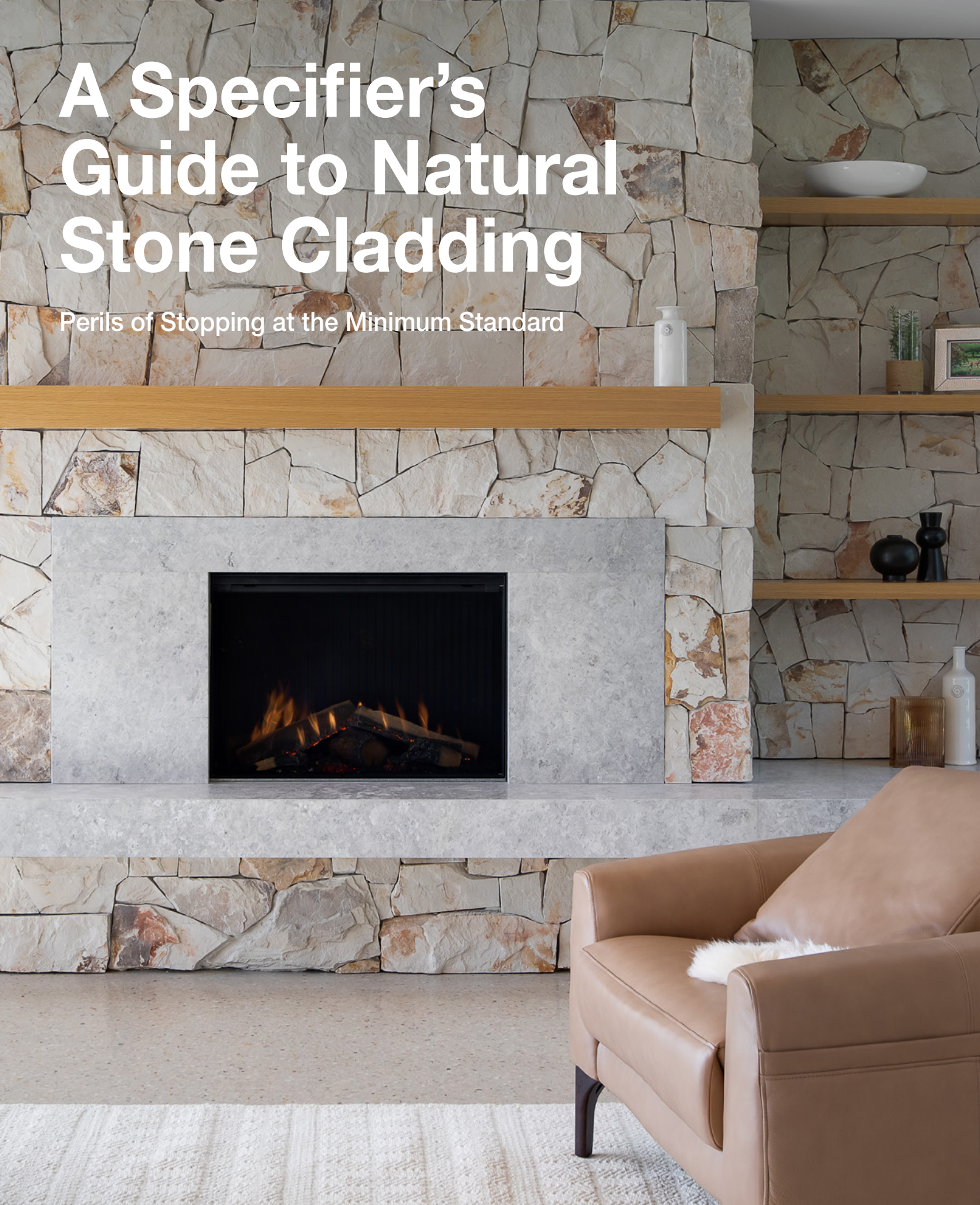
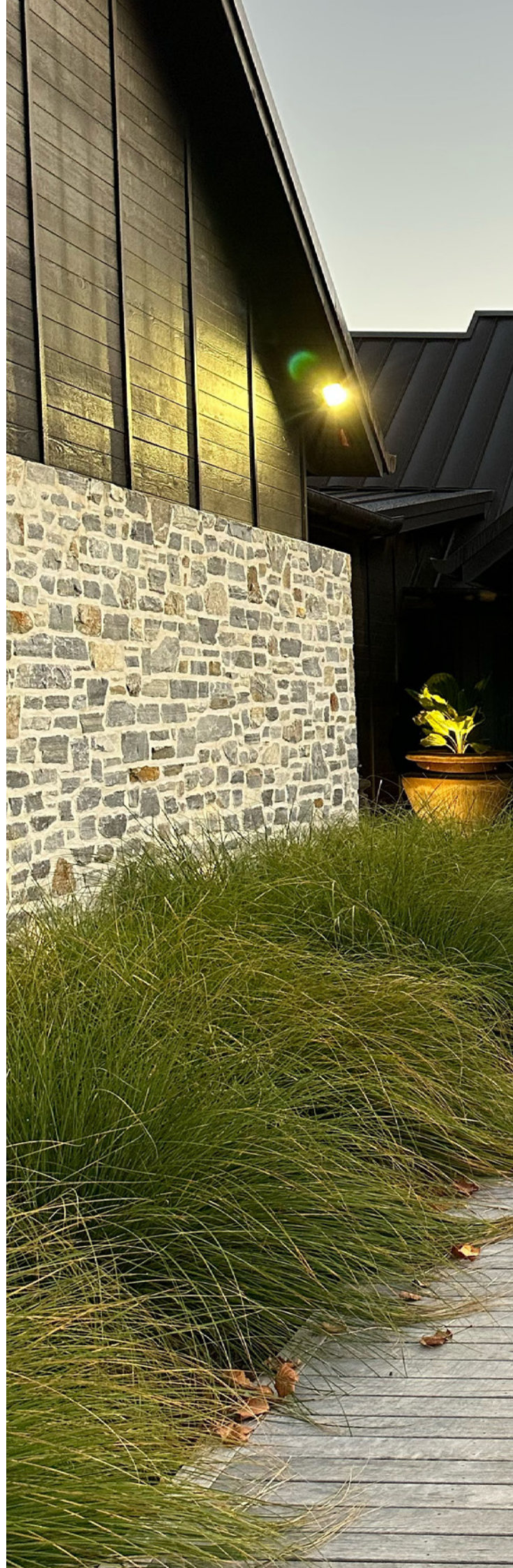


A Specifier's Guide to Natural Stone Cladding

Perils of Stopping at the Minimum Standard





INTRODUCTION

Natural stone cladding is a finished surface element that has been used as an alternative to solid natural stone products for many years. It refers to the application of a layer of natural or artificial stone to an interior or exterior wall to create the appearance that the structure is made of solid stone. When applied with skill and care, the cladding layers result in a beautiful, textured surface that can be used as a facade element, internal finish or landscaping feature.

Natural stone cladding is a favorite among architects and designers because it can add character and warmth to any project without the full cost of block construction. In addition to delivering an authentic stone finish, stone cladding is advantageous for builders and contractors as its lighter weight results in reduced structural support requirements, while allowing fast and cost-effective installation.

Knowing how to specify and install natural stone cladding properly within your project is essential given the myriad ways it can be used and sheer number of products on the market. Below we provide a useful guide for architects, designers and specifiers who are considering natural stone cladding for their next project.





When properly installed, high-quality natural stone cladding can withstand most weather elements, even Australia's harsh climate, without significant damage.

BENEFITS OF NATURAL STONE CLADDING

Natural stone cladding's durability and aesthetic appeal are the two factors that make it an appealing solution within the architecture and design sector. There are no two stone feature walls that are exactly alike; each piece has its own distinct textures, colour tones, and flaws. This uniqueness is valuable as owners in today's market place greater emphasis on individuality and authenticity in their own homes and living spaces.

Due to its organic textures, shadings, and colour variations, natural stone cladding offers the same visual depth and complexity as solid stone features. It is able to provide this premium look at a more reasonable cost than solid stone and with reduced construction requirements due to its lighter weight and ease of installation.

When properly installed, high-quality natural stone cladding can withstand most weather elements, even Australia's harsh climate, without significant damage. It is also inherently fire resistant. These qualities ensure that stone cladding will look and perform exceptionally well over its service life without requiring constant maintenance.

For some, stone cladding's main drawback is its weight, which necessitates a strong substrate and additional fixtures. However, stone cladding remains lighter than solid stone, so it may be used for a wider variety of applications both indoors and outdoors.

PRODUCT SELECTION

Types of stone

Each stone has distinct qualities and features based on its underlying geological composition. Natural stones can be categorised into three geological groups:

- sedimentary rocks (e.g. limestone and sandstone);
- metamorphic rocks (e.g. slate and marble); and
- igneous rocks (e.g. granite and basalt).

Architects must consider a variety of factors when choosing the best type of stone cladding for an application, including appearance, intended use, project size, strength, and durability. Granite, for example, is extremely hardwearing, making it an ideal option for applications that are exposed to weather. The strength of limestone, on the other hand, lies in its visual diversity and its ability to be cut to a very consistent size and shape.

Formats

There are typically two formats for stone cladding, panels and individual wall pieces. Stone cladding panels are comprised of stone pieces arranged onto a prefabricated sheet or panel. In comparison, individual wall pieces take more time to install than a cladding panel as they are applied one by one, but they give designers more freedom to determine how the stone pieces are arranged on the wall or structure.

Cut styles

Traditional. Traditional format refers to stone cladding that is cut straight on all four sides. It is often cut in random lengths and uniform heights and tight laid to give the appearance of a randomly laid brick bond.

Random. A free-form style, random cut is stone cladding supplied in organic random shapes where no two pieces are identical. This cut can be laid using a mortar joint or tight laid.

Ashlar. The ashlar pattern is made up of individual stone pieces that have been cut or worked into a square or rectangular shape. This cut is typically tight laid, with no mortar joint, and results in a smooth stone facade.

Random ashlar. Random ashlar refers to partially dressed stone cladding, which means individual stone pieces that have been cut straight at the top and bottom but

with random sides, heights, and widths. This pattern is typically fitted closely together and results in a rustic layered effect.

Ledge. Ledge cut refers to individual stone pieces that have been cut into elongated rectangle shapes. This style has a split facade and is usually tight laid to give the appearance of dry stacked individual stones without any visible mortar joints.

Z panels. This type of panelised cladding is named after the 'Z' shape that allows each stone panel to interlock with the next panel.

Laying styles

Before installation, you should talk with your stonemason about which laying style is preferable, as it can significantly affect the final appearance of the cladding. Generally, the choice is whether you choose to install stone cladding with a grout line or tight lay it.

Grout is the substance used to fill the joints or seams between individual stone pieces. Grout lines can be anywhere between 5 and 15 mm wide. Tight laying entails laying the stone so that there is no visible grout line, giving the appearance of stacked stone.

Installation methods

Wet installation. The direct adhesion method and the spot bonding method are the two primary methods for wet installation. Wet installation is often the most cost-effective technique for installing stone cladding as it requires no onsite drilling. However, wet installation can be time consuming and certain elements, such as the quality of the substrate and environmental conditions, may affect the performance of the adhesive bond.

Mechanical fixing. This method uses anchors, metal framing, steel brackets, or ties to firmly attach the stone cladding to the surface or wall. It is better suited to thick and strong cladding pieces as holes will need to be drilled into the stone. Depending on the stone weight and strength of the substrate, mechanical fixing is the safest way to install stone cladding as it ensures that the stone pieces stay attached to the surface for many years. While it may be less time consuming than wet installation, this method requires skilled labour and is expensive.

Due to its organic textures, shadings, and colour variations, natural stone cladding offers the same visual depth and complexity as solid stone features.

DESIGN AND INSTALLATION CONSIDERATIONS

Aesthetic options

The colour of natural stone can vary greatly. For example, limestone is available in pure whites, beiges and subtle browns. Granite is commonly pink, white, or variations of grey and black. Jerusalem stone ranges in colour from beige and pink to gold and brown. If you have a specific colour scheme in mind, the manufacturer or supplier can help you determine the best stone that will match.

The patterns and veining of different stones vary widely, from light and subtle patterns to harsh and dramatic veining. A highly-veined stone may elevate the naturalistic aesthetic in some spaces, but, in others, a more delicate pattern may ensure visual harmony with other decorative elements.

The texture of stone highlights its organic nature. Depending on the type of stone and method of finishing, stone cladding textures can range from coarsely fragmented to virtually smooth. The types of finishes commonly used include polished, honed, tumbled, aged, and sandblasted.

Internal applications

In general, all substrates should be dry, stable and free of contaminants. In wet-area applications such as showers, bathrooms, vanities and kitchens, it is essential to use a moisture-sensitive adhesive to ensure a long-lasting bond between the stone pieces and the substrate. A waterproofing membrane might also be necessary to minimise surface efflorescence and lessen substrate swelling brought on by prolonged exposure to moisture.

Applications where moderate to high heat is expected, such as fireplaces and kitchens, also require special consideration. In such cases, it is advised to use a heat-resistant adhesive to ensure the cladding's longevity.

External applications

Stone is a naturally resistant material, but some type of stone and installation methods are better than others in specific environments. For example, denser stones should be selected for shaded areas without direct sunlight and damp environments in general. In such conditions, soft and porous stone will be susceptible to moisture damage, mould and discolouration. The substrate will need to be waterproofed before stone can be installed. Please ensure you use the same manufacturer when it comes to glue and waterproofing. Cross pollinating manufactures will lead to a chemical incompatibility and can cause adhesion failures.

Wall or substrate properties

The quality of the substrate onto which the cladding will be fixed or adhered is critical to a successful installation. Uneven or rough surfaces, or surfaces with contaminating material like mould, paint, wax oil, or debris, will make it less likely that the cladding will stay in place.

All substrates should be cleaned and dried before installation. In some cases, the surface can be cleaned with a wet cloth or by brushing off the dust. To produce an open-pored, textured substrate conducive to adhesion, grinding, abrasive blasting, or high-pressure water blasting may be necessary.

Structural integrity must also be considered. Lightweight walls and substrate materials may be able to support tiles or lightweight stones, but heavier stone cladding may be too heavy to safely adhere to softer materials such as plaster. Before installing, it may be necessary to seek the advice of a qualified engineer, builder and or the Manufacturer of the substrate product to ensure the stability and safety of the structure.

Adhesion or mechanical fixing

In general, it is always advised to follow the manufacturer's instructions for installation, including using their recommended adhesive product. Note that weather conditions, including temperature and humidity levels, may affect installation. For example, temperatures below 10°C or above 30°C can inhibit adhesion, as can excess moisture from rain.

The height of the wall or substrate and the weight of the stone pieces are important factors. If heavy stone is to be applied to a wall that is two meters or taller, stone cladding must be installed at specific angles and utilising the mechanical fixing method. The adhesive method is sufficient when applying lighter stone cladding onto a wall that is under two metres in height.

Mechanical fixing should be used in accordance with the appropriate Australian Standards. The design and installation of multi-story high internal and external walls must adhere to all applicable National Construction Code requirements, including the proper installation methodology using the required adhesive solutions and/or mechanical fasteners.

Post-installation sealing

Some types of stone have a porous surface, making them susceptible to wear and tear. Porous materials have the capacity to absorb liquids, salts, minerals, and pollutants over time. To prevent damage to the cladding, sealing is recommended. The type of sealant used will depend on the type of stone and the level of exposure to moisture.

The two main benefits of sealing natural stone cladding are to make the stone easier to clean and to prevent or significantly reduce any discoloration on the surface of the stone. When sealed, natural stone becomes resistant to stains and microbial development, ensuring a high-quality appearance for longer.



Natural stone cladding by HAUS Collective

Natural stone gives any residential or commercial project warmth, texture, depth, and individuality. Your project will stand out with mother nature's best creation thanks to HAUS Collective's selection of stone wall cladding.

Whether your project is traditional in style, or you are seeking to make bold design statement, there is a natural stone cladding in the HAUS Collective's range that will compliment, accentuate and bring depth and interest to both indoor and outdoor spaces. Stone cladding, with its durability, versatility and organic look, is perfect to integrate within the garden space, an exterior wall or to incorporate around a fireplace or internal feature wall.

Typically between 25mm to 40mm thick with pre-made corners to give the appearance of a solid stone wall without the exorbitant product price and labour to install it, HAUS Collective's stone cladding range give you versatility to add it to any part of your design.

From brooding blacks and greys to light and airy linen and whites and coupled with the multiple designs in different shapes, textures and feels, natural stone cladding opens up a world of possibilities and individuality within your project. Styles include the elegant Avorio limestone cladding, the rustic and textural Bavarian ledge stone, the luxe finish of black lavastone, and many more.

About HAUS Collective

With over 70 years combined experience in the material supply, design and construction industry, the HAUS Collective has the firsthand experience and knowledge to assist customers in making informed product selections in natural stone. Visit their showroom in Hamilton or our website for more information.

hauscollective.com.au

