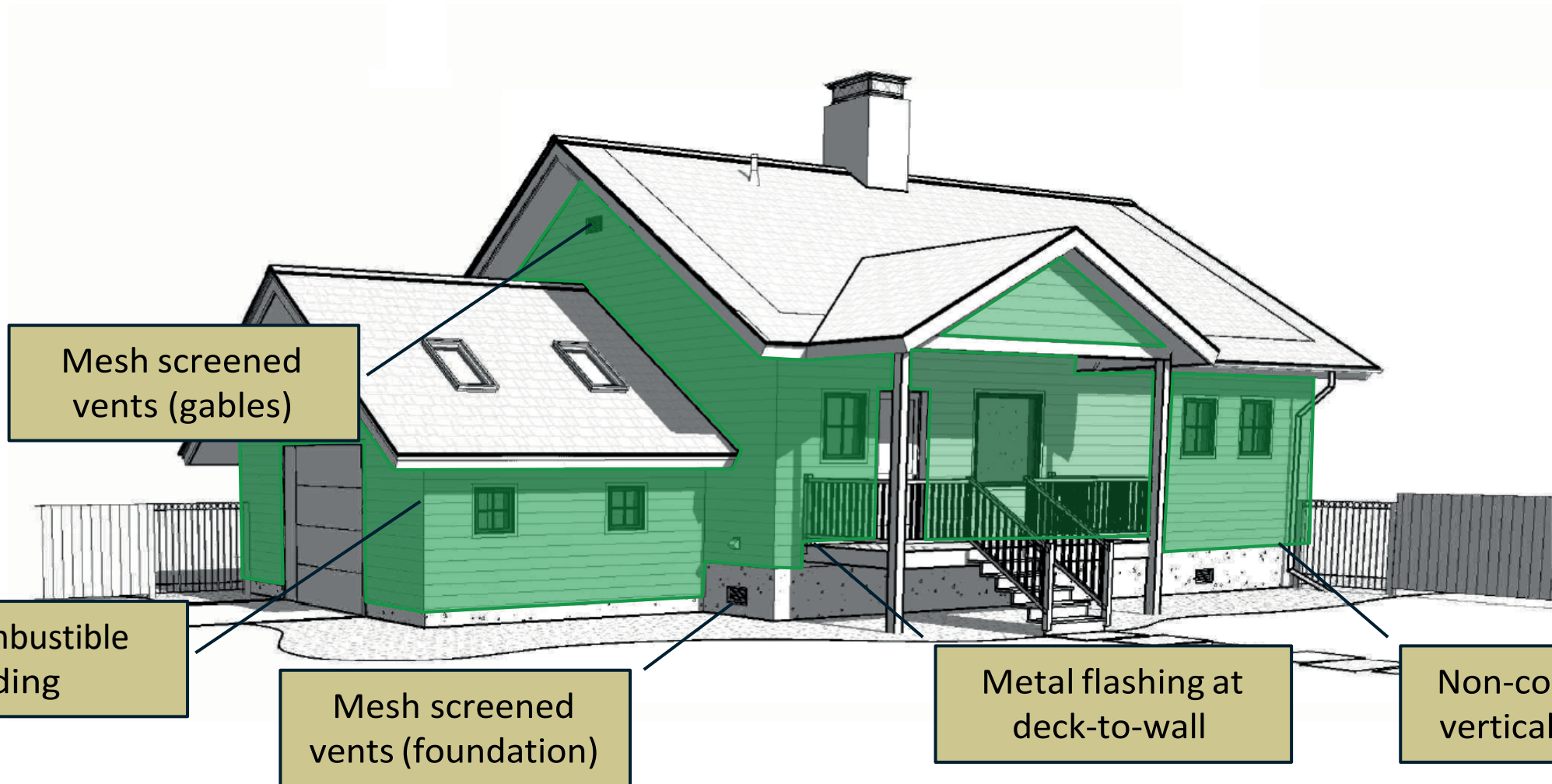




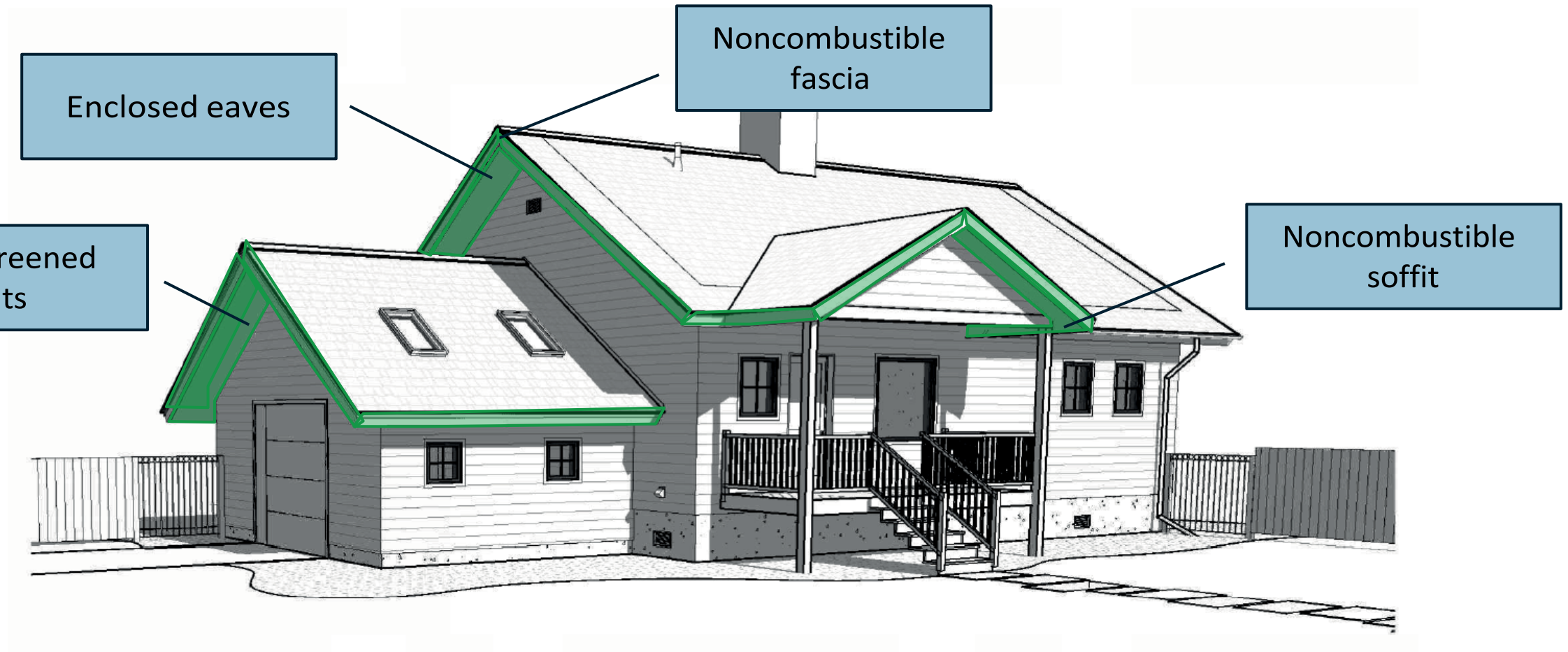
1. Roof and Gutters



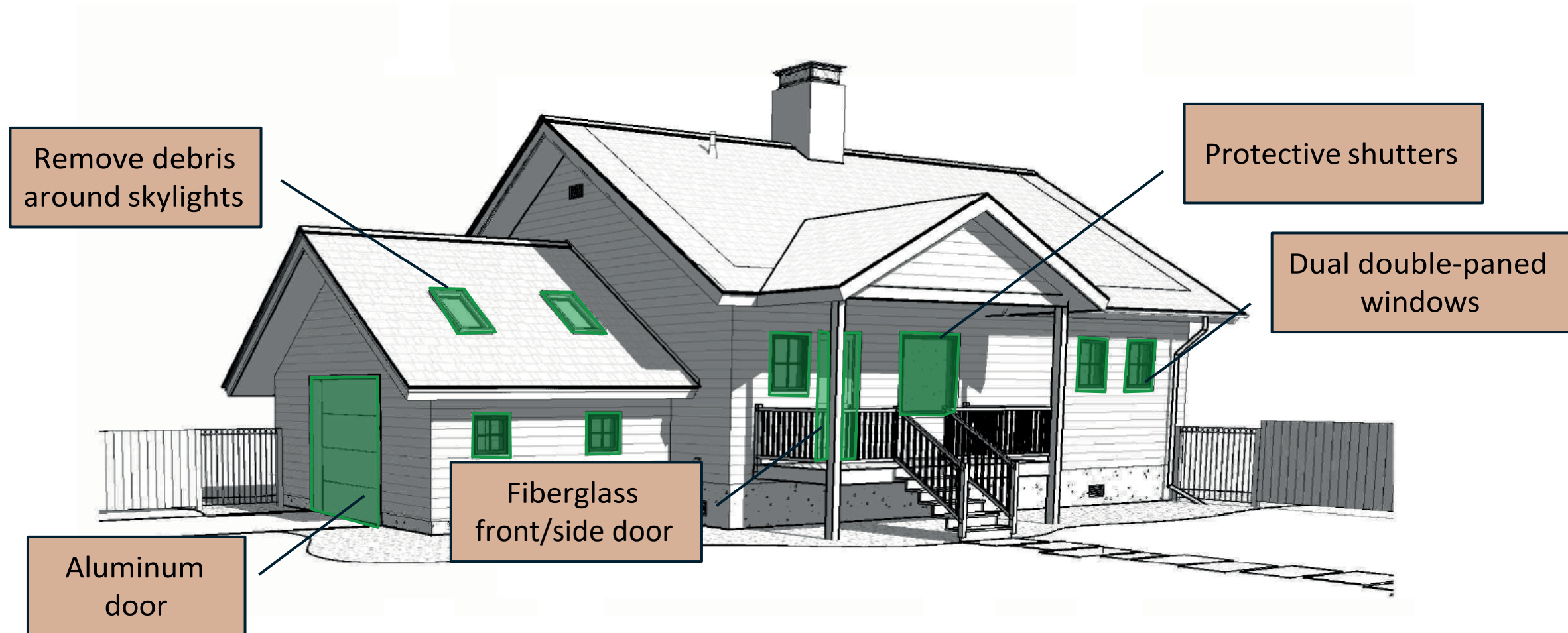
2. Exterior Walls



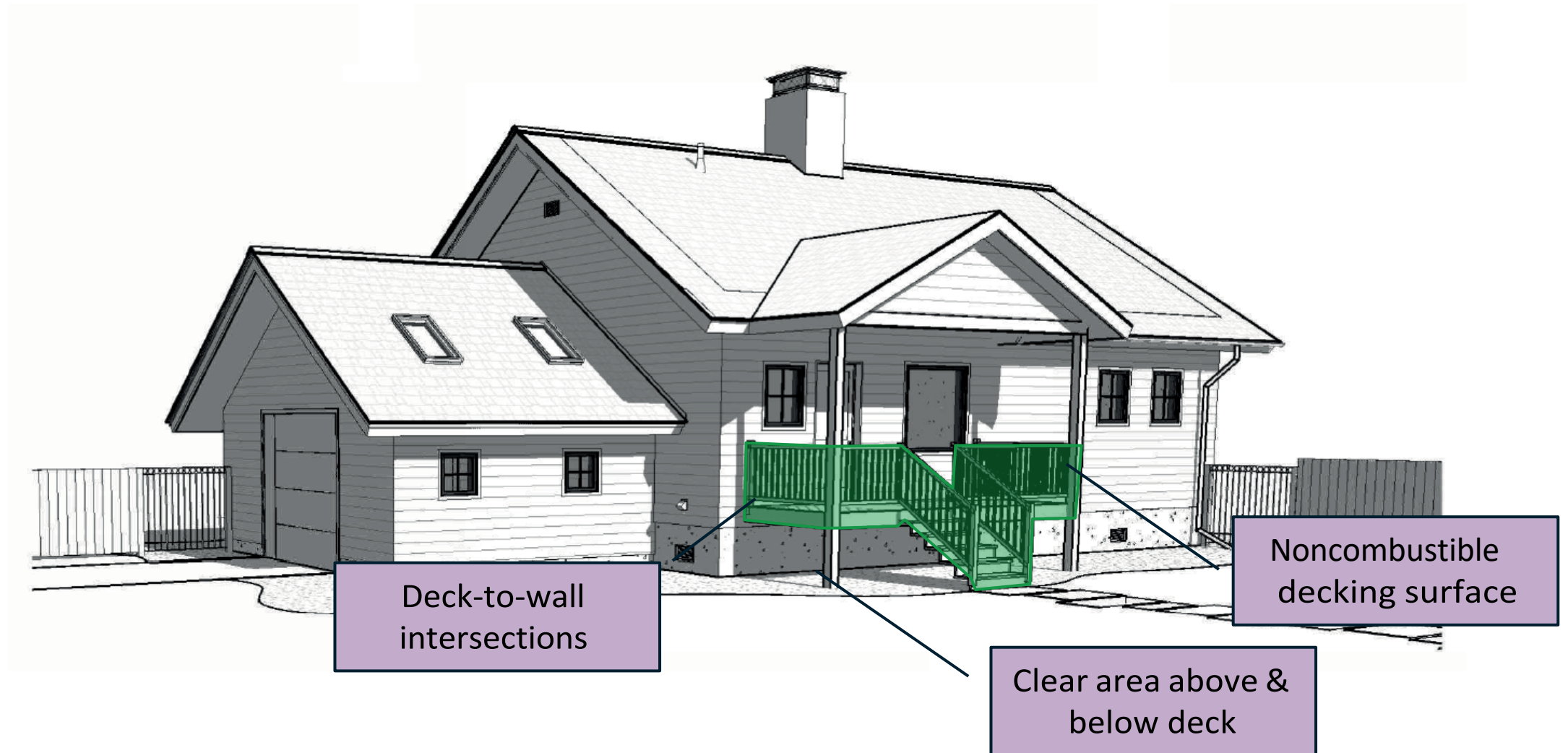
3. Eaves



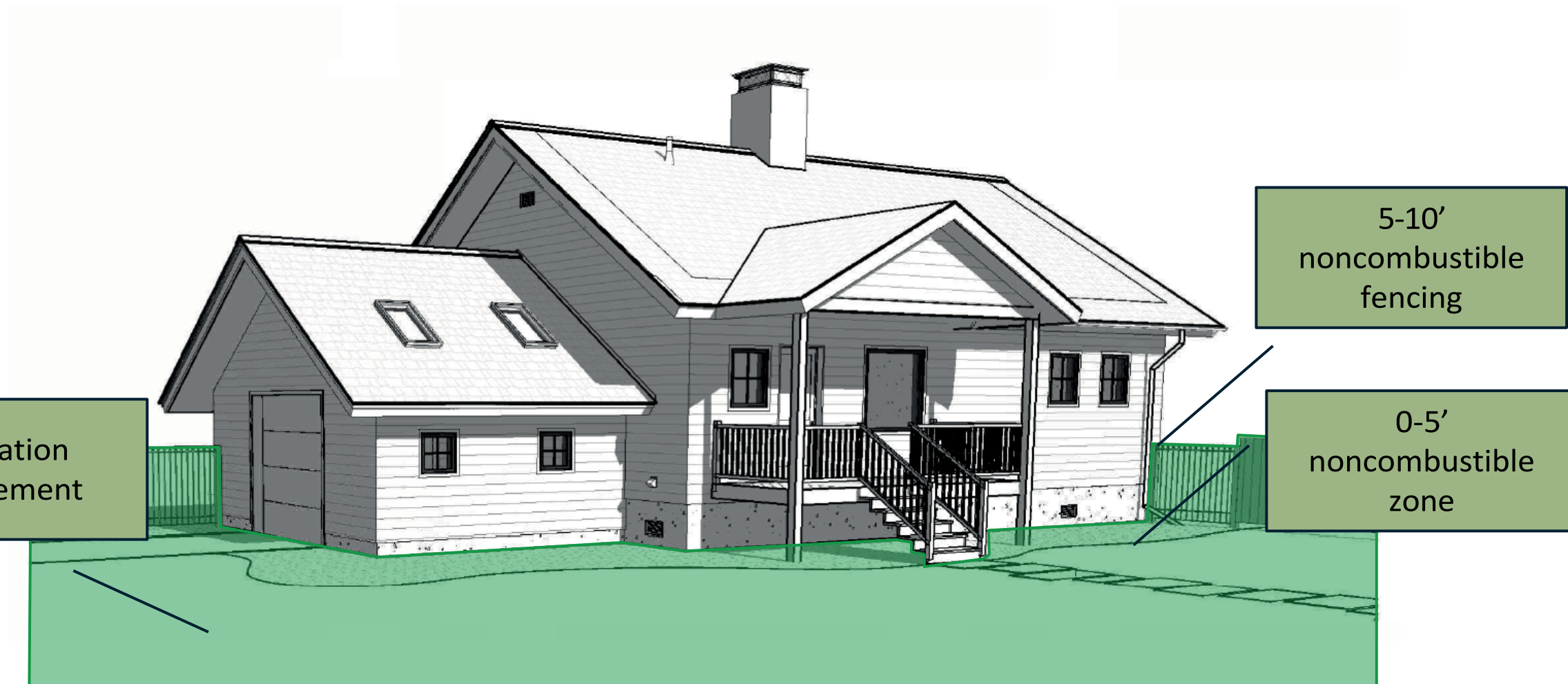
4. Doors and Windows



5. Decks



6. Near-home landscaping



“Best” Wildfire Resistance Measures

\$30K - \$60K+

Flame- and ember resistant vents

Clean roof valleys and gutters

6” metal flashing at deck-to-wall intersections

Noncombustible gutter system

Noncombustible mulch and fence

Class A roof covering

Enclosed eave with non-combustible soffit

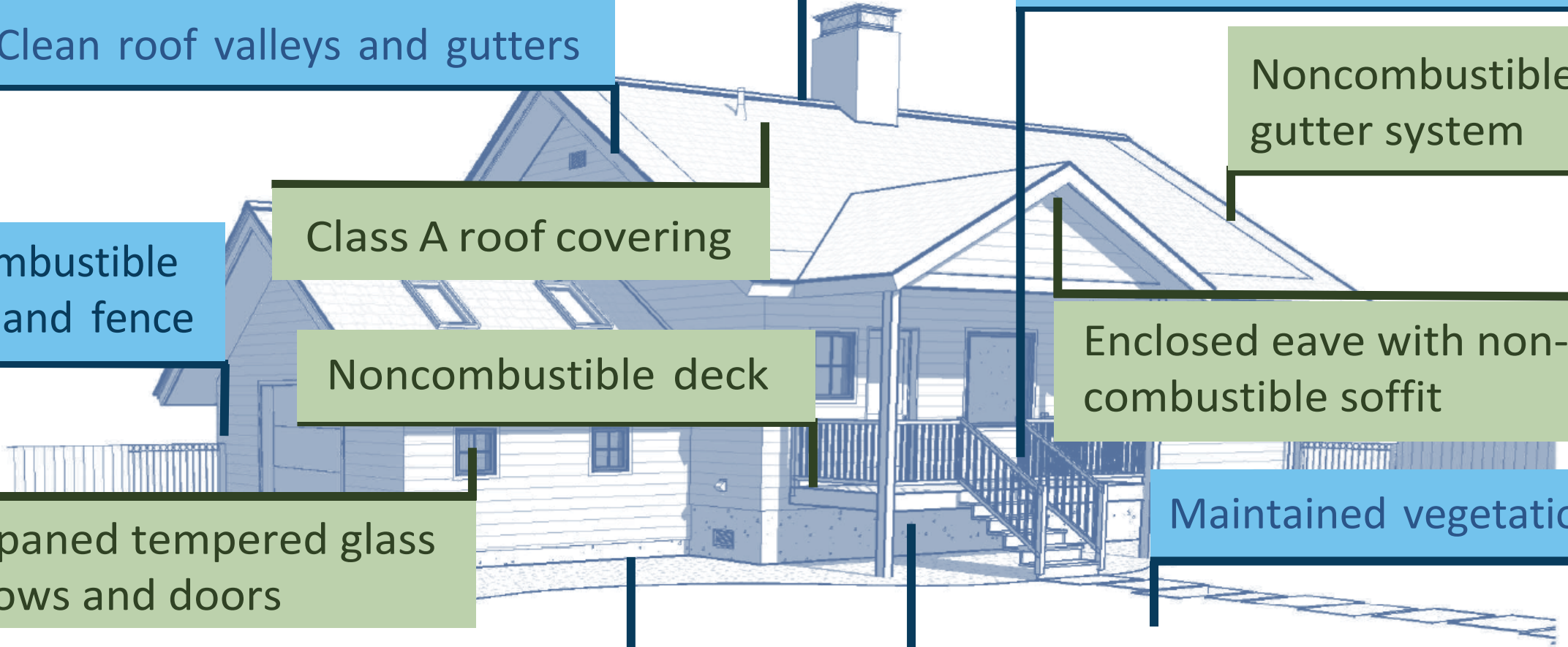
Noncombustible deck

Dual paned tempered glass windows and doors

Maintained vegetation

Replace 6-12” of vertical clearance

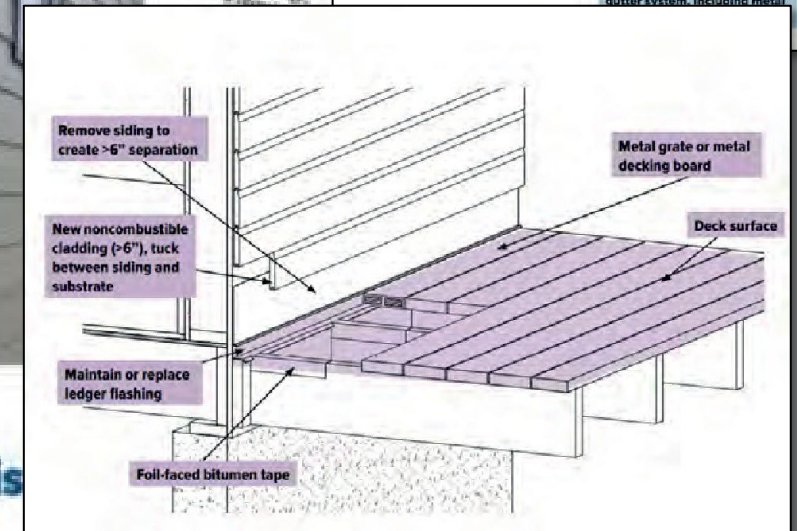
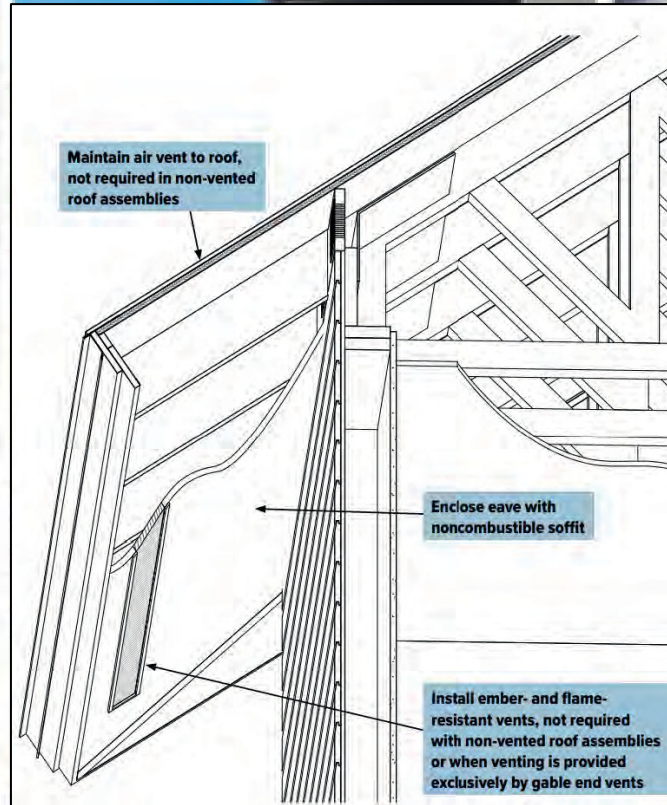
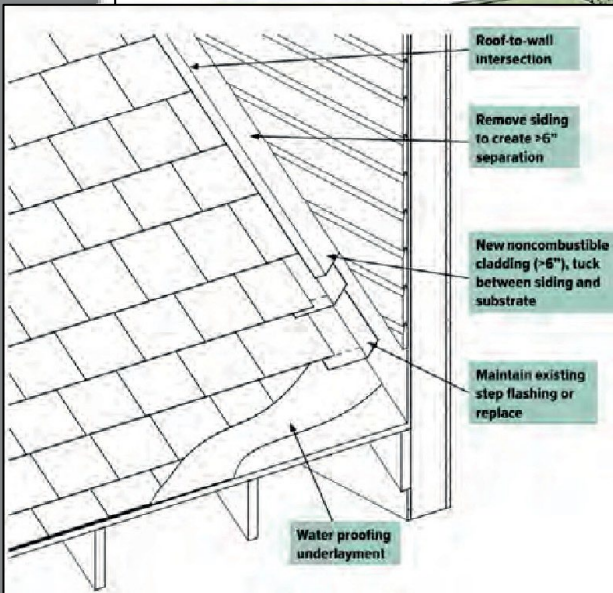
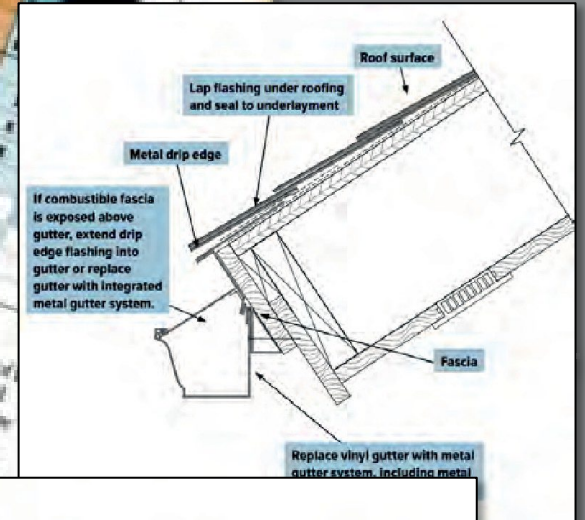
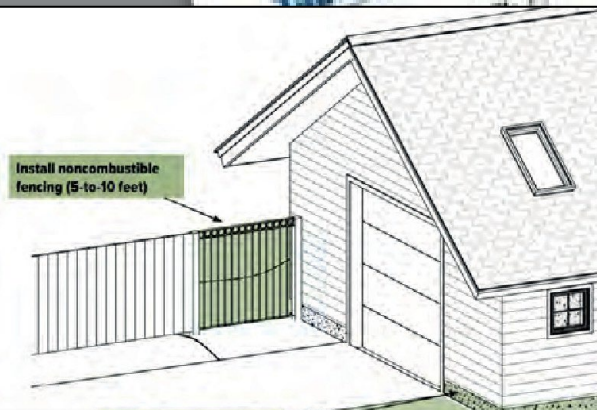
Clear deck and underdeck area



Retrofitting cost ranges (single family dwelling)

	GOOD	BETTER	BEST
Embers	✓	✓	✓
Direct Flame/Radiant		✓	✓
Cost Range	\$5,000	\$30,000	\$60,000+

Retro fitting adds 10-20% overall costs



Some of the most effective risk reduction strategies are also the most affordable.

- ✓ Address vulnerable intersections and flammable surface areas
- ✓ Remove accumulated debris from the roof valleys and gutters
- ✓ Remove flammable debris from on top of and under deck area
- ✓ Maintain a noncombustible zone
- ✓ Reduce fuels around and in between properties including RVs, trailers, outlying buildings, and neighboring homes





Roadmap



Homes are fuel



What does it cost?



What are the opportunities?

Opportunities

Mutual hazard resiliency:
Materials are widely available

Avoided losses:
e.g. LA Fires \$250+ billion

Marketing and niche expertise

Workforce development

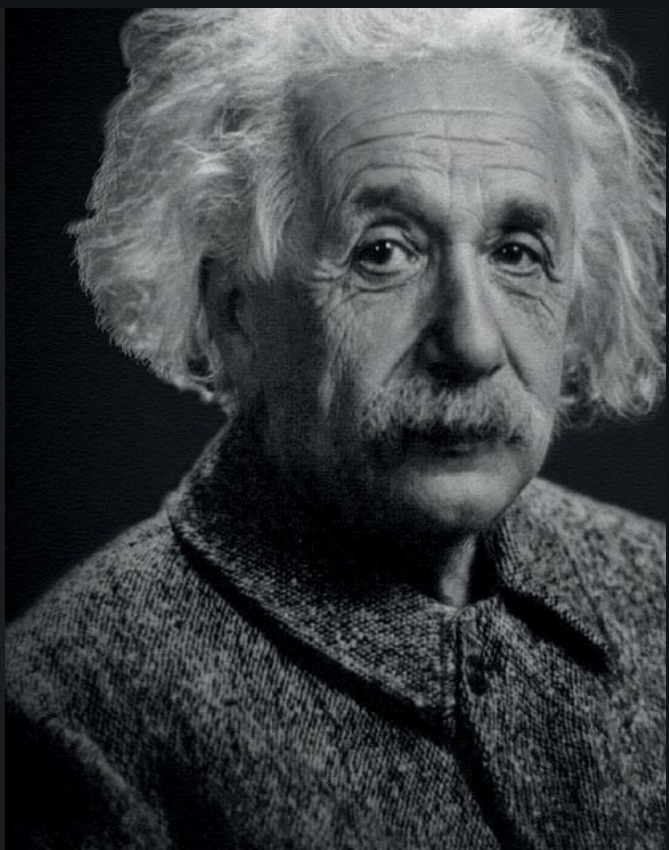


1,000+ cities face wildfire risks similar to L.A.



Prevailing structural conditions in the area served in various ways to accelerate the spread of fire. Shingle and shake roofs predominate. Subjected to fire, they ignite readily to destroy the structure beneath. Moreover, **these roofs send flaming pieces of wood** into the air to drop on other roofs and into the brush, propagating innumerable new fires. Wide picture windows often crumble under the onslaught of the heat and pressure generated in the path of a rampant brush fire. Large, over-hanging, and unprotected eaves furnish a regrettably convenient lodging place for **flying embers and super-heated air.**

It is manifestly evident that the freedom in **structural design** permissible in other less hazardous locations in the city does, in specific and predictable ways, **augment the fire peril** in areas such as Bel Air and Brentwood. Fire protection agencies invariably find extinguishment problems seriously aggravated by many of these **architectural invitations to disaster.**



We cannot solve our
problems with the same
thinking we used when
we created them.

- Albert Einstein



Thank you!

Newsletter



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