

PRIMA

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PORPHYRY

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UNRIVALLED BEAUTY







# HISTORY OF PORPHYRY

The qualities of porphyry have long been recognised and admired. Ancient Egyptian, Roman and Assyrian-Babylonian archaeological sites have uncovered significant relics and monuments hewn from this igneous rock.

Records indicate that the earliest known use of the term 'porphyry' dates back to AD 500, when 'Imperial Red Porphyry' or 'Ancient Red Porphyry' was extracted from the Jebel Dhokan quarry in the Egyptian desert. At that time, the stone was widely adopted to produce columns, vases, sarcophagi and busts.

Deriving its name from the Latin 'porphyra', meaning purple-red in colour, red and violet porphyry signified prestige and majesty in Roman times. Thousands of workers were deployed to intensively mine quarries across the vast Roman Empire. Porphyry's association with the emperors themselves imbued the stone with even greater symbolic meaning. These rulers, who personified divinity, endorsed the beauty of porphyry from birth through to death – porphyry adorned the walls of the palaces where they were born and many emperors were laid to rest in sarcophagi crafted from the material.



# THE PANACEA OF PAVING CHOICE

In the modern era, Italian porphyry has become an extremely popular paving choice among innovative urban designers and landscape architects.

This is largely down to two characteristics – functionality and aesthetics. Porphyry is a strong, durable stone with a reduced absorption coefficient and low-impact quarrying. However, it is the natural tones and beauty of porphyry that make it the paving of choice for so many projects throughout the UK, Europe and worldwide.

In partnership with certified Northern Italian quarries, Hardscape has been developing the production quality of Prima Porphyry for over 25 years. Our quarries limit their environmental impact by actively reducing CO<sub>2</sub> emissions by over 1,000 tonnes per year.

Using stringent selection processes and independent, industry-recognised monitoring, we provide an assured supply of Prima Porphyry to projects across the UK. Whether a tranquil piazza or a heavily trafficked forecourt, the material never fails to impress and regularly features in award-winning schemes.

Prima Porphyry offers raw beauty, guaranteed performance and competitive pricing. What's more, the lack of mechanical interference during extraction ensures that the same material and colour can be selected for all applications, including setts, cobbles, slabs and kerbs. This makes Prima Porphyry the universal choice or 'panacea' for quality paving projects that stand out!





■ = Porphyry Production Regions

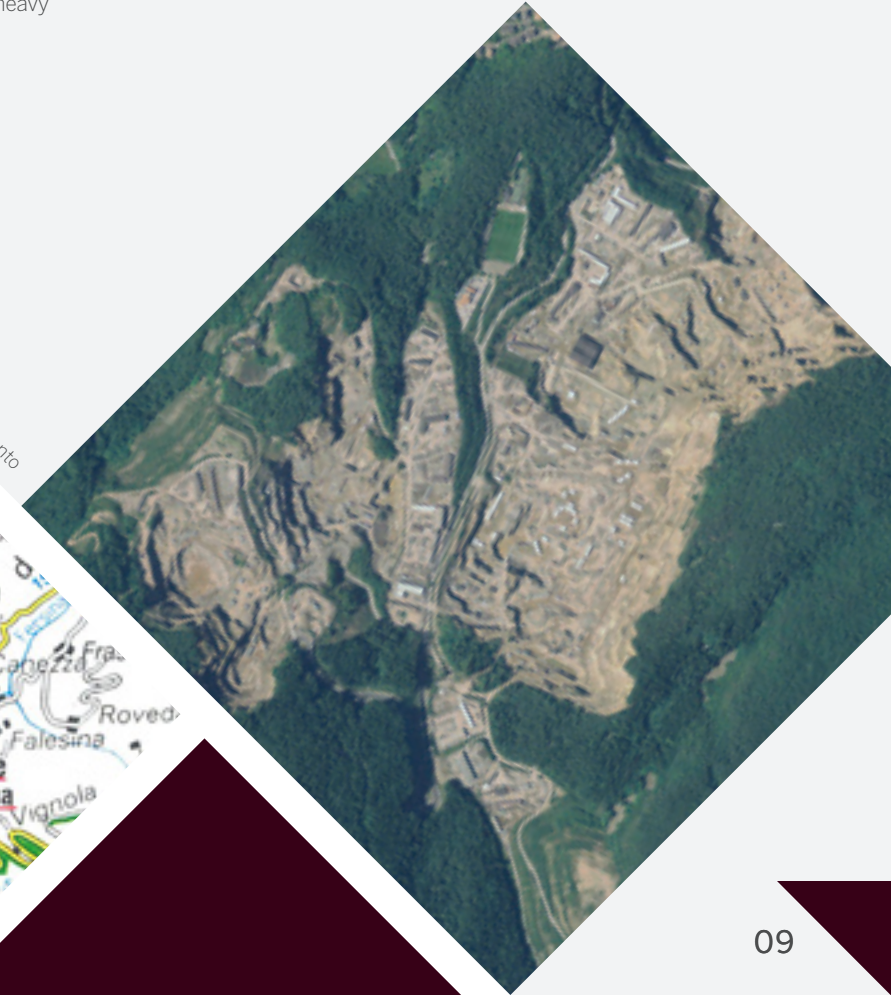
## WHY PRIMA PORPHYRY?

Sourced in the Albiano and Lavis regions of Trento, Hardscape's Prima Porphyry is quite unlike other quarried porphyry from Northern Italy. The extraction process we employ highlights the geological formation of the material and its unique thickness ensures a high transverse strength. This resistance to breaking loads makes Prima Porphyry an ideal paving solution for heavy traffic settings.

The material can also withstand prolonged weathering. In fact, the ability to maintain its aesthetic attributes, even after millions of years of exposure, is a typical characteristic of the stone.



■ = Albiano & Lavis Trento





# TECHNICAL

While the physical and mechanical nature of porphyry from different regions is relatively similar, stone from individual quarries does lend itself to specific end uses. At first glance, materials from one area may look the same as the next but they possess distinct qualities. Only a number of regions in Northern Italy can supply a continuous, durable product, like Hardscape's Prima Porphyry, in the longer term.

The most distinguishing characteristic of porphyry is its natural stratification. This is what defines the quality of the stone and sets our quarries apart from other extractive areas in Trento.

Variations in the cooling of the lava (the material from which porphyry is formed) influence the density of stratification in each location. More stratification creates a thinner material that can lead to cracking and breaking. Less stratification, which is predominant in the Albiano and Lavis regions, produces a much stronger and more compact porphyry that can be quarried in slabs of substantial thickness. As a result, Hardscape's Prima Porphyry is particularly suitable for paving projects where considerable density and durability is required.

## Prima Porphyry and Granite Comparison

	Standard	Prima Porphyry	Granite
Water Absorption	BS EN 13755:2002	0.7%	0.2%
Slip Resistance	BS EN 1341:2001	66 dry, 61 wet	68 dry, 55 wet
<b>Flexural Strength</b>	<b>BS EN 12372:2006</b>	<b>24 MPa</b>	15 MPa
Flexural Strength (Frost)	BS EN 12371:2001	FR	FR
<b>Abrasion</b>	<b>BS EN 1341:2001</b>	<b>14.6mm</b>	18mm
Polished Paver Value	BS EN 7932:2003	53 mean	50 mean
Compressive Strength	BS EN 1926:2006	196 MPa	180 MPa

FR = Frost Resistant





## AN EDUCATION IN QUALITY PRODUCTION FACILITIES

To experience the calibre of the material first hand, Hardscape regularly organises educational visits for specifiers and clients to the Prima Porphyry quarries in Albiano and Lavis. These family-owned-and-run quarries have been developing eco-friendly methods of extraction and processing since 1966. Production is based on a photovoltaic system which considerably boosts the stone's green credentials.

Visitors can examine the aesthetic diversity of the stone at source – a diversity that is preserved through rigid quality control and delivers rich blends of violets, oxides, browns and greys to suit our clients' individual requirements.

In addition, various aspects of the production cycle can be observed, from sawing and finishing techniques to packing and dispatch. As with all our products, Prima Porphyry is distributed through an honest and transparent supply chain. Hardscape is an Achiever Status Member of the Ethical Trading Initiative and we strictly adhere to the code of practice as set out by the Modern Slavery Act 2015.



# COLOURS

Prima Porphyry from Trento is unique in its colour intensity. Formed close to the earth's surface, over millions of years, the oxidation of its ferrous minerals creates a complex colour palette.

Hardscape provides two mixes, violet and grey, in original and ever-changing patterns. The colour tones vary for both mixes and we assist our clients in identifying their preferences during the selection process.

## VIOLET MIX

The colour of porphyry is determined by the mineralogical composition of the stone. The chromatic variety in our violet mix stems from the differing metal content in the magma and produces a mixed grey base with high percentages of red, rust and purple tones.



# COLOURS

## GREY MIX

This mix carries the same chromatic diversity as the violet but its mineralogical content creates two dominant tones of grey-brown and grey-green. Though lower in percentage, distinct purple-red and rust colours also feature.

Colour specification is offered through our colour selection service and on-site inspection can be arranged, should it be required.



# TYPES & FINISHES

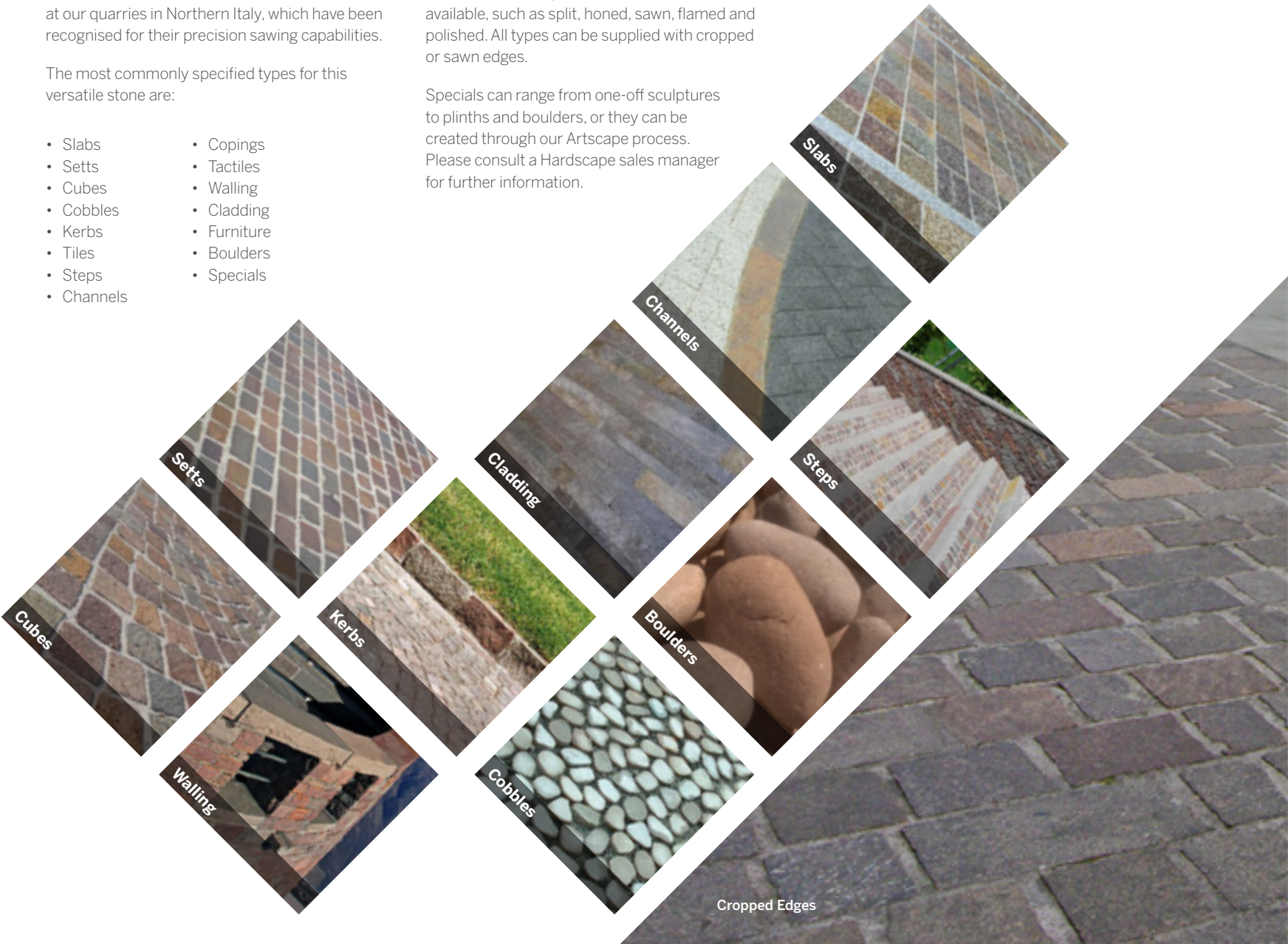
Prima Porphyry can be supplied in a large variety of paving, accessory and hard landscaping types and finishes. These are extracted and manufactured at our quarries in Northern Italy, which have been recognised for their precision sawing capabilities.

The most commonly specified types for this versatile stone are:

- Slabs
- Setts
- Cubes
- Cobbles
- Kerbs
- Tiles
- Steps
- Channels
- Copings
- Tactiles
- Walling
- Cladding
- Furniture
- Boulders
- Specials

Prima Porphyry comes quarried in a flat, natural cleft surface and this is our most popular finish. Other mechanically added finishes are also available, such as split, honed, sawn, flamed and polished. All types can be supplied with cropped or sawn edges.

Specials can range from one-off sculptures to plinths and boulders, or they can be created through our Artscape process. Please consult a Hardscape sales manager for further information.





# SIZES & LAYING PATTERNS

Although both igneous rocks, porphyry and granite differ in several ways. Granite is an intrusive formation (composed of slow-cooling magma inside the earth’s crust) and is generally supplied as a natural block, cut to specification, before being manually textured to create slip resistance. Porphyry is also formed intrusively (through rapidly cooling magma at the earth’s surface) but it accumulates in sheets to produce a natural cleft or ‘as quarried’ texture. This surface provides exceptional tolerance and safety for heavily trafficked areas.

This sheet-like composition also means that porphyry can be supplied at any size required. As design ambitions and engineering innovations evolve, Hardscape is continually testing the limits to maximise slab size, shape and thickness.

Tiles, cubes, setts (binders) and split tiles are the most popular Prima Porphyry products and an assortment of laying methods can be implemented to display this beautiful material at its best. Cubes are perhaps the most versatile type and offer endless design possibilities. These include fans, overlapping arcs, concentric circles and parallel lines to name just a few.

Tiles and setts offer a simpler laying technique than cubes. The laying of cropped or sawn-sided tiles does not differ due to both finishes having variable depths between the two quarried faces. However, the aesthetic effect will differ as the width of the joints has a bearing on the finished result.



Cobbles	
For linear designs tolerance +/-5mm on plan	
Plan	Depth
80x80	30-60
80x80	60-100
100x100	30-60
100x100	70-100

For overlapping arcs tolerance as BS EN 1342	
Plan	Depth
40x60	40-60
60x80	50-90
80x100	70-110
100x130	90-140
120x150	110-180
140x180	130-195

- All dimensions in mm.
- Plan denotes width x length.
- Depth denotes thickness.



Setts (Binders)	
Tolerance as BS EN 1342	
Plan	Depth
100x150-400	50-80
100x150-400	70-110
150x150-400	70-110
150x150-400	100-150
150x200-400	150-200



Kerbs	
Width	
50-120	
Depth	
200-300	
Length	
Variable	



Slabs	
Tolerance as BS EN 1341	
Plan	Depth
100-400	30-60
100-400	60-80
100-400	Up to 150-200





# HANS CRESCENT LONDON

Commissioned by the Royal Borough of Kensington and Chelsea (RBKC), this project involved the upgrade of a significant public realm to bring it in line with its elegant surroundings.

Situated in the highly prestigious Knightsbridge area of South West London and adjacent to Harrods department store, Hans Crescent is a busy thoroughfare and public space. However, in terms of aesthetic appeal, it fell far short of its environs. To address this discrepancy, RBKC engaged Project Centre, a leading streetscape design consultancy, to reimagine the area.

The design solution hinged on the creation of a shared surface. This was achieved by raising the carriageway to meet the footway, producing a flush streetscape. The proposal incorporated a strong colour palette of premium materials, complemented by bespoke street furniture, including lighting, seating and gullies.

As part of the project team, Hardscape supplied paving in Prima Porphyry and Royal White Granite, which was used across the entire site. These premium materials are more typically seen in pedestrian-only schemes but the nature of the location called for the highest quality approach. Using a bespoke red and brown mix, the Prima Porphyry produces warm, earthy tones set against the crisp granite. Similarly, the combination of radial and tessellating porphyry and granite surrounds with integrated planting forms a striking avenue.

Works were carried out by Ringway Beach Ltd, who delivered exceptional attention to detail and a level of precision that matched the overall design ambition.





**Materials Used**

Prima Porphyry slabs and setts in a bespoke red and brown mix, with natural cleft surfaces and sawn edges.



## AWARD-WINNING CATHEDRAL QUARTER LEICESTER

As part of a £2.5m regeneration project, a new public realm around Leicester Cathedral was unveiled.

Completed in the summer of 2014, the project was funded by the Diocese of Leicester, Leicester City Council and private donations, with additional support from Leicestershire County Council. It saw the revitalisation of Leicester Cathedral and its surroundings by unifying the Cathedral Gardens with the newly enhanced Jubilee Square.

The Cathedral Gardens now offer seating for up to 800 people and provide the location for the King Richard III Visitor Centre. As the Right Reverend Tim Stevens noted, 'Most great cities have a cathedral at their heart and our cathedral will now be set in a garden space which will be a magnet for thousands who will visit Leicester in the years ahead.'

Central to the scheme was the establishment of a dedicated setting for the statue of Richard III. Having been relocated from the Castle Gardens, the bronze statue now enjoys a prime position in the Cathedral Quarter.

Hardscape supplied the hard landscaping for the project. Tessellated and traditional Prima Porphyry sett paving plays a key role in the garden design. This is offset by Royal White Granite planter units, bollards and tactiles, Kellen Liscio Nero paving, Alpendurada Granite edging and a bespoke Artscape water feature in Royal White Granite with stainless steel, waterjet-cut lettering.

Prima Porphyry paving setts also appear in the adjoining Jubilee Square. Once the site of a car park, the new square features a large open area with lawns and hard landscaping. Hardscape supplied the Prima Porphyry paving, Royal White Granite kerbs and Crystal Black Granite channel edgings that are prominent components of this welcome urban oasis.

The Cathedral Gardens scooped the Principal Award for Restoration and Regeneration at the 2015 BALI National Landscape Awards. The project was delivered by P. Casey (Land Reclamation) Ltd and landscape architects Gillespies.



**Materials Used**

Prima Porphyry tessellated paving in violet mix, with natural cleft surfaces and sawn edges.



# HOLYWOOD PUBLIC REALM NORTH DOWN

The Northern Ireland town of Holywood underwent a sensitive upgrade in a £2.4m regeneration scheme.

Following an extension of the railway line along the North Down coast in the mid-19th century, Holywood became the residence of choice for Belfast's industrial elite. The magnificent Victorian buildings they constructed still dominate the town's architecture today and this has led to its designation as an area of conservation. As such, protection and respect were critical to the rejuvenation of the town's public realm.

Jointly funded by Ards and North Down Borough Council and the Department for Social Development, the clients sought a design solution that reflected the rich history of the area. Hardscape was involved from the outset of the project, initially advising AECOM on material selection during the design phase and subsequently supplying FP McCann with the final hard landscaping products during Phase 1. For Phase 2 we advised McAdam Design regarding the material selection and choice for the Redburn Square area which continued with the Prima Porphyry for paving units with the War Memorial being completed in unique Portugese Granite. All materials were supplied to Northstone on this phase.

Tasked with creating a space that paid homage to the town's heritage, Hardscape recommended Prima Porphyry as the primary paving material. While renowned for its aesthetic qualities, the stone is also incredibly durable – perfect for the high footfall around the town centre. The historical properties of Prima Porphyry also informed its specification. Considered a royal stone by both the ancient Egyptians and Romans, the rich purple tones and large grain crystals of Prima Porphyry integrate beautifully with Holywood's historical buildings.

The sensitive regeneration of Holywood's communal areas has helped to preserve the character of the town, celebrating its Victorian legacy and instilling a sense of pride in its citizens.





**Materials Used**

Prima Porphyry paving in a bespoke, select-grade oxide mix, with natural cleft surfaces and sawn edges.



# OBAN BAY PUBLIC REALM ARGYLL AND THE ISLES

The transformation of a public space overlooking Oban's breathtaking bay has created a focal point for visitors, marine-based activities and businesses alike.

The investment forms part of Argyll and Bute Council's CHORD fund, an initiative to rejuvenate the district's waterfront towns. In an effort to attract more footfall, a new visitor centre and berthing facility were planned for Oban. To match these ambitions, the town also required a revamped public area.

The new development incorporates a waterfront terrace, a flexible open area for small-scale events and a shelter with inlaid artwork and ornamental LED lighting. Hardscape played an integral role in the project, working alongside the architects from Capita, to deliver innovative hard landscaping that encourages passersby to sit, relax and enjoy the spectacular sea view.

Magma Granite paving was used to brighten up the previously dull pathways, with its blended red and orange tones imparting a warm and dynamic feel and echoing the vibrancy of the lighting and artwork. Benches, sculpted from Kobra Granite, were designed in curved shapes to mirror the sweeping tide.

Prima Porphyry setts and Blue/Grey Burlington Stone walling were chosen for their traditional appearance, specifically the Prima Porphyry, chosen for natural surface appearance and lends itself to the surrounding landscape of the bay and sits well with the surrounding architecture. The vivid purple hues and glittering crystals of Prima Porphyry, combined with the raw texture of the layered Blue/Grey Burlington Stone, have established a distinctive scheme for Oban.

In addition, Hardscape crafted a bespoke commemorative plaque for the space. Artscape techniques were used to create a red remembrance poppy etching as a tribute to those who lost their lives during the First and Second World Wars.





**Materials Used**

Prima Porphyry setts in grey mix, with natural cleft surfaces and sawn edges.



# CITY OF CULTURE PUBLIC REALM HULL

Alongside the creation of a diverse arts and cultural programme, Hull embarked on an extensive regeneration scheme to mark its designation as UK City of Culture 2017.

A celebration of the unique character of the city, its people, history and geography was the major focus for Hull as UK City of Culture in 2017. Recognising the transformational power of culture, the award also sparked the decision to revamp the main public areas within the city centre. The huge investment by Hull City Council included 14 streets and four public squares, connecting the train station to the old town and docks.

Central to the project was the desire to create an attractive and inviting urban space, one that encouraged social interaction and commercial life. Most importantly, the public realm needed to belong in Hull, complement its architecture and respond to its unique cultural offerings.

The project team, made up of Hull City Council, re-form (landscape architects), Eurovia UK (contractors), Arup (engineers) and Hardscape, worked closely together to ensure the rejuvenation was a resounding success.

The scale of the project and the timeline for construction placed a great deal of importance on the specification and delivery of material. With an immovable end date presented by the Culture calendar, efficient delivery of materials was paramount. All in all, over 45,000m<sup>2</sup> of stone were laid over a period of 18 months. Durability was also crucial, with the specified materials needing to tolerate daily, city centre activity.

Magma Granite was chosen as the principal material, both for its strength and colour variation. Its warm tones marry well with the predominant brick of the local buildings and bring together other architectural flourishes, like the cropped and flamed Portington Granite setts. Cropped-edged Prima Porphyry and Kellen Lavarro provide the accent detailing within the scheme. Several Artscape techniques were also incorporated in the design. These included lettering on the central water feature, braille paving and a stainless steel paving strip that followed the position of the old castle walls.

Hardscape's Prima Porphyry has an inherent unique striking colour mix and European provenance, ensuring quick lead times from quarry to site, helping to facilitate the supply of a high quality natural stone to tight deadlines and our customer's schedule. Having been supplied to a large number of similar projects in recent years, Prima Porphyry has an established pedigree and is growing in popularity. Hardscape only use the best quality slabs selected by eye and hand split by our Italian Artisan quarry partners. In addition to the colour choice and natural surface and edge finish it was selected for use in Hull due to its excellent technical properties both in strength and frost resistance, having proven over time it is a perfect material to withstand Hull's harsh winter climate.





**Materials Used**

Prima Porphyry setts in grey mix, with natural cleft surfaces and cropped edges.













STONE FROM TRENTINO  
AROUND THE WORLD  
LA PIETRA TRENTINA NEL MONDO

2. Stone from Trentino

THE PORPHYRY MANUAL

1. The Porphyry Manual

1. **The Porphyry Manual**  
Paolo Tomio and Fiorino Filippi  
2. **Stone From Trentino Around The World**  
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