

# How climate change impacts buildings costs over time

Climate shocks and stresses can undermine the stability of your assets, increase their vulnerability and impact their value.



## Climate hazards that could affect your buildings:

- Rising average temperature and greater heat extremes
- Heavier, more frequent rain and snow
- Greater exposure to driving rain
- Intense drought
- Drought and extreme precipitation cycles



Predicted global adaptation costs by 2050  
**\$500 billion a year**



**80 Years**  
buildings' average service life



**\$2.5 trillion**  
financial assets at risk due to climate change

### Roof

UK annual roof maintenance and repair costs £1 billion, making wind damage more expensive than flood damage

- Increased wind speeds and storms damage tiles
- Increased rainfall erodes tiles faster

### Structure

Chronic issues often relate to moisture

- More driving rain escalates water penetration into vertical walls. Walls dry slower with more humidity
- Wood rots faster with greater heat and rain
- Stronger winds spread corrosive salt-spray further in coastal locations
- Warmer temperatures cause climate zones containing damage-causing insects like termites to expand

### Interiors

Heat and humidity affect indoor climate

- Need for cooling adds to electricity costs
- Heat and precipitation increase humidity, perfect conditions for mold
- Electrical equipment in basements or roofs are vulnerable to water damage

### Foundations

Climate change increases subsidence risk

- Clay soil absorbs water, causing ground to rise and structures to lift
- Rising temperatures reduce soil moisture. Dry soil hardens and shrinks
- Thawing permafrost sinks, damaging buildings
- Sea-level change raises water table and makes it more corrosive
- More precipitation means increased periodic basement flooding

### Layout

- Open layouts expose materials to increased driving rain
- Tall buildings are more vulnerable to increasing wind speeds

### Materials

Climate change accelerates deterioration of materials

- Brick, stone: Increases in rainfall and temperature means faster weathering
- Concrete: Increases in temperature, rainfall and humidity damage steel within concrete, weakening structure.
- Plastic: Rising temperatures break down polymers (thermal aging)
- Metal: Heat and humidity speed up corrosion
- Need for stronger, lighter and more durable materials drive up cost

### Windows

- Glazing seals fail quicker with more heat and humidity
- More glass means hotter temperatures indoors



Climate change will impact every single asset on the planet. Asset owners need visibility of the specific physical risks they're facing. Climate Intelligence enables you to understand your exposure to climate risk and make climate intelligent decisions to protect your assets.

**Read more about how Climate Intelligence can help the real estate sector adapt with climate change in our free ebook.**