



INVERCARGILL CITY CENTRE HERITAGE

RENOVATION AND COLOUR GUIDELINES

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1.0 Introduction

Invercargill is fortunate to be adorned with a rich architectural heritage, which includes many fine examples of buildings from the Victorian (1837-1901¹) and Edwardian (1901-1910) eras, the Arts and Crafts and Art Deco movements, the early-mid 20thC International Style, and the more recent Post-Modern Architecture Style.

The construction dates of these buildings range from the 1870's to the 1980's, and it is their variety, eclecticism and coherence that make Invercargill unique. Conserving these heritage buildings is an important step in retaining what makes Invercargill's city centre special and in enhancing its character and sense of place.

This brochure has been prepared to help owners of heritage properties care for their building exteriors, select era-appropriate colour schemes, and make well-informed decisions when considering the 'renovation' of a building. In this context, the term 'renovation' means the process of repairing and painting an old building to put it back to good condition. This process may also include 'restoration'², which means returning a building to a known earlier form, by reassembly and reinstatement, and/or by removing elements that detract from its cultural heritage value.

It is very important to consider a heritage building holistically and not just simply focus on the building's façade. There are primarily two reasons for this. Firstly, the condition of the building envelope behind the façade will impact on the condition of the front wall – for example if the roof cladding or parapet gutters leak, they may allow water ingress to damage the façade. Secondly, the character and value of heritage buildings extends beyond just their front wall. They have internal spaces and features that tell their story and the stories of the people who built them and used them. Some spaces and features may be unique and, even if our generation does not appreciate their value now, we should acknowledge that future generations might. Accordingly, renovation works to a heritage building should aim to address the whole of the building and, if there is more work to do than the current budget will allow, the work should be prioritised and planned in phases for when more money and resources can be made available.

Prior to carrying out any renovation works, it is strongly recommended that building owners prepare a Renovation Strategy. The content of this will depend to some extent on the individual building and its needs, but it should cover some basic elements, such as a clear understanding of the building and its development, what the priorities are for its care and what the long-term impacts of the proposed works will be. The latter should include any impacts on surrounding buildings and the streetscape as a whole. The following outlines a set of considerations to take into account when putting together a Renovation Strategy.

¹ Sometimes extended until 1918

² ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value (ICOMOS New Zealand Charter 2010)

1.1 Understanding the building you own

Ideally, from a best-practice perspective, a Conservation Plan for the building should be prepared by a suitably qualified Heritage Specialist as part of the project strategy (note: it may be possible to obtain a grant for this work – contact Council’s Heritage Planner for more information). However, this is not always feasible due to the size or nature of a proposed project. If it is not feasible, you should establish the building’s history, what its heritage values (significance) are, its method of construction, and how these have evolved over the years to help you make the right choices about the proposed renovation work. The better an understanding you have of the building, the easier it will be to make well-informed and heritage-sensitive decisions.

1.2 Be aware

Well-intentioned repairs that do not consider the building’s specific needs, heritage values and materials requirements may turn out to be detrimental to it in the long-run. Understanding the right materials, products and techniques to use in your proposed renovation works is critical to ensure longer-lasting and more cost-effective repairs as well as helping to preserve the heritage fabric and values of a building.

Certain building works may also trigger the requirement for a Resource Consent and/or Building Consent. A Building Consent may, in turn, require a building owner to carry out building upgrades, such as seismic-strengthening, improvement of means of escape in the event of fire, and accessibility improvements. Even if these are not necessary, renovation works can be a cost-effective time to carry out other building improvements, such as increasing insulation levels and ventilation.

1.3 Consider the whole

Although the front façade of a building is often the most visible elevation and therefore the focus of attention, it will almost certainly be reliant on the building structure and envelope behind for its wellbeing. This means that keeping building elements such as roofs, rainwater fittings and parapet gutters (which are often out of sight) in good condition is essential. Rather than just concentrating on the street elevation, consider the whole of the exterior of the building and aim to deal with building renovations holistically.

1.4 Seek advice

Talk to Council’s Heritage Planner, who can guide you as to whether your proposed renovation works may require Consent from Council or Heritage New Zealand Pouhere Taonga. The adviser may also be able to suggest a list of professionals or contractors who can help you with the work and, possibly, sources of funding. Having a set of drawings and a specification prepared by a Heritage Specialist (architect, building surveyor or engineer) will help define the scope of your proposed renovation works. They are likely to lead to improved efficiency in terms of cost and timing of the works as well as helping to reduce the likelihood of unwelcome surprises and delays during the project. A professional consultant should also be able to help you agree a contract with the builder(s) undertaking the work, manage the project for you (if you wish) and help you understand any insurance cover that should be in place.

It is important to seek advice from professionals who are well-versed in dealing with heritage buildings and repairs, as not all modern building materials / construction methods are appropriate for use on old buildings.

1.5 Prioritise and phase, if necessary

Once you understand your building, its needs and any regulatory requirements, you can start to separate the renovation proposals into essential or urgent work, work that can be left to be done at a later date and work that is desirable but not vital. This is likely to help you budget and identify works that need to be done in the right order. It may help avoid the scenario of some initial work having to be re-done when a later phase of the renovation works takes place. For example, it would be unwise to redecorate a building without first ensuring that all the necessary water-proofing works are done first – ongoing damp problems are likely to lead to early failure of new decorations.

2.0 Getting started

Once you have begun to decide on a strategy, there may be other things you need to do. These will differ from project to project, but examples are:

2.1 Investigative works - research

As well as finding out what information Council and the Invercargill Archives already has about your building, other useful sources of information include historical photographic books on Invercargill and the extensive photographic collection at the Southland Museum and Art Gallery. Information can also be found at some of New Zealand’s main archives, including:

- The National Library of New Zealand Te Puna Mātauranga o Aotearoa (online at <https://paperspast.natlib.govt.nz>)
- The Hocken Library;
- Alexander Turnbull Library;
- Te Papa Tongarewa; and
- DigitalNZ.

2.2 Investigative works – building condition

Taking time to find out the condition of your building before you start work will assist in setting realistic expectations about what might be involved. Understanding beforehand what other repairs and improvements might be needed once your proposed renovation works commence will often also save you time and money later on. Whilst some building owners may have enough specialist knowledge to do this themselves, many will require the services of a suitably qualified and experienced Heritage Specialist (architect, building surveyor or structural engineer). Water ingress is one of the most common problems in old buildings and, for example, some typical water-related aspects of building condition that may need to be addressed before commencing renovation works are:

- What are the actual and potential sources of water ingress (e.g. roof coverings, parapets, flashings, rainwater gutter and downpipes and chimneys)?
- How has water ingress affected the building fabric (for example, brick and/or timber decay) and what repairs are likely to be needed (including consideration of any hidden areas of damage)?
- Has the building undergone works in the past (such as painting brick or stonework or pointing with cement-rich mortar) that are now contributing to

current water-related damage and what if anything can be done to improve the situation now?

- Is there maintenance work that should be carried out in addition to the proposed renovation works, particularly if undertaking both together will save time and cost later?



It is often the high-level and out of sight parts of a building that are overlooked for repair and maintenance. Water seeping into masonry parapets and chimneys, etc, over a period of time can cause substantial damage requiring unexpected costs during renovation works. Accordingly, it is worthwhile for the building condition inspection to be thorough and to include, if necessary, access from a cherry-picker and entry into roof voids and other infrequently inspected spaces.

2.3 Investigative works – structural inspection and strengthening/other upgrades

A structural engineer, experienced in the strengthening of old buildings, should be consulted and asked to carry out a thorough structural inspection of the building.

A major misconception with historic buildings is that any structural strengthening required will be prohibitively expensive. This is not always the case as a structural engineer experienced in this type of work can usually provide a structural design system which satisfies the Building Code requirements at a reasonable cost.

Some examples of strengthening works that are sometimes required in old buildings:

- Physically connecting the floor joists and roof trusses back to the outside walls through bolt and bracket connections;
- Installation of ceiling or floor diaphragms to provide lateral rigidity;
- Deep pointing and/or injection grouting of unreinforced masonry walls; and
- Introduction of perimeter steel framing to provide stiffness and a frame to tie walls back to.

The above are only a few examples of strengthening solutions – each building is different, and there is no “cover all” answer. Consult a structural engineer who has a good track-record of designing solutions for historic buildings. Such an engineer should be able to work with you to achieve a design that sits well with the character of your building and limits the amount of heritage fabric that will need to be altered or removed.

2.4 Investigative works – architectural paint analysis

Historic photographs, although mostly black and white, are a valuable source of information about the original ornamentation and detail on buildings. Tonal differences in the photographs can give clues as to the possible original colours used on the various parts. Written descriptions, historic architectural drawings and locally created artworks can also serve to fill in some of the gaps.

The Victorian Era was a colourful period as technology in oil paint and limewash finishes advanced. External brick and stonework were not usually painted, but external renders/plasters and joinery were. It is possible for a specialist to analyse different layers of old paint under a microscope to determine the original colours to a building, but the cost of having this done is unlikely to be justified other than for the most important heritage buildings. It may be possible to scrape old paintwork with a small knife (but see below regarding the possible presence of lead in old paints) to give you an idea of the number of paint layers and the range of colours used in the past to provide you with a reasonably authentic guide to the former exterior and interior appearance of your building. However, this may not be always completely accurate as colours fade. Further advice on this subject is given later.

2.5 Investigative Works - health and safety

Inspecting buildings and carrying out renovation and maintenance works can be hazardous. For example, they may involve work 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. Building owners should be aware of their responsibilities under the Health and Safety at Work Act 2015. Further information can be found by contacting Worksafe New Zealand (<https://worksafe.govt.nz>)

3.0 Starting work

Once you have begun to decide on a strategy, there may be other things you need to do. These will differ from project to project, but examples are:

3.1 Scaffolding

Scaffolding is a specialist trade and should only be undertaken by a competent person or company. Always seek out reliable and recommended scaffolders and take up references before you choose one company over another. Information that can help you find the right scaffolder can be found on the website of Scaffolding, Access and Rigging New Zealand (<https://www.sarnz.co.nz/>). Speak to Council if you think you may need to use the street for part of your scaffold, hoardings, skips or gantries. A scaffolding permit, or licence to occupy, will likely be required from Council.

Something that is often overlooked when scaffolding is erected on a heritage building is the potential for the building to be damaged, for example, by impact with the scaffold tubes or the scaffold structure rubbing against the building. It is important therefore to protect your building against damage to the external envelope and any of the historic ornamentation or glazing. Ideally scaffolding should be erected so that it is self-supporting (and not attached to the building), and any exposed bar-ends facing the building should be fitted with caps to avoid scraping against it. Particular care should be taken to protect vulnerable heritage fabric, such as windows and ornamentation, during the erection and dismantling of the scaffold. Erecting a scaffold wrap or cover to create a 'tent' over the building can be advantageous, not only to protect the building interior when roof claddings, etc are removed, but also to enable contractors to work in all weather conditions so reducing the risk of the project programme over-running. It can also help protect the public from dust and other hazards associated with construction works.



3.2 Preparatory works

It is important to start with a clean and sound base, but cleaning down a building requires careful consideration and the presumption that simple water-blasting will do the job should be avoided. High-pressure water blasting should be avoided completely as it risks damaging soft brickwork, stonework and old pointing. It also has the potential to force water into the building causing damp problems and to help draw natural salts in the masonry out to the face of the walls where they crystallise forming unsightly efflorescence. This can result in an ugly white 'bloom' appearing on the walls or, if the face of the walls has been sealed at some point in the past, the salts becoming trapped just behind the surface causing it to fail as they crystallise and expand.

The best approach is likely to be a cautious one. Start with gentle washing by hand using clean water (low-pressure) and soft bristle brushes. If this is not sufficient, careful high-temperature steam cleaning of masonry can work well using a recognised building cleaning system and a competent / trained operator. Such a super-heated steam vapour cleaning system will remove moss, algae and other biological matter and kill off spores. This can then mean there's less need to use a chemical biocide to remove organic material and slow the rate of its future growth.

Where a thick layer of moss or other organic growths have built-up (such as on the upper surface of cornices), a wooden spatula can be used carefully to remove the bulk of the build-up before steam cleaning or a biocide is used (or a combination of both). Be aware that the chemical compositions of biocide need to be ascertained to ensure that they will be compatible with the type of masonry to be treated, for example, those based upon bleach can be damaging to limestone.

An issue commonly found on masonry buildings is the external surface of the walls has been treated with one or more sealants in the past. The pros and cons of using sealants are complicated but, as a general rule, their use should be avoided. Some sealants attract dust and grime and, as they penetrate into the masonry and form a skin there, no amount of washing or steam-cleaning may work. If this is the case, it may be that you have to accept what the masonry looks like and that cleaning it won't be possible. Under no circumstances should plaster, brick or other masonry surfaces be sandblasted.

A previously applied sealant has attracted pollution on the quoin, forming a dark skin that is no longer capable of being cleaned



Victorian stone and brickwork should not be painted. It is very unlikely that it was originally painted and the use of modern paint systems that are designed to seal a surface can be very damaging to old masonry by trapping moisture within it. If your building has previously been painted, it is possible that the paint can be removed using a specialist super-heated steam cleaning system or by one of a number of available chemical paint-strippers, but this isn't certain. The time and cost in removal may also be substantial.

Prior to cleaning and the application of any cleaning products, their compatibility with the materials that comprise the external envelope must be properly assessed. Anything that could cause damage to the original fabric must be avoided. It is strongly recommended that prior to cleaning, trials are carried out in a discrete area of the building to see what works and allow sufficient time for any adverse effects to be identified before large-scale cleaning is undertaken. Always follow manufacturers' recommendations for the use of their products, including washing down afterwards (if advised) so as not to leave any residues in the masonry. Some chemicals can be hazardous to use, particularly in public places, and especially if they enter a watercourse, so specialists with proven Health and Safety practices should be employed for any such work.

The removal of graffiti and other blemishes to buildings, such as verdigris from copper or bronze and rust-staining from iron and steel, requires specialist input and techniques.

3.3 External envelope repairs

Selecting the most appropriate materials and techniques for repair requires expertise. Consultation with a qualified and experienced Heritage Specialist (architect, building surveyor and/or engineer) is strongly recommended. Whatever repair material or technique is decided upon, it must be compatible with the existing building fabric; this is both from a perspective of its appearance and its physical properties. Some materials can cause harm to the existing building fabric, speed up its deterioration and/or result in problems with other/adjacent building materials. An example is galvanic or bi-metal corrosion where water-run off from one type of metal onto another causes corrosion of the latter – a problem commonly encountered with roofing materials, flashings and rainwater fittings when compatible materials have not been chosen.

You should also consider the likely lifetime of repair materials and their future maintenance needs – what might seem like the cheapest or easiest option now might not actually be so in the long run. An example of this might be making the decision on whether to replace an old copper sheet roof gutter lining with new copper, or with a modern membrane lining; the former is likely to be more expensive, but it is likely to have a life expectancy of 2 or 3 times longer than the modern membrane.

The use of traditional materials and techniques will also help to retain the character of the historic city centre and will ensure that traditional craft skills and materials production are not lost. In some cases, alternative materials and techniques may be considered, but only if they have been tried and tested on historic buildings and have been proven not to have adverse effects.

Some further heritage-conservation principles that should be followed when undertaking repair and renovation works are listed below:

- Do only what is necessary (this is sometimes referred to as 'minimum intervention');
- Use 'like for like' materials and repair techniques. For example, using an impervious or hard modern sand/cement mortar to repoint old brickwork instead of a traditional lime-based mortar will restrict the 'breathability' of the brickwork and hasten its decay and failure;
- Repairs should be 'reversible'. There are a number of aspects to this, but essentially it should be possible to remove the repairs if they are not successful, or when they need repeating, without damaging the adjacent building fabric;
- Fit the new to the old and not vice-versa i.e. don't cut out and remove existing heritage fabric which is in good condition to make way for the new; and
- Record what is done and make sure this is kept and available moving forward. This information may be very helpful when work is done to the building in the future.

There are many different materials and techniques that may be encountered when working on heritage buildings in the city. Some of the more common ones are described below, together with a few general notes about their repair/renovation:

Corrugated iron claddings

The two primary issues when dealing with corrugated iron are to slow down corrosion and to ensure the sheets remain adequately and securely fixed. Corrugated iron sheets traditionally had a reasonably thick layer of galvanising applied (compared with similar sheeting today) and, hence, small or light areas of rusting do not automatically mean the entire roof covering needs to be replaced. Consideration does, however, need to be given to the condition of the fixings, the purlins (and other associated roof timbers), the valley/parapet gutters and the flashings.

The original cladding may not have been painted and may simply have had the galvanised finish exposed. If it was painted, dark reds and greens are traditional colours.

If a corrugate cladding does need to be replaced, the new sheeting should have a profile that matches the original sheets as closely as possible (typically deep rounded troughs rather than shallow/low-profiled troughs).

Parapets, cornices and ledges, etc

These building elements are often a source of problems either as a result of poor original design/construction or lack of maintenance (or both). They may also have been modified in the past due to their condition or seismic risk. Repairs may include the thorough and detailed renewal of missing, loose, off-key/hollow or cracked plasterwork, renewal of cappings, repointing and replacement of defective brick, stone or concrete. Often parapets, cornices and ledges were originally built without damp-proof courses. As well as allowing water ingress and consequent decay problems internally, this lack of waterproofing can lead to problems of masonry decay and the build-up of staining and black/pollution crusts to the undersides of ledges and cornices. Thus, renovation works should consider how appropriate water-proofing measures can be included. A traditional approach to resolving this issue is to cap these building elements with lead sheeting.

EXAMPLES OF RENOVATION ISSUES FOR EXTERNAL PARTS OF HERITAGE BUILDINGS



1. Existing roof cladding, gutters and downpipes

- Use traditional, deep-trough corrugated steel sheeting to replace old and heavily corroded corrugated iron. Finishes to the sheeting should be natural or traditional colours (see Painting Guide later in this document). Original natural slate and tile claddings should be renewed to match as closely as possible the former historic roofing materials on the building.
- Wherever possible, retain and repair old rainwater fittings. If renewal is essential, use traditional materials and profiles, such as cast iron and galvanised steel to match the original fittings. Pay particular attention to the size and adequacy of the fittings to ensure they provide sufficient and effective drainage. Avoid the use of plastic components.

2. Parapets and cornices

- Pay particular attention to these areas and any signs of damp/discoloration/white salt staining, cracking, vegetation and organic growth and other poor condition indicators.
- Use traditional capping materials for the tops of parapets and cornices. Retain, repair and (if necessary) strengthen original ornamental features, such as balustrades, urns and scrolls. If lightweight replacements are required, seek professional advice.

3. Brick / stonemasonry walls

- As for 'Parapets and cornices', pay particular attention for signs of poor condition indicators.
- Look out for signs for bowing and/or cracking in the masonry, including horizontal cracks and spalling of bricks or stones that could indicate corrosion of embedded iron or steelwork.
- Be aware that the use of the wrong type of mortar (usually cement mortar) can cause problems of masonry decay and damp retention in the walls. Poorly done repointing or the use of inappropriate pointing styles can also be visually damaging to the building.
- Don't paint or use sealants on previously unpainted masonry. If you intend to repaint a previously painted masonry wall be aware of the potential damp problems that you may cause and seek confirmation from the manufacturer that the paint you intend to use is suitable for the wall surface and type of masonry. Use a colour scheme that is appropriate for the age of your building.

4. Painted timber windows

- Timber windows, doors and other external joinery often contribute greatly to the heritage character of a building

and should therefore be retained and repaired wherever possible.

- Typically, replacement with modern window/door units is not acceptable in heritage conservation terms and, for recognised heritage buildings, will likely require Resource Consent.
- Often old timber windows can be refurbished and upgraded with draught-proofing and double-glazing or vacuum insulated glass.
- Retain and repair old historic glazing and patterned glass or leaded lights.

5. Plaster finishes

- Unpainted render/plaster should be left unpainted as applying paints or even clear water-repellent treatments can result in the trapping of moisture within the external building envelope.
- Check that existing render or plaster that appears to be in good condition remains well-bonded to the wall substrate behind. If it sounds drummy or hollow, it has probably detached from the wall substrate behind.
- Crack repairs need to be undertaken to suit the specific nature of the damage to the historic render/plaster.
- Avoid the use of cement as the binder in renders and plasters; instead use lime or hydraulic lime depending upon the particular circumstances.

6. Exterior metalwork

- Historic metalwork, such as parrass plates and verandah stays, that are part of the heritage significance of the building should be retained and repaired.
- Check all metalwork for corrosion and ensure that all corrosion is removed before repainting.
- Be aware that corrosion may be present on the rear face of metalwork components or where they are concealed and embedded in the walls. Don't just paint over the problem - thorough investigation should be carried out.

7. Verandahs

- Historic verandahs should be retained and repaired, including any decorative soffits.
- Be aware that there may be concealed problems within the structure of verandahs, particularly where water has got in or drainage is poor. Seek advice from a heritage-experienced structural engineer on the condition of a verandah and the adequacy of its support/fixings.

New lead flashings applied to tops of window pediments and ledges



Brick and stonework walls

A common renovation issue for brick and stone walls (including parapets, cornices and ledges) is the presence of corroding iron or steelwork embedded in them. Victorian and Edwardian buildings relied on iron/steel straps and ties/cramps to reinforce the walls, connect the masonry elements together and restrain overhanging cornices and ledges. Cavity brick walls usually have steel or iron cavity ties to bond the two wythes of brick together and, sometimes, brickwork has steel straps laid in the horizontal bed joints as a method of reinforcement. Over time, any of these strengthening/tying components in the walls can corrode and expand (particularly if the wall around them is damp) causing the masonry to crack or spall. This then becomes an ongoing issue for the building unless the embedded metalwork is removed or adequately treated. Specialist advice is required to assess the extent of problems like this, if found, and the repair options.

An iron cramp embedded in the stonework, corroded and expanded over time, causing stonework to crack and fall away



Repair of masonry walls also needs to consider what other problems and repair requirements may be concealed within the structure, such as the possible presence of decayed timber lintels, bond beams, and the ends of floor structures embedded in the walls.

Repointing brick and stone walling properly requires a contractor with patience and understanding, as well as the right tools and materials. Old pointing should be raked out by hand (not cut out with grinders or other electrical tools). Pointing should match the original style for the building and should not simply be done in a recessed or strap-pointing style that is commonly applied to buildings today. For many old buildings, the pointing was brought out flush with the face of the wall, with only the highest points of the stones visible, or techniques such as 'tuck' pointing were used (where wide joints between bricks and stone were filled with coloured mortar, and where thin lines – sometimes of differently coloured mortar – were added so that at distance the masonry would appear finely-jointed and of high quality).

The way in which an old building is repointed can substantially affect its appearance. If the mortar joints are too wide, the mortar is the wrong colour or is cement-rich, or the pointing technique is wrong, the visible appearance of a wall can be altered from being primarily natural stone or brick, with a gentle patina of age, to consisting predominantly of poorly applied mortar pointing.

An example of good, flush pointing using a hot-mix lime mortar.





Above: Bad cement pointing and associated brick decay and the presence of white salts/efflorescence.

Right: This stonework has unsightly hard cement mortar pointing. It has recently been painted and the signs of blistering along the mortar joints show whether moisture has been trapped by the paint and repointing and is now causing the stones to decay,

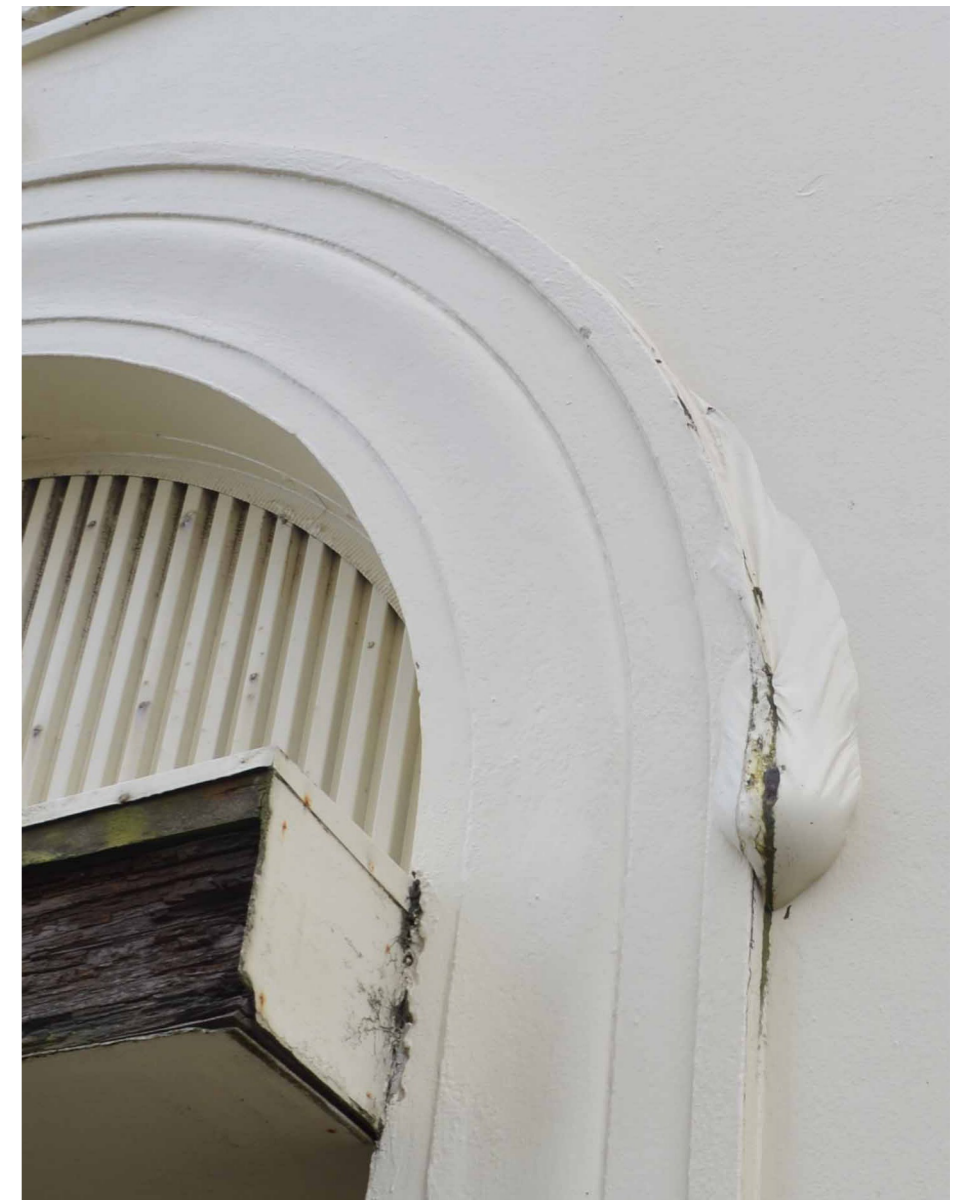


It is worth reiterating again that previously unpainted brick and stonework should be left unpainted both from a historical perspective and to prevent any issues with moisture retention in the wall causing future damp and decay problems. Repainting previously painted masonry will need to take into account what has been applied to the walls before (old limewash, old oil paint, etc) and the compatibility of limewash and mineral paints, etc, that are available now.

Render and plaster

Unpainted render/plaster should be left unpainted, as applying paints or even clear water-repellent treatments can result in the trapping of moisture within the external building envelope, speeding up the process of decay in these materials.

Example of inappropriate paint application – moisture is trapped behind a non-breathing paint and builds up, causing decay



It's important to check that any existing render or plaster that appears to be in good condition remains well-bonded to the wall fabric behind. This can be done by gently tapping it and listening for areas that sound hollow and off-key. Any such areas found should be cut out and replaced (allowing for any necessary repair of the wall fabric behind).

Crack repairs need to be undertaken to suit the specific nature of the damage to the historic render/plaster. As a general rule, the following actions may be suitable:

- Leave fine hairline cracking of the render untouched provided that an adequate bond remains between the coats.
- For c.1mm wide surface cracks, scribe out and fill with lime putty or NHL2 hydraulic lime.
- Cut out and investigate larger cracks and their cause. Larger scale repairs/ filling may be possible or there may need to be partial or full render replacement. It is important to establish the cause of larger cracks before attempting repairs as unless the cause is remedied, the cracks will simply reappear. Debonding of the render from the fabric of the wall, debonding between coats, and corroding or expanding/contracting embedded metalwork are all examples of where more comprehensive repairs will be necessary rather than simple filling and making good.

Contractors should ensure that new render and plaster mixes are good matches to the original, and certainly not harder or less permeable than the existing. Avoid the use of cement as the binder in renders and plasters; instead use lime or hydraulic lime (note: this a different material to the standard 'hydrated lime' that is available from many building materials suppliers).

The new render or plaster should also match the original colour, texture and appearance as the original. This should include, for example, matching any aesthetic features in the plaster. Examples of render/plaster features often found on heritage buildings are straight horizontal and vertical lines cut into the finished surface (the latter is referred to as 'ruled and lined') to make the render look like fine-jointed stonework and false quoins to the corners of buildings.

Rainwater fittings

Like parapets, cornices and ledges, the rainwater fittings to a heritage building need very careful consideration to ensure that they are not causing water ingress problems to the building. The sizing of old fittings may also not be adequate to ensure sufficient surface water disposal given current climatic conditions.

Plastic fittings are sometimes suited to modern buildings, but not heritage buildings. Traditionally, rainwater fittings were typically made of cast iron, lead, copper or galvanised iron/steel. Many heritage buildings had attractive, and sometimes ornamental, hopper heads and downpipe profiles and, if there is sufficient evidence of their style and size, it would be appropriate to recreate these features. Often the verandahs were used to collect water from the front elevation and disperse this through downpipes disguised as verandah posts. Changing the style of a verandah will need to address this situation.

In general terms, however, historical rainwater fittings should be repaired and reused wherever possible and, if their condition dictates that they need to be renewed, they should be replaced to match as closely as possible the design and materials of the original fittings.

Windows, doors and joinery

Timber items may include window frames and sashes, doors and frames, fascias, bargeboards, and general trim etc. Timber elements of a building often contribute greatly to the heritage character of a building and should therefore be retained and looked after wherever possible.

Particular attention should be given to checking for decayed elements which should be replaced by a carpenter or joiner skilled in historic repairs and restoration. Repair of historic joinery items should be handled with care, with only the minimal old material removed, which may necessitate scarfing in new sections of timber. All materials used should match as closely as possible those used originally.

Splits, checks or smaller missing sections of woodwork may be filled in with flexible fillers specifically designed for timber repairs. Check for excessive gaps between the walls and the window or door frames, and fill these with either a soft plaster mortar, or a suitable, paintable synthetic filler. Traditionally, gaps between windows and door frames and the surrounding masonry were filled with paper and sealed externally with a mixture of fine sand and linseed oil.



Old timber windows, and the historic glazing within them, as well as old doors contribute to the heritage value of a heritage building elevation. Wholesale window and door replacement with modern units is not acceptable in heritage conservation terms and, for recognised heritage buildings, requires Resource Consent. There is considerable information available online, or via Council, to explain how heritage windows and doors can be repaired. They can also be improved in terms of draught-proofing and insulation, including the fitting of

draught-excluders/brushes and secondary glazing or replacing the existing with double-glazing or adding vacuum insulated glazing. On no account should historic windows be replaced with modern double-glazed windows without, first, thoroughly investigating all the conservation techniques available.

Very little consideration is often given to the glazing in old windows, fanlights and shopfronts, including leaded lights. Old glass would have been imported from overseas and would have been expensive and valued in Victorian/Edwardian and later eras. Where it remains, significant efforts should be made to retain it during renovation works. Any stained glass or leaded lights should be retained and repaired by a skilled and experienced specialist.

Decorative tiles

Decorative tiles are a feature of central Invercargill heritage buildings and are found in the entrances to shops and upper floor stairways. They should always be retained and repaired using matching tiles and recreating historical patterns. Specialist advice will be required for repairs and to source the right matching tiles.

3.4 Restoration of historic elements

If it is clear, through physical inspection on site and looking at historical photographs, that original decorative or ornamental elements have been removed from the building, careful consideration should firstly be given to whether to replace them at all, and if so, which materials to use to do this. Decorative elements may have been originally manufactured in plaster or sometimes Oamaru stone, but may not today comply with current seismic requirements. Conjectural restoration is not recommended from a heritage conservation perspective, but if authenticity in design can be proven, these elements can today be manufactured in lightweight materials, such as ACC (Autoclaved Aerated Concrete) blocks, or GRC (Glass-fibre Reinforced Concrete).

If this route is chosen and backed up by good historical research, careful consideration should be given to the manufacturing of these items to avoid new elements looking too crisp, “stuck on” and out of place against the backdrop the old building provides. Such elements will never weather the same as old stone or plaster and, hence, this should be taken into account when designing replacement ornamental features.

Re-instatement of historic elements, where there is no practical driver, is not always the “right thing” to do for a building with a past. Changes that buildings have undergone over time add to their story, and unless these changes are detrimental to the overall character/heritage value, or hinder the functionality of a building, recreating them can be regarded as an inappropriate action.

3.5 Maintenance

Regular maintenance is the number one cost-saving exercise you can undertake as the owner of a heritage building. Regular maintenance will prolong your building’s life (including its valuable heritage fabric), and the life of any repairs undertaken to it. Refer to the Invercargill City Council Maintenance Guidelines for a more in-depth description of what you can do to help maintain your building.

Water ingress is a major concern for all old buildings. One of the most useful things you can do is to keep gutters and downpipes free of leaves, snow and other

4.0 Painting Guide

The painting of buildings, as part of the overall streetscape, can be seen as a portion of a large mural. Any one building is just a small part of the mural, but it does have the power to make or mar the overall picture. Therefore, although it would not be desirable for all buildings in the street to look the same, a colour scheme that is inappropriate to the era or style of the building, or context into which it sits, will spoil that overall picture.

debris build-up, as well as generally keeping an eye on your building exterior, particularly all the high-level elements, such as roofs, chimneys and parapets. If you notice any changes taking place, find out what is causing them – acting quickly will help to contain or minimise any issues that arise. To quote the well-known old saying “a stitch in time saves nine”.

Colour was an integral part of the design of early buildings, just as it is today. However, prior to 1920, the basic paint technology limited the colours at hand. The range that we have today was not available. Pigments were usually ground up in small mills or by hand, which meant there could be some unevenness in the overall colour and a much more variable finish than we expect of paints today.

There has been a recent trend for buildings to be painted black, white or grey. This may be based upon a misconception that heritage buildings were originally drab and lifeless, which cannot be further from the truth. Colour has long been an important part of the aesthetic of our towns and cities and it is essential that Invercargill continues to be the colourful city it has always been.



Some general conventions from Victorian times can be given; stucco plaster/ render was coloured to imitate blocks of stone, usually creams, light yellow ochres or umber (brown); plain brick and stone were seldom painted; greens were often used for fences, gates and railings; and olive, purple/brown and red/brown were widely applied to external joinery. Whilst a more common consideration for internal joinery, the present fashion for stripped or bare timber did not exist. Whites were popular for joinery in the Queen Anne style buildings of the 1870s and 1880s, but brilliant whites were not available for use.

A typical late Victorian colour scheme was mid-range to dark tones for the main body of the building with darker trim.

In Edwardian times, the body tone may have remained similar, but the trim lightened, and different levels of the building may have been picked out in different tones.

Art Deco colour schemes took a different approach. Pale colours were applied to large areas with stronger accent colours on doors and window frames, etc. In the 1930s paint was often applied in graduated tones of the same colour, or similar colours, to give variation in tone rather than colour itself.

Often commercial buildings used the contrasting natural colours of building materials to create the effect, instead of applied colour. Such examples are red brick and grey plaster, black basalt and Oamaru stone, and various pastel colour tinted plasters used in the 1930's.

4.1 Research

There are no fixed rules or templates for the colour schemes of buildings. You may wish to attempt to reproduce the original colour scheme used on your building, which will require some research. As previously mentioned, a study of early photographs of your building, or similar buildings can indicate tonal differences in colour and therefore provide clues as to the possible original colours.

Another, more accurate, method is to carefully scrape back the paint layers and attempt to match the original colours used to a modern paint chart. You will need to allow for the fact that colours will likely have faded and, of course, you should consider the potential for lead to be present in the old paint layers and take appropriate health and safety precautions.

4.2 Preparation

Thorough preparation work is essential when repainting a building. If the existing paint is generally sound, a methodical sanding or scraping to provide a good key is recommended. If the paint surface is flaking or badly blistered it may be necessary to remove the paint back to bare wood, stone, plaster or brick. This is really a job for a professional to do as removing the paint could damage soft brick or stone. Always carefully follow the manufacturer's recommendation if using chemical strippers and avoid the use of heat guns as these can present a fire risk. If there is no need to remove old paint before repainting, it should be left in place as it does provide a record of the how the building has been decorated in the past and what materials have been used.

Caution: Most paints used prior to the 1960's contained lead. Such surfaces should not be rotary machine sanded because this spreads the dust, which is dangerous to inhale. Suitable disposable covers should be spread out below areas where dust or paint flakes containing lead may fall. All lead-based materials must be thoroughly cleaned up at the completion of the job and properly disposed of, together with the paint covers.

Caution: Burning-off of paint on woodwork - naked flame burners are not recommended as the woodwork is often very dry and fires can easily start should the flame penetrate the surface. Hot air stripping guns are less of a risk, but still not recommended.

4.3 Choosing heritage colours

Having carried out the necessary research and determined the historic use of colours on various building elements (roofs, walls, doors, windows, external joinery etc), you can start selecting the colours for your building. This has been touched on before, but is addressed in more detail below.

Look at the colour schemes used on other buildings which you like, both in Invercargill and other cities. Also look for colour schemes in books at the library and in design magazines that relate to the age of your building. You may not want to use those particular colour schemes, but take note of the ways the colours complement each other and enhance the character of the building, or indeed where they fail to do so.

Before you start to select the colours, remember that your building will be enhanced if you choose colours that are appropriate to the architectural era of that building i.e. Victorian tones for Victorian buildings, Art Deco colour schemes for Art Deco Buildings.

Choose an appropriate base colour for the body of the building, with joinery and decoration highlighted by one or two contrasting colours. Colours should comply with the Invercargill City Council Approved Colour Palette found on their website. It should be remembered that lighter colours read more strongly and darker colours recede, therefore variations in colour and tone can be used to emphasise modulation and decoration. Often a tone on tone effect using adjacent tones of the same general colour from the colour chart can look very effective.

General principles in selecting colours for building facades include:

- Limiting the number of colours, usually to 2 or 3;
- Avoiding large areas of bright or garish colours;
- Avoiding dark monotone colour schemes which hide detail;
- Choosing an era-inappropriate colour scheme can detract from the architectural merits of good buildings;
- Do not paint previously unpainted plaster, brickwork or stonework; and
- Dark colours will tend to last less well on materials exposed to the sun.

4.4 Choosing your paints

Avoid using plastic/latex-based paints and acrylic paints on old masonry, brickwork or plaster. These paints are not 'breathable' and may trap moisture in the building fabric. Consider using authentic historic finishes, such as limewash and linseed oil-based paints (on appropriate/suitable materials and parts of the building).

In order to find the best paint system for the specific materials your building is made of (and to take into account their condition and what might have been applied to them in the past), your paint supplier should be able to provide you with a detailed specification and recommendations for application.

Following their specialist advice and carrying out painting maintenance every 5 years will go a long way to keeping the building envelope in good condition and maintaining the value of your building.



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