

# CLIMATE RESILIENT HOME

EDMONTON METROPOLITAN REGION CLIMATE RESILIENCE EXCHANGE

This is a summary of research conducted by Avid Architecture. For more information visit: [allonesky.ca/regional-climate-adaptation-collaborative](http://allonesky.ca/regional-climate-adaptation-collaborative)



## PROJECT GOAL

Develop a virtual climate resilient home demonstrating design features which address key climate change impacts facing the Edmonton Metropolitan Region. To serve as an education and outreach tool, and provide a road map to help homeowners, builders, municipal staff and elected officials make investment and policy decisions to improve the climate resiliency of homes.

## RESULTS

1. An interactive online tool ([climateresilienthome.ca](http://climateresilienthome.ca)) that allows anyone to review climate resilient home design features, and produce a summary report.
2. A Guidance Document with information on how the home was developed, a summary of climate resilient design features, and their rationale.

## POTENTIAL CLIMATE CHANGE IMPACTS TO HOMES IN THE EDMONTON METROPOLITAN REGION



### Flood

Overland flooding caused by short duration, high intensity rain events, and/or major waterways (rivers, creeks, streams) overflowing their banks.



### Extreme Weather

Atypical events such as hailstorms, severe winds, tornadoes, ice storms, heavy snowfall, extreme heat and extreme cold.



### Wildfire

A grass or bush fire in the country/urban interface that may be started by natural or human causes.

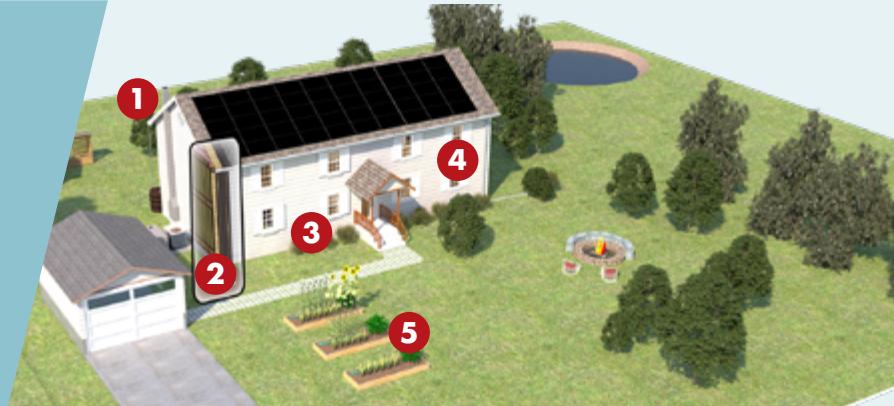


### Changing Environment

Increasing seasonal temperatures and shifting precipitation are changing the natural environment, with impacts on ecosystems, trees, and animals.

## QUESTION:

What climate-resilient design features and maintenance can be incorporated into new and existing homes to address climate impacts in the Edmonton Metropolitan Region?



## HOME EXTERIOR TIPS FOR IMPROVING THE RESILIENCE OF YOUR HOME

### 1 Roof

- Install heat trace cables
- Use fire resistant materials
- Ensure downspouts direct water away from the house
- Regularly clean your gutters and eavestroughs
- Install vents in your attic
- Install solar panels
- Install new roof underlayment

### 3 Windows and Doors

- Install impact-resistant windows and doors
- Install storm or roll shutters
- Put weather stripping on doors and windows
- Install safety film on windows
- Use pressure treated, reinforced and laterally braced garage doors

### 2 Foundation

- Ensure your driveway slopes away from your house and garage
- Enclose crawl spaces with flame resistant and damp-proofed materials
- Avoid exterior basement stairwells

### 4 Exterior Wall

- Choose climate-resilient siding materials
- Replace or repair the exterior air barrier
- Properly and completely sheath your walls.
- Install exterior wall insulation
- Clear snow off porches and overhangs

### 5 Landscape Design

- Plant flowers for pollinators
- Plant trees that will thrive in the future climate
- Plant a vegetable and fruit garden
- Install rain barrels or a rainwater cistern
- Develop a rain garden
- Ensure nearby storm grates and drains are clear of debris
- Slope landscaping downhill, away from your house
- Anchor outdoor buildings, equipment and accessories to the ground
- Create a FireSmart space around your home by removing, trimming or relocating plants and vegetation
- Store flammable and explosive materials away from your home

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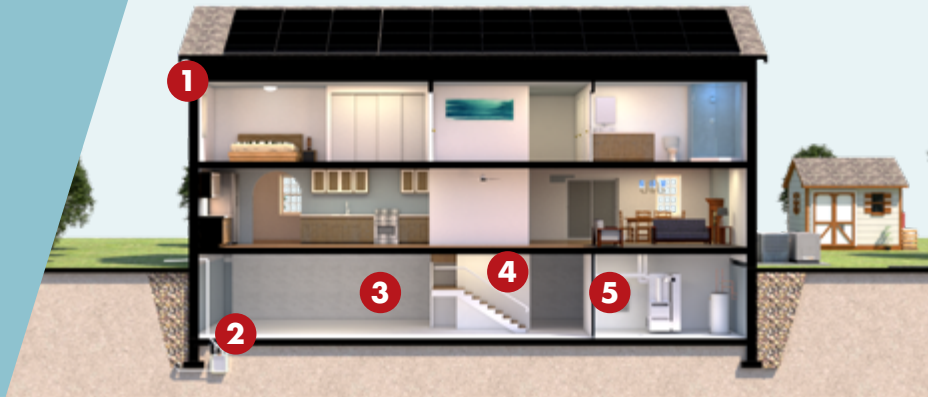
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## HOME INTERIOR TIPS FOR IMPROVING THE RESILIENCE OF YOUR HOME



### 1 Interior Walls and Roofs

- Insulate your walls with fire-resistant or water-resistant material
- Install vapour barriers
- Properly insulate your roof, ceiling and attic
- Ventilate your attic to allow for airflow
- Install interior cellular (insulating) blinds
- Install waterproofing coating, membrane, sealer or paint on your interior foundation walls



### 2 Plumbing

- Insulate water pipes that are near the exterior walls or roof
- Ensure basement floor drains are clear and visible
- Install a backwater valve between the main City sewer line and your home sewage pipes
- Install a sump pump and moisture alarm in your basement
- Install low-flow water fixtures
- Insulate water pipes



### 3 Emergency Preparedness

- Develop a home emergency and evacuation plan
- Have an emergency preparedness kit
- Learn about flood hazard in your area by contacting your municipality or the Government of Alberta
- Keep valuables in watertight and fire-resistant containers



### 4 Electrical

- Purchase a back-up battery power source, or a gas-powered generator, to protect against power outages
- Install a Smart Thermostat

### 5 Heating, Cooling and Ventilation

- Install ceiling fans and use natural ventilation instead of air conditioning
- Install air conditioners in rooms that cannot be cross-ventilated effectively
- Install an air purifier
- House plants help improve indoor air quality

This report was produced through the Climate Resilience Exchange project led by All One Sky Foundation, and delivered through the Municipalities for Climate Innovation Program, a program of the Federation of Canadian Municipalities with funding provided by the Government of Canada.

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