

CLASSIC

CARLOW

BLUE LIMESTONE





Carlow Blue Limestone

A Natural Classic

Carlow Blue Limestone is a remarkable natural material. Specific to the Carlow/Kilkenny region of South East Ireland, the value of this indigenous resource has been recognised since Neolithic times.

Its durability and unique appearance make for an extremely versatile product that is regularly specified for both interior and exterior uses - anything from contemporary home design to large-scale urban regeneration projects. This balance of mechanical strength and aesthetic appeal ensures that Carlow Blue Limestone is as favoured today as it was all those millennia ago.

Hardscape offers an extensive range of Carlow Blue Limestone products, all of which are individually rendered in high precision quality finishes. In this brochure, we outline the varieties, finishes and formats available and demonstrate how these products have been used to great effect in a selection of our project case studies.



Technically Superb Elegant and Timeless

The story of Carlow Blue Limestone began some 340 million years ago, during the Carboniferous Period. At this time a fossil group, known as crinoids, flourished in the warm, shallow seas that extended over what is now North West Europe. This marine life, along with brachiopods and gastropods, crystallised with calcium carbonate to form a sedimentary rock with unique fossilised coral strata. It remained this way for hundreds of millions of years.

The civilisation of man across Europe brought with it the desire to build robust and resilient structures. In Ireland, the utilisation of Blue

Limestone closely mirrors the development of society. Long before the Pyramids of Egypt were first conceived, Neolithic people used the stone to construct monuments such as tombs and dolmens. As Irish society progressed, the stone was appropriated for more sophisticated purposes as seen in the intricately carved, world-renowned, Celtic crosses.

The elegant and timeless qualities of Carlow Blue Limestone have been continuously celebrated throughout Irish building history, from its ancient monasteries and abbeys to the country's modern-day architecture.

The considerable longevity of some of these older structures is testament to the technically superior nature of the material.

Carlow Blue Limestone is a unique and rare resource. At Hardscape, we understand the responsibility that this entails and work with our clients to ensure the stone's appropriate use in the great buildings and cityscapes of today, and into the future.

VARIETIES

Commercial

Originating in a clear, light bed of the stone, this variety of Carlow Blue Limestone is bright blue-grey in appearance. Its ancient crinoidal fossils provide minor tonal variations and the stone also carries some white veining. Ideal for many types of finish, this variety develops a particularly beautiful blue hue when a dry-sanded finish is applied to it.

Fossil

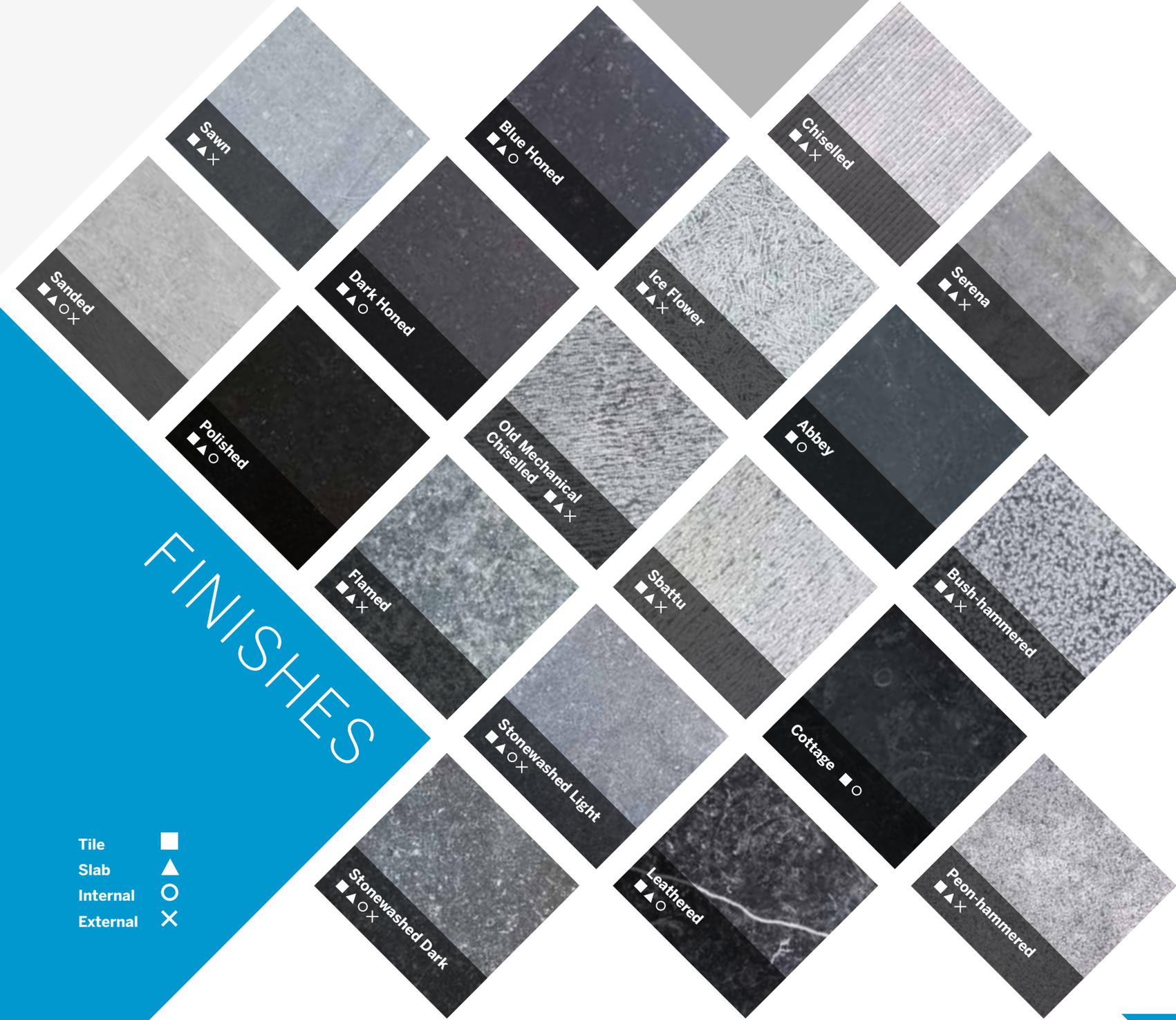
Carefully sourced from special fossil beds, this variety features relics of ancient marine life which are a distinguishing characteristic of this stone. These large oyster and coral fossils are unique to Carlow Blue Limestone and create an intriguing visual pattern.

Selected

Our Carlow Blue Selected Limestone is darker in shade than the commercial variety. It is suited to an array of purposes and finishes. However, the contrast between its dark background and component marine fossils is most striking when a honed finish is applied.

FINISHES

- Tile ■
- Slab ▲
- Internal ○
- External ✕



TYPES

The versatility of Carlow Blue Limestone is demonstrated by the many types of hard landscaping, paving and accessories in which it can be provided. All products are supplied direct from source or cut and produced at Hardscape's Midlands facility, using our in-house saws and finishing capabilities.

The most commonly specified types for Carlow Blue Limestone are:

- Paving
- Setts
- Kerbs
- Steps
- Channels
- Copings
- Tactiles
- Benches
- Walling
- Bollards
- Masonry
- Balustrades
- Specials

Specials are bespoke solutions for a range of projects such as artistic or architectural commissions, urban landscaping or one-off plinths or boulders. For further information on how we can bring your project to life, and for details of our Artscape process, please consult a Hardscape sales representative.



THE MORE LONDON PROJECT

The More London Project is a new working community, centred around City Hall, and situated on the south banks of the Thames. The development was completed in 2009 and has been pivotal in the regeneration of the borough of Southwark.

The architects, Foster + Partners, envisioned a new streetscape containing a three-hectare plaza. A key characteristic of the resulting public space is the flame-textured Carlow Blue Limestone paving, supplied by Hardscape.

In an innovative use of the material, the 30,000m² flame-textured paving was provided in random-length strips. These were laid in a unidirectional pattern to create the impression of sweeping through the cityscape.

An additional element of the project included a dramatic, sunken limestone amphitheatre, known as 'The Scoop'. Situated adjacent to City Hall and

seating 800, The Scoop is host to high-profile public events, theatre productions and concerts. Expertly crafted limestone seating, cladding and balustrading enhance the visual environment and a bespoke, limestone water feature creates a unifying focus for this exciting new urban development.

The project team, which included Townshend Landscape Architects and Westminster City Council, received the 'Best Built Project' award at the London Planning Awards 2008. Adjudication was based on factors including quality of work, sympathy of scale to surroundings and the innovative use of stone.





Materials Used
Variety: Carlow Blue Selected Limestone
Finish: Flamed
Type: Random-length, plank-style paving strips, bespoke seating, cladding and balustrading

TRANSPORT INTERCHANGE

STOKE-ON-TRENT

As part of a multi-million pound redevelopment of Stoke-on-Trent, an iconic new bus station was designed for Hanley. The landmark building opened in March 2013 and signalled the intention to transform this area of the city centre into a retail and leisure destination.

The old bus station, and its surrounding 1960s buildings, were demolished to provide the site for a new shopping centre. The state-of-the-art, new bus station was constructed on the site of the former John Street car park. A sculptural roof forms a striking feature of the building, rising and falling to link the structure with the surrounding public spaces and retail quarter.

Hardscape worked closely with the landscape architects, Planit-IE, and Stoke-on-Trent City Council to deliver the most appropriate solutions for the development. Carlow Blue Fossil

Limestone was supplied for paving and to create bespoke, honed benches. The stone features both in the external spaces around the station and within the covered passenger walkways which form part of the building itself. The use of Carlow Blue Limestone, combined with granite inserts, evokes the former coal seams and local materials from which Hanley was built.

The new bus station has become a catalyst for further regeneration projects which have bolstered Stoke-on-Trent's position as the commercial heart of North Staffordshire.





Materials Used

Variety: Carlow Blue Fossil Limestone

Finish: Sanded, old mechanical chiselled, flamed and polished

Type: Paving, steps and benches

THE SEAFRONT

REDCAR

Completed in April 2013, the redevelopment of the seafront at Redcar was undertaken by landscape architects and urban designers, Smeeden Foreman. As winners of a RIBA International Design Competition, they led a team of architects and engineers, in conjunction with Redcar and Cleveland Borough Council, Environment Agency and Birse Civils Ltd, that brought to life an ambitious plan for this North Yorkshire seaside town.

Following community and stakeholder consultation, the scheme addressed both functional and recreational concerns. Existing sea defences were replaced, permanent areas for RNLI lifeboat and fishing boat mooring were constructed, highway realignments were completed and bus shelters erected. Recreational elements include a café, waterplay, sculpture, a multi-use events space, seating areas and an immersive lighting experience.

The Carlow Blue Fossil Limestone paving, provided by Hardscape for the project, forms a prominent part of the design scheme. The stone also features in the

distinctive bus shelters which are located along the promenade. Hardscape also supplied additional hard landscaping materials such as Magma Granite and Egerton Red Sandstone.

The seafront now offers an attractive, inclusive leisure space. The appropriate use of natural and hard landscaping materials has created an urban, seaside amenity that delicately balances form and function.





Materials Used

Variety: Carlow Blue Fossil Limestone

Finish: Flamed and sawn

Type: Paving and setts, cladding and copings for bus shelters

LAXEY

ISLE OF MAN

A significant regeneration project to enhance the heart of Laxey Village was completed in advance of the 2015 TT Festival. The successful implementation of the scheme was marked by the unveiling of a commemorative statue remembering those who worked in the Great Laxey Mine.

The project involved the upgrading of pavements and improvements to Laxey Rose Garden and Manx Electric Railway Station, along with the creation of a village square.

A primary aim of the regeneration scheme was to improve pedestrian access within the village centre. Key to this was the provision of a paved link to connect the MER Station with the new square and the Rose Garden. This link included combined stepped and ramped access to create a safer, more accessible route for pedestrians, while also serving to open up the space.

The plans were overseen by the Laxey Regeneration Committee and the finished results reflect the original public consultations. Hardscape provided high quality Carlow Blue Limestone and granite paving for the project. These materials improve the public space and adhere to the strict requirements surrounding this area of conservation.

Hardscape is proud to have worked on further regeneration projects across the Isle of Man, offering our invaluable knowledge and experience with material selection.





Materials Used

- Variety: Carlow Blue Selected and Fossil Limestone
- Finish: Flamed, old mechanical chiselled, chiselled and dark honed
- Type: Paving, setts, kerbs, steps and copings

DONEGALL QUAY & LAGAN WEIR BRIDGE

BELFAST

Social Development Minister, Nelson McCausland unveiled a new 'eco-space' for the people of Belfast in July 2014. Located on top of the Donegall Quay car park, this new development provided a pedestrian-friendly recreation area for the city to enjoy.

Donegall Quay is an important part of Belfast's riverside regeneration and the development is sympathetic to its setting, beside the River Lagan. It makes use of natural materials such as grass, wood and stone. A number of public artworks were commissioned for the scheme and a representation of Sammy the Seal, a frequent visitor to Belfast Lough, holds a prominent position in the space.

Leading urban landscape architect, Anthony McGuigan from The Paul Hogarth Company, felt that Sammy should play a part in his vision for

the streetscape. Today, Sammy can be seen rising from a 'sea' of granite paving and setts, supplied by Hardscape Ireland. This 'sea' is made up of a blend of high technical quality granites, namely Jina Blue, Kobra and Mist. Carlow Blue Limestone was specified to form bespoke, anti-skate walling borders, which provide a balanced foil to the large expanse of granite.

Following works on Donegall Quay, Hardscape Ireland continued its support for the client team in the next stage of Belfast's riverside regeneration. This saw the opening

of the Lagan Weir Pedestrian and Cycle Bridge in June 2015. Hardscape Ireland worked with AECOM Belfast on this phase to provide a palette of indigenous European granites for the bridge. The chosen paving, a blend of Venato Roriz, Corga, Réal and Favaco, enhances the pleasing aesthetic of the bridge and contributes to the improved, urban environment.





Materials Used
Variety: Carlow Blue Selected Limestone
Finish: Flamed
Type: Bespoke, anti-skate, bullnose edge walling units



TECHNICAL

Carlow Blue Limestone was formed approximately 340 million years ago as a compact crinoidal limestone with a rich fossil content. Finely dispersed carbon, through the stone mass, results in a typical blue-grey colour.

Technical Specifications	Test	Average Value
Apparent Density (kg/m ³)	EN 1936	2677
Porosity (% vol)	EN 13755	0.10
Frost Resistance	EN 12371	Frost Resistant (F1)
Thermal Expansion (mm/mK)	EN 14581	0.0055
Compressive Strength (N/mm ²)	EN 1926	136
Flexural Strength (N/mm ²)	EN 12372	16.8
Wear Resistance (mm)	EN 14157	18.4
Ultrasonic Velocity (m/s)		5239

Concurs with British Standard Laying Methods

BSEN 1341 (slabs) / 42 (setts) / 43 (kerbs)
– external testing and performance

BSEN 12057 (tiles) / 58 (slabs)
– and internal

BSEN 12059 (dimensional stone)
– testing and performance

BSEN 771-6 (masonry units)

BSEN 1469 (cladding)

Chemical Composition

Over 98% Calcite, 0.7% Dolomite, 0.7% Quarts, 0.2% Organic Carbon, less than 0.1% Iron Sulphite.

Due to its extremely low iron composite content, Carlow Blue Limestone is suitable for use in pressurised urban or industrial environments without risk of compromising the stone through brown discolouration or staining.



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