

INVERCARGILL CITY CENTRE HERITAGE

MAINTENANCE GUIDELINES

All buildings require maintenance, as their materials eventually decay due to exposure to the elements, especially water, as well as wear and tear.

Who should carry out maintenance work?

Every building owner or occupier should carry out maintenance work if able, and if not, should hire someone to undertake such work. Many maintenance tasks are easy to undertake without a lot of cost or effort, but if you have any questions please contact Council's Heritage & Urban Design Planner.

Builders undertaking maintenance work should have proven heritage knowledge and experience. They should be accustomed to using heritage materials and techniques. Modern materials, modern building techniques and 'quick fixes' tend not to be successful when applied to heritage buildings, potentially causing problems down the road. Taking the time to find the right advice, the right people and the right materials will pay dividends in the long run.

Health and Safety

Inspecting buildings and analysing their materials and defects is potentially hazardous work. For example, it may involve working at height, potential disease associated with bird/rodent infestation and mould, and exposure to asbestos fibres or paints containing lead. Employing safe, competent and qualified professionals and contractors is essential.

Maintenance Inspections

The starting point for maintaining your building is regularly taking a good look at it. The best practice approach is to inspect a building and judge its maintenance needs over the next 10 years and then review and update this in Year 5. More frequent inspections will be required for certain items, such as roofs, gutters and downpipes (which should be checked at least twice a year).

The best time to carry out inspections might seem to be in dry, sunny weather, but it is really important to look during heavy rain and winds to see where the water goes and how well roof coverings and gutters, for example, perform. If you do not feel competent to undertake an inspection or to do it safely, contact a professional.

Checklist

Here is a simple checklist for a maintenance plan inspection. It is not exhaustive by any means, but it covers the basics for a typical heritage building in our City Centre.

Roofing

There are many different roofing types (corrugated iron/steel, other sheet metals, corrugated fibre cement sheeting, membranes, tiles and slates); each has its own specific issues and defects. Water can enter your building if these materials, fixings or flashings fail. It is not uncommon to find that alterations to the roof, such as a penetration for heat pumps and other services, are the source of a problem.

- Are there signs of fallen roofing materials?
- Generally, does the shape and form of the roof look correct or are there areas that sag or are no longer in the right plane?
- Are the edges of corrugate sheets buckled or lifting? Are there missing or slipping slates and tiles?
- Are there holes or heavily rusted areas of the corrugate?
- Are fixing nails lifting or missing?
- Is the external surface of slates or tiles breaking up or growing a lot of moss or algae?
- In the case of flat roofs, does water pond on the roof or are there bubbles, splits or cracks in the covering?
- Does water stand in the parapet/internal gutters?

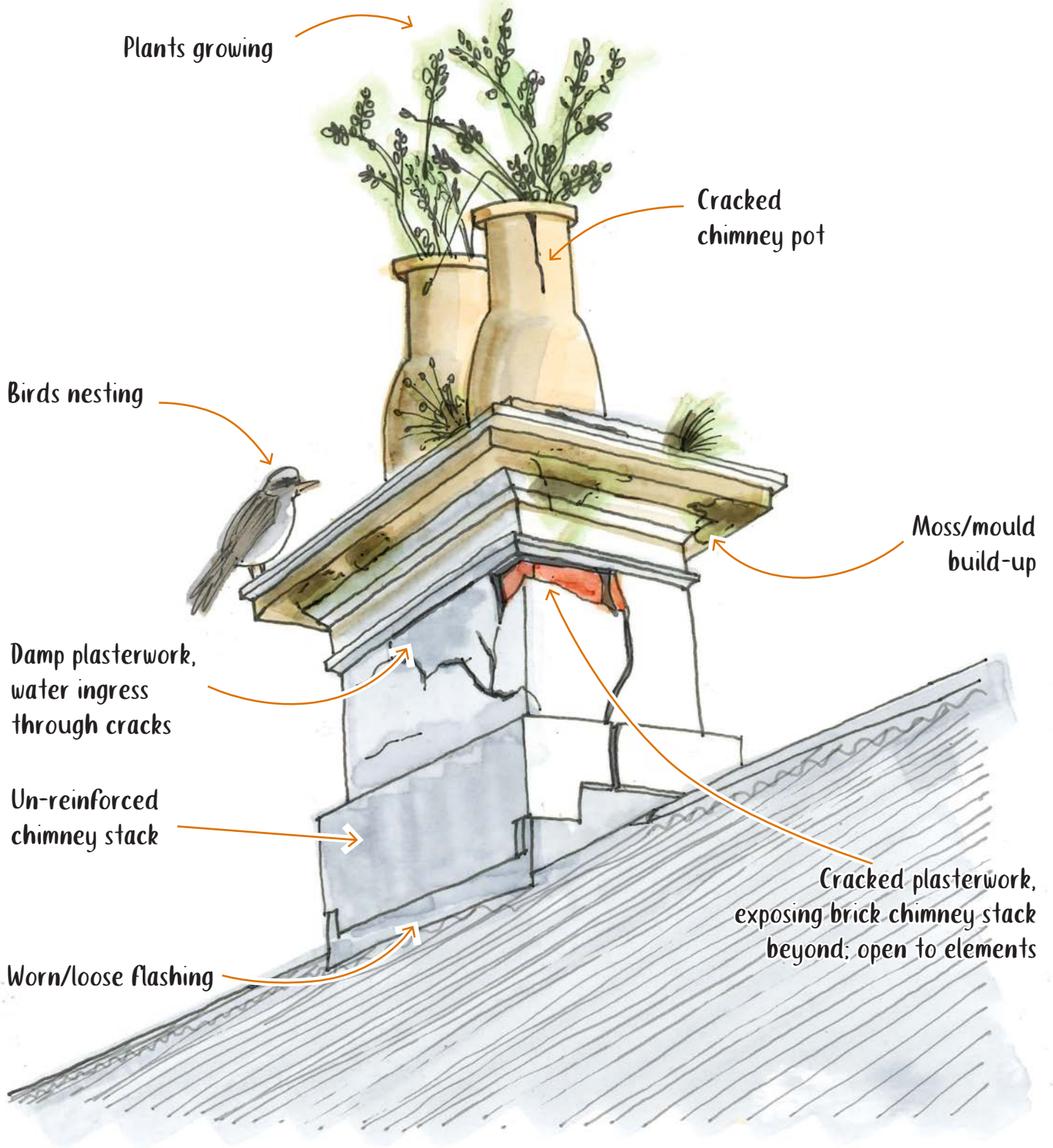
NOTE: Often access to old roofs is very difficult and hence they are forgotten and poorly maintained. Sometimes they can be seen from neighbouring buildings, but in many instances they can only be properly and safely inspected by a crane platform or 'cherry-picker'. Accordingly, it is likely that a roof inspection should be carried out by a suitably qualified and experienced professional.

Flashings

In heritage buildings, original flashings may be made of lead, copper or galvanised iron/steel. More recent flashings may have been added, such as membranes or pre-finished steel.

- Are flashings in good condition and firmly in place?
- Are there signs of other flashings being added or the use of mastics/sealants to fill in gaps?

NOTE: The design/detailing of flashings requires specialist input so if in doubt, a qualified and experienced roofer or builder with heritage experience should be consulted. Historic flashing materials (such as lead and copper), when in good condition, perform well and have long durability. They may be expensive to replace like-for-like, but will outperform more modern materials.



Chimneys

Chimneys

Old chimneys tend to be built of brick or stone, but consideration should also be given to more modern flues that may be of metal or fibre cement construction. Chimneys and flues are a common source of water ingress to roofs. Masonry chimneys also need consideration in relation to seismic risk.

- Is the chimney straight or does it lean?*
- Is vegetation growing from the chimney?*
- Are there bird droppings on the chimney or other signs of birds accessing or living in it?*
- Are there open joints or cracks in the chimney?*
- Is the chimney stained (indicating water problems)?*
- Are chimney/flue flashings in good condition or loose/missing?*

Parapets and roof level ornamentation

Like roofing, parapets and decorative features at roof level are often 'out of sight and out of mind' and not well maintained. Lack of maintenance increases their vulnerability to failure because of strong winds or a seismic event. This is a particular concern because many are high above street level and the consequences of failure could be severe.

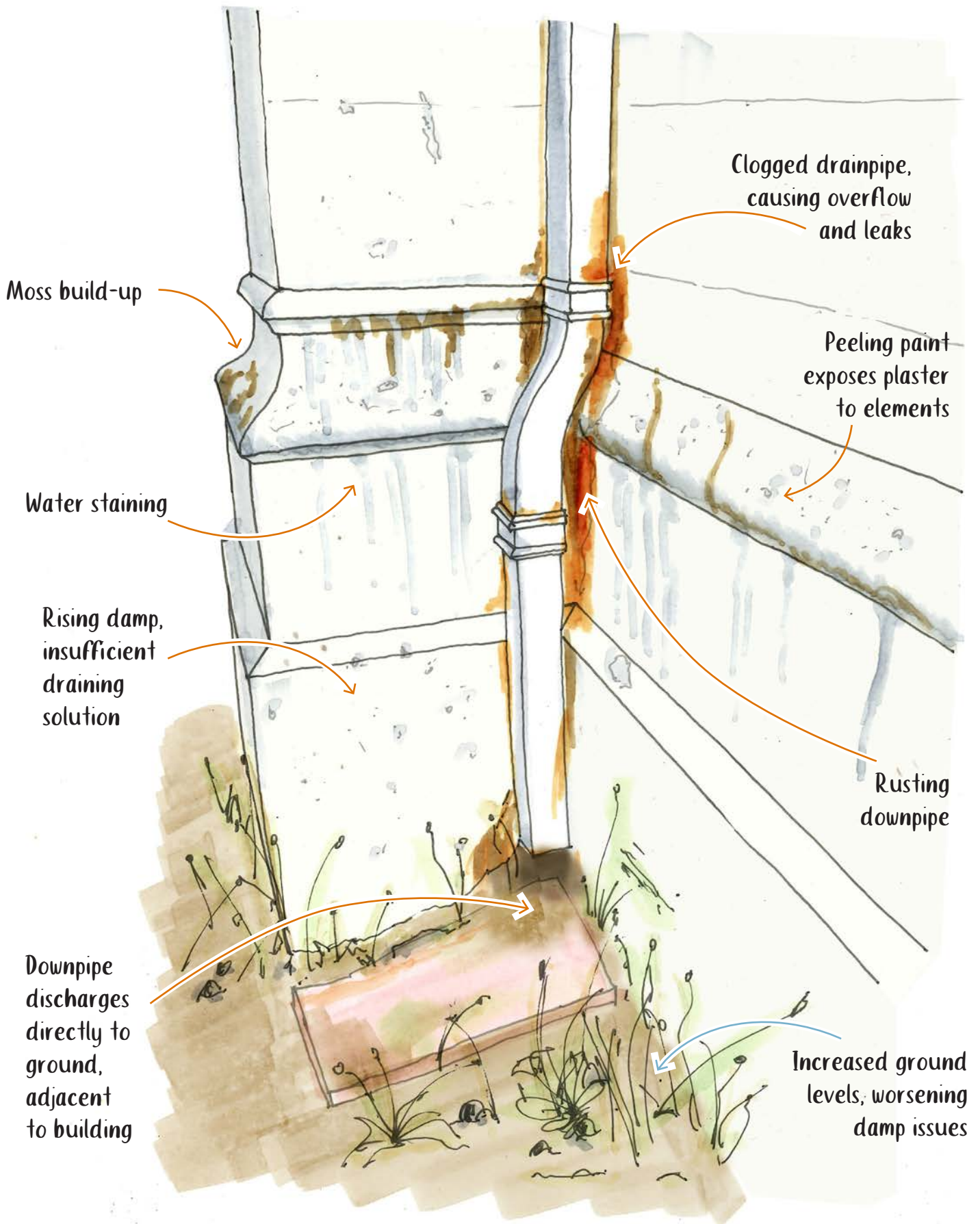
- Do the parapets or ornamentation show any signs of cracking or movement?*
- Are they water-stained or are finishes flaking or peeling?*
- Is there a lot of moss or algae growth on the parapets or signs of vegetation growth?*
- Is there a secure and well-fitted coping (capping or covering of a wall) to the parapet and are the flashings in place?*
- Are there signs of leaks, discolouration or water staining around the scuppers (outlets in the parapet through which water drains to the downpipes)?*

Gutters

Gutters on heritage buildings come in many different shapes and materials. They can be an important feature of a building and its character can be damaged by replacing historic gutters with modern fittings.

Effective, free-running gutters are of critical importance to buildings. Often, they are easily blocked by leaves, dead birds and rubbish causing them to overflow and saturate the adjacent wall. While accessing them can be difficult, they should be cleaned out at least twice a year in spring and autumn.

- Are there signs of leaves or debris in the gutters or vegetation growing in them?
Can you see water in them?*
- Do the gutters look to be aligned or have they become loose, broken or displaced?*
- Are there rusty joints in the gutters or does water drip from joints during/after rain?*



Downpipes, spoutings and drains

- Is the surface of the wall below a gutter very wet or running with water? Sometimes, water overflows the back of the gutter under the eaves and is not as easy to identify as water pouring over the outer lip.*

Downpipes, spoutings and surface water drains

Poorly connected downpipes often result in water discharging onto the ground near the walls of your building. The water can then seep into the walls or beneath the building, causing issues with dampness. It can even affect the integrity of the building's foundations. All water should be discharged well away from buildings, preferably to a proper sewer or soak pit.

Another problem is that blocked downpipes can cause water to stand or overflow from gutters, which can be difficult to see.

- Is water being forced from joints in the downpipes?*
- Is there damp ground around the base of a downpipe, including around the feet of verandah posts (which often double as a downpipe)?*
- Are the downpipe joints rusted or stained?*
- Is the join down the back of the downpipe split open?*
- Is there water staining or decayed/washed out mortar joints on the wall behind the downpipe?*
- Is there staining behind downpipes (green or black moss or mould)?*

NOTE: *It may be that the discharge capacity needs to be increased, as the downpipes may be too small or few for the size and pitch of the roof. Also, it may be necessary to employ a plumber or drainlayer to clear the surface water drains periodically of blockages, particularly if the drains have been laid at a poor gradient and do not run efficiently.*

Verandahs

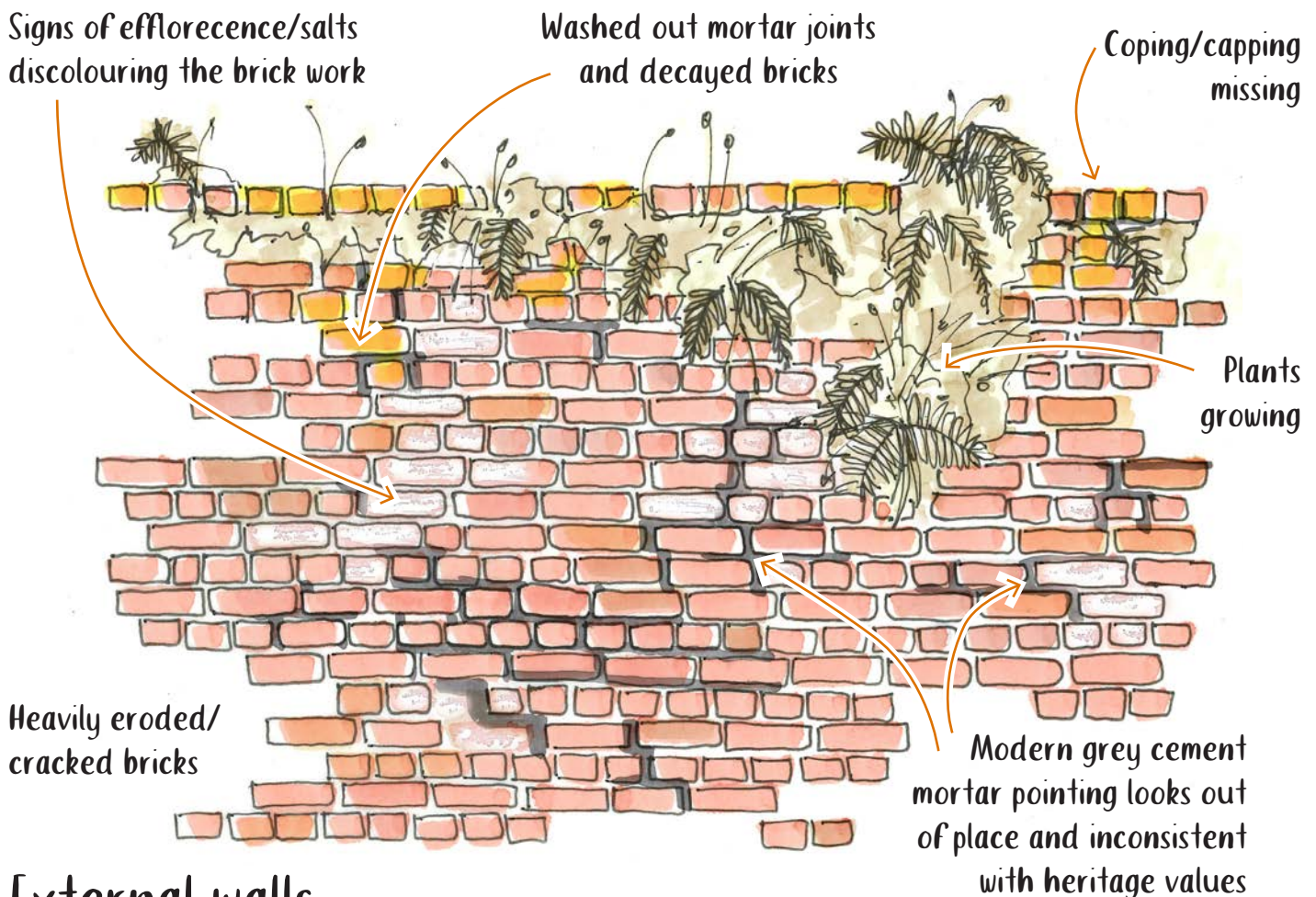
Invercargill has some highly ornamental verandahs, which are not only an important heritage feature of the buildings to which they are attached, but also an important aspect of the streetscape.

- Have the means of support and/or suspension from the building facade been checked periodically by a structural engineer?*
- Where there are ceiling/soffit linings, have you noticed any signs of detachment from the structure, such as bulges and sagging, water damage (indicating roof leaks), cracks or loose sections? Maintenance to ensure ceilings and soffits are well-secured will be much more cost-effective than having to replace fallen sections (let alone the risk to anyone below).*

External walls

The external walls of Invercargill's heritage buildings vary considerably in their materials, construction techniques and maintenance needs. Often the cause of defects is not clear and professional advice should be sought.

- Are there areas of staining or discolouration on a wall indicating a damp problem (sometimes areas of peeling or bubbling paint)?
- Are there eroded, decayed or washed out mortar joints or sandy/crumbling mortar?
- Are there salts ('efflorescence') or white-ish material leaching from the wall?
- Are there rotten weatherboards and other timber claddings?
- Is fungi or mycelium (masses of threads often white in colour) visible?
- Are there decayed bricks or stones?
- Are there blown or hollow areas of plaster/render?
- Are there cracks in masonry or plaster/render?
- Are there bulges, leaning walls or other signs of structural movement?

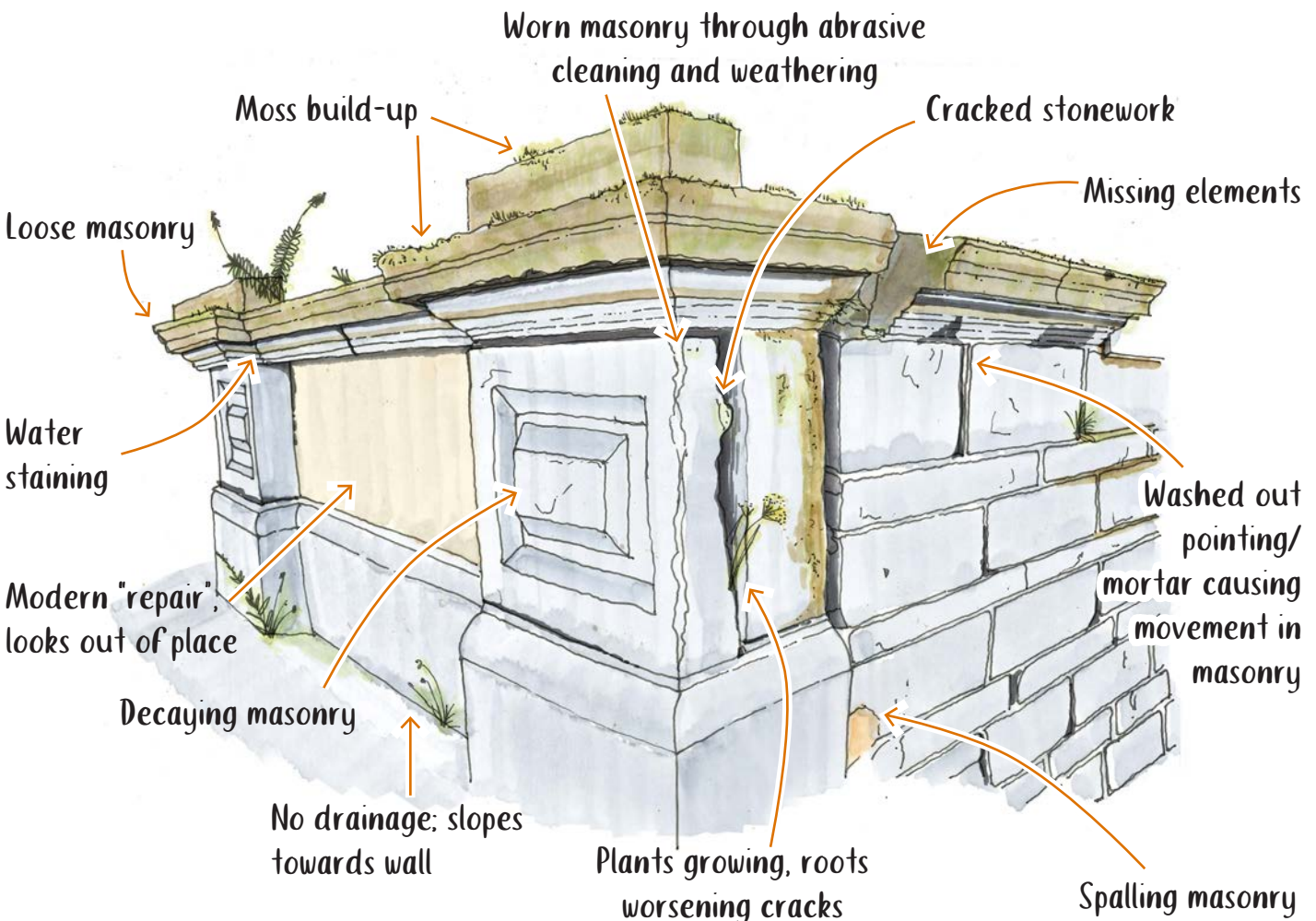


External walls

Windows, doors and other external joinery

Invercargill has many buildings with remaining historic joinery, such as windows and doors, that are important heritage features. They would be expensive to match and replace if maintenance is not kept up. Some of the city's buildings have valuable old glass in their windows and fanlights, including lead lights, coloured glass and pressed pattern glasses.

- Are there gaps around window and door frames where water can get in?
- Do timber windows and doors have open joins, splits or pockets of decay? Are they difficult to open/close or appear crooked in their frames? Are sash cords broken or glass panes cracked?
- Are fascia boards missing or loose? Are boards deformed, cupped, or split?
- Are there patches of bare timber on the external joinery or is the paint peeling?
- Is the putty holding glass panes in place cracked or missing?
- Are lead light panels misshapen or buckled? Is the lead in good condition or is it thin/bent with the glass panes beginning to rattle?



External walls

External pavement/ground levels

Resurfacing of roads, pavements and paths can raise ground levels around a building. Unfortunately, this can reduce the difference in level between the internal ground floors of your building and external ground, bridge over damp-proof courses, and cover ventilation grilles. Soil build up, flowerbeds and other landscaping can also cause this to happen. The risk is that damp levels in walls can be increased, and combined with a lack of ventilation, can result in timber and masonry decay, plaster and finishes deterioration, and borer infestation.

- Do the raised external ground levels and external surfaces slope back towards the walls of the building instead of away (and therefore take water into the building)?*
- Are the ventilation grilles and airbricks blocked or partially covered?*
- Is there damp, timber decay and/or borer internally at the base of external walls?*
- Are there signs of blocked surface water or foul drains?*
- Is there water pooling on the ground close to the building?*

Building interior

Keeping a regular eye on the interior condition of heritage buildings can help identify problems with the external building envelope.

- Is there evidence of birds or rodents inside the building, particularly roof spaces, indicating that there may be holes through which they are gaining entry? Birds and rodents can also cause insanitary conditions which may be a health hazard to building occupants.*
- Is there discolouration, delamination or decay of internal surfaces, like walls and ceilings, that may indicate water ingress through the external walls?*
- Are there signs of fungi and mould or musty/damp smells?*
- Is there water or damp in basements?*
- Are there sagging ceilings/floors, cracked plaster or other signs of structural movement?*

NOTE: You should also undertake regular maintenance to building services to prevent leaks from items like hot/cold water tanks, plumbing pipework and sinks.

Cleaning, painting and repointing

These three items are where well-intended maintenance works can go seriously wrong for heritage buildings. Before embarking on any of these tasks, seek advice from a qualified and experienced heritage professional or contact Council's Heritage & Urban Design Planner. However, here are several tips:

- Before cleaning be sure that it is really necessary. Cleaning can result in removal of the 'patina' of a building that is part of its special character, heritage value and streetscape value.
- If cleaning is really necessary always undertake a cleaning trial first. This should be in an inconspicuous place and should start with simple washing with clean water and a soft brush. Cleaning techniques need to be specific to the particular building material (wood, limestone, bluestone, sandstone, brick, etc.) and the particular type of soiling (moss/algae growth, bird droppings, atmospheric pollution, etc.).

- Be aware that more aggressive forms of cleaning can cause problems, for example:
 - Medium or high pressure water blasting is likely to remove mortar, force water into the building envelope and can cause problems with soluble salts inside old stone and brick masonry;
 - Abrasive cleaning of stone or brickwork (for example, by sand-blasting or heavy wire-brushing) will remove fine detailing from the building and may cause accelerated decay; and
 - Different chemicals can cause accelerated deterioration to heritage buildings.
- Painting previously unpainted stone or brick masonry can have serious adverse effects – as well as changing the character of a heritage building, most modern paints don't allow heritage buildings to 'breathe', causing damp retention in masonry. They are also likely to be impossible to remove in the future without stripping the face of the masonry.
- Be very wary of masonry sealants and waterproofers. If wrongly chosen or incorrectly applied, they may cause decay of stone or brick in the long-term and can result in 'ghosting' to masonry walls (faint white blemish across the face of a wall).
- The architectural and aesthetic value of a heritage building can be damaged by inappropriate repointing of brick and stonework. Repointing should follow the original scheme and materials for the building as closely as possible. By way of example, raked-backed and recessed pointing can affect the architectural and aesthetic value of an old wall if this is not the original method/technique. Similarly, raised 'ribbon' or 'strap' repointing can adversely affected a wall's appearance, making the new pointing the dominant feature rather than the original stone or brick.
- Modern Portland Cement-based repointing, plasters and renders are not the same as the original materials from 100 or so years ago. Their use may contribute to accelerated stone/brick decay and damp problems in a building.

Who can help?

Contact Council's **Heritage & Urban Design Planner** on 03 211 1777 or heritage@icc.govt.nz.

Other organisations that are qualified to give maintenance advice for heritage buildings are:

Heritage New Zealand Pouhere Taonga: <https://www.heritage.org.nz/>

International Council on Monuments and Sites (ICOMOS NZ):
<https://icomos.org.nz/>

New Zealand Institute of Architects: <https://www.nzia.co.nz/>

New Zealand Institute of Building Surveyors:
<https://www.buildingsurveyors.co.nz/>



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