

STONES OF BATH



Ian Parry © Bath in Time

Dig here and you shall find great treasure

St Aldhelm 605-709

INTRODUCTION

When St Aldhelm reputedly threw down his glove on Box Hill outside the city of Bath he was referring to the vast and valuable reserves of Bath Stone that lay beneath his feet.

An inspiration to stone masons, architects and builders, from the Romans to the present day, this soft glowing golden stone defines the history and the culture of the city of Bath.

UNDER THE SEA

135 million years ago much of southern England was under the sea. In the area around Bath the sea was warm and shallow. Bath Stone is formed by ooliths, tiny egg-shaped pieces of calcium carbonate which grew by precipitation on the sea floor and after burial beneath other sediments became a rock.

There are very few fossils found in Bath Stone because it was formed in the sandy floor of the sea bed which did not support much life.

Beautiful fossils of coral and sea sponges found in the hills around Bath indicate the temperate marine environment that formed Bath Stone.

The arrows on this piece of Bath Stone show the tiny ooliths and the small shell fragments.



Lesley Green-Armytage © Bath in Time

Acorns designed by John Wood the Elder made from Bath Stone decorate the rooftops of the Circus.



With permission of Professor W.J. Kennedy, Director, Oxford University Museum of Natural History

Map of the area around Bath, one of the earliest of William Smith's geological maps circa 1799. William Smith, known as the father of geology, drew the first geological maps of England. This is his map of the geological strata underneath the city of Bath and the surrounding area.

The eye roved anxiously over the interesting expanse which extended before me ... and embraced all the vicinities of Bath and Bristol; then did a thousand thoughts occur to me respecting the geology of that and adjacent districts

William Smith, geologist

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Daniel Brown © Bath in Time

This masonry is wondrous; fates broke it, courtyard pavements were smashed; the work of giants is decaying

The Ruin – Anglo Saxon poem circa 8th century (anon)

SET IN STONE

Bath Stone is renowned for its use in the building of Georgian Bath. The vision of John Wood the Elder and the enterprise of Ralph Allen combined to create the neo-classical city. But the history of Bath Stone goes much further back in time. Through Mediaeval, Norman and Anglo Saxon eras to the Romans.

The first evidence of quarrying was by the Romans who used the stone for building houses, temples and monuments. Some Roman stone has evidence of pigment which suggests that they may have decorated buildings and carvings with paint.

The Romans left Britain in 410AD, but the scale and grandeur of their buildings lives on. In the Anglo Saxon poem, *The Ruin*, Roman buildings are described as *the work of giants* as this was the only way to explain how these magnificent structures were created. Roman stone, which may have been plundered from the ruins, has been found in Anglo Saxon buildings. The Anglo Saxons used the stone for significant buildings, such as churches and shrines, and also for carving.

Layers of history can be uncovered at Bath Abbey where Saxon and Norman carvings have been found. The Mediaeval Abbey stands on the site of a Norman Cathedral, which replaced an original Anglo Saxon church whose marvellous workmanship is referred to in 957.

Stone angel from Anglo Saxon church Bradford On Avon. Plaster cast made and photographed by James Thomas Irvine in 1875.



© Bath in Time

Roman Baths excavations in progress circa 1890.



Detail of Norman Figure thought to be part of a Reredos Screen. Circa 1120 Bath Abbey Vaults.



© Bath in Time

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A T Brooks collection, courtesy of The Building of Bath at Work

*Thus at Bath we have a freestone,
perhaps the finest in the Kingdom*

John Wood of Bath, architect 1742

THE BUSINESS OF STONE

The most celebrated entrepreneur in the story of Bath Stone was Ralph Allen who in the eighteenth century had the vision and the budget to excavate and transport the stone on a large scale. The 'Father of English Geology', William Smith, owned a quarry near Bath, but poor stone and bad timing led to his eventual financial ruin.

After Allen's death in 1764, a new generation of quarrymasters took over. These men were stonemasons and builders and often quarried stone to order for particular buildings. Samuel Nowell quarried stone in Combe Down and was probably the master mason and builder for Bath's growing suburban terraces. In a man's world, Sophia Rudman was unusual in taking over the role of quarrymaster after her husband's death.

Bath Stone was big business. The Avon Navigation Company re-opened the river to Bristol in 1726 and the stone was used in Bristol, London and beyond.



© Oxford Archaeology

A recent discovery of graffiti in The Combe Down mines shows a drawing of a trow. These flat bottom boats were used for transporting Bath Stone right up until the early 20th century.



Free Stone Quarry by John Hassell, 18th century
Victoria Art Gallery, Bath and North East Somerset Council

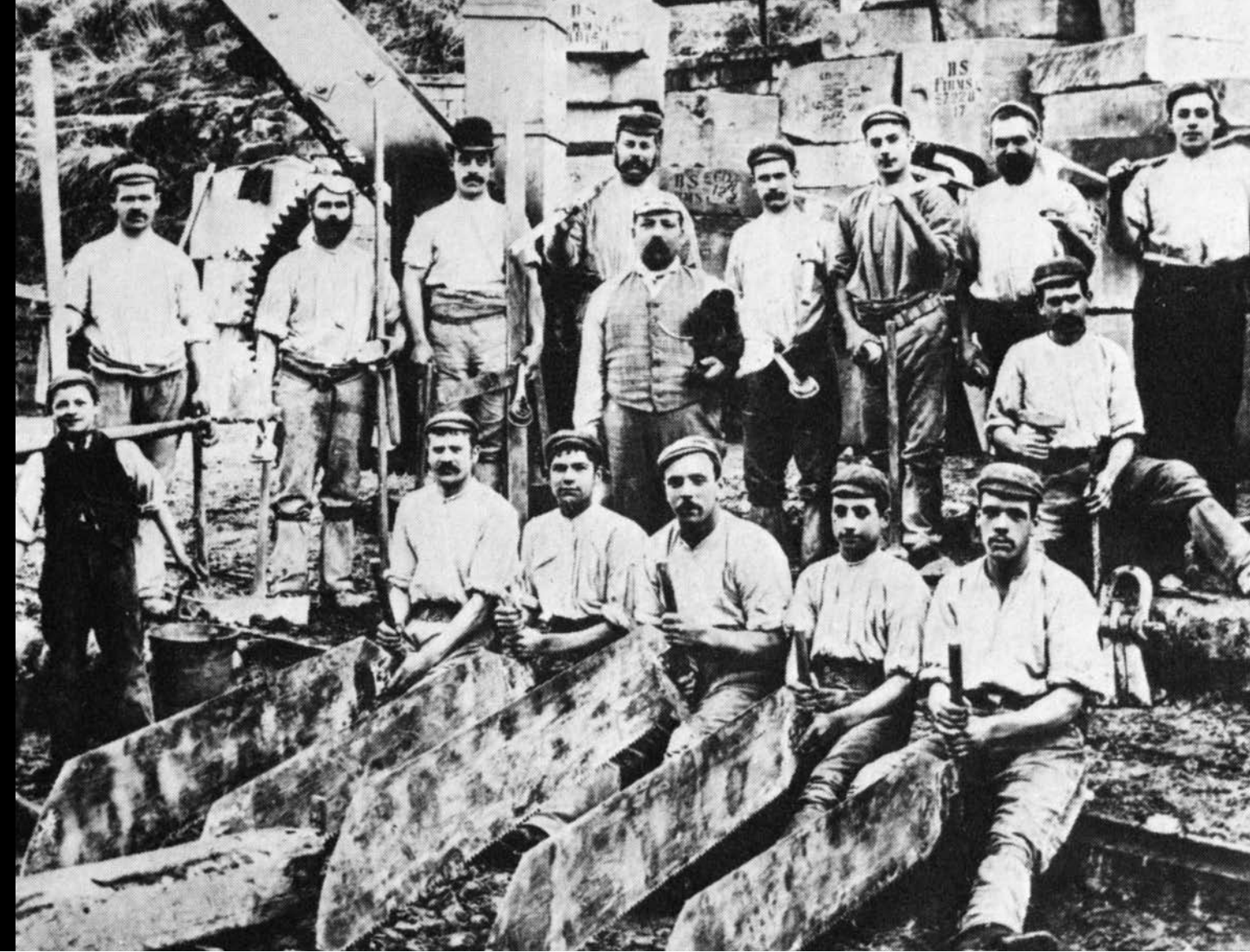
This type of quarry working would have been typical in the late eighteenth and early nineteenth centuries.

Horse drawn haulage circa 1910.



A T Brooks collection, courtesy of The Building of Bath at Work

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A T Brooks collection, courtesy of The Building of Bath at Work

We were soaking wet most of the time, you'd wring your shirt out and put it back on again

Quarryman, 1920s

LIFE UNDERGROUND

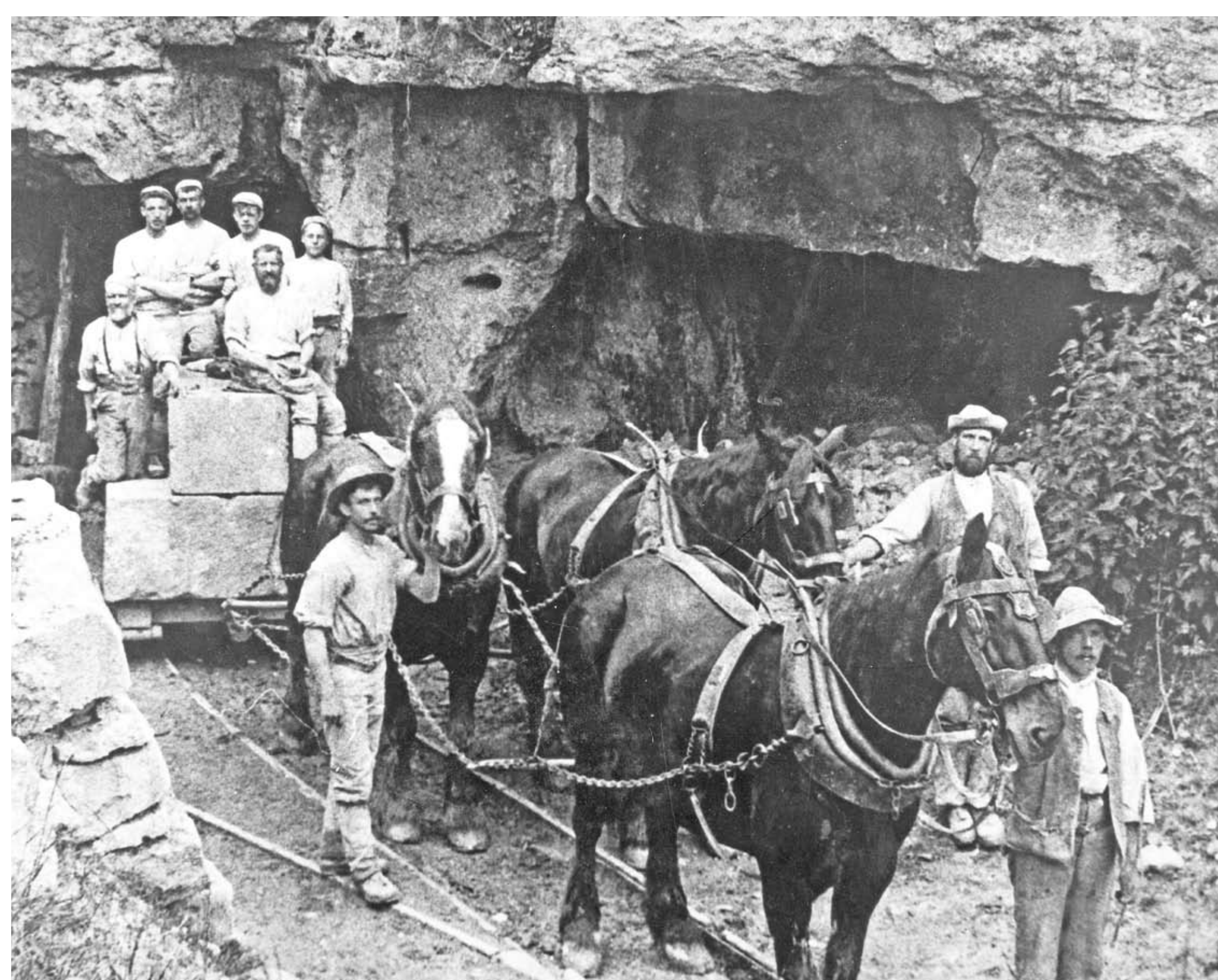
Working underground was heavy work. The stone mines were dark and it was hot, dusty and noisy. Stone was sawed out of the mine in several stages. Firstly the gangman had to select a sound rock face without faults; the pickers then began to free large sections of stone from the stone bed. The stone was then cut with 6ft saws into blocks that could be moved.

A large metal lewis pin was hammered into the stone so that it could then be lifted by crane. These methods continued into the twentieth century. Horses were used in the stone mines until the 1930s.



The cut stone was left in the mine to harden, and moved to the surface in the warmer months so that it would not be damaged by frost.

It was not unusual for a Quarryman to work a seventy-five hour week, especially if a large order came in.

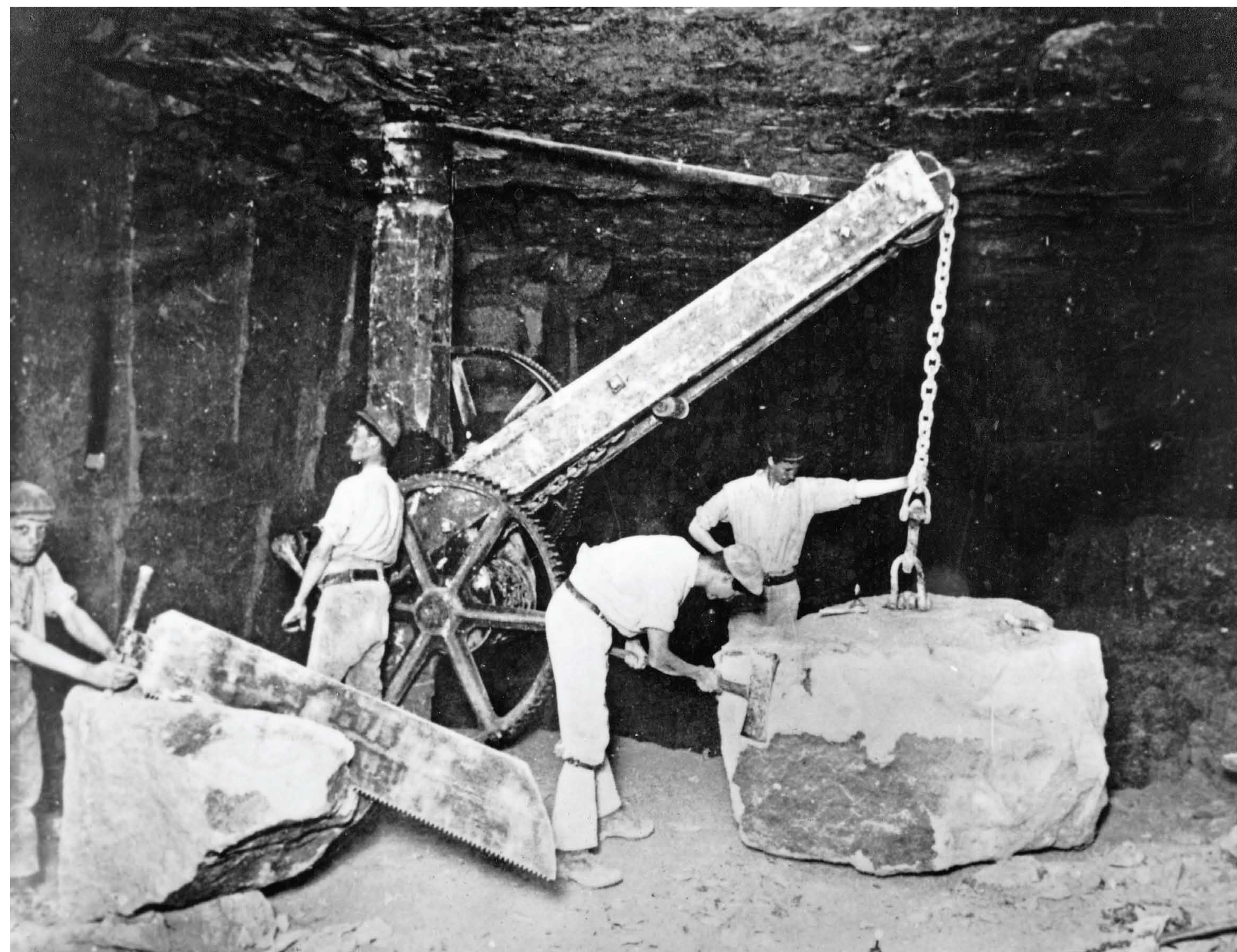


Monks Park mine Corsham circa 1910.



Quarrymen outside a pub in Box circa 1910.

Monks Park mine Corsham circa 1910.



A T Brooks collection, courtesy of The Building of Bath at Work

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© Bath in Time

*The same stone which the builder's refused
is become the headstone in the corner*

The prayer book

SQUARING THE STONE

Stone masonry is as old as civilization. The symbol for a stone mason is the dividers, or a pair of compasses, representing geometry.

In the Middle Ages stone masons were held in high esteem. They designed and drew the buildings as well as shaping the stone to match intricate geometric patterns. The perpendicular structure of Bath Abbey is a good example of the complexity of their work. In contrast the simpler shapes in classical architecture may explain the more contemporary view of the stone mason as a craftsman and builder.

From the seventeenth century, stone masons worked in yards or workshops called lodges besides the quarries. The job of the banker mason was to prepare the stone and cut it to the shapes required. Once the stone was cut and prepared, it was the job of the fixer mason to install the stone in the building.

Stone masonry is embedded into our culture and language. We speak about things being set *in stone* and societies of Free Masons still practice.



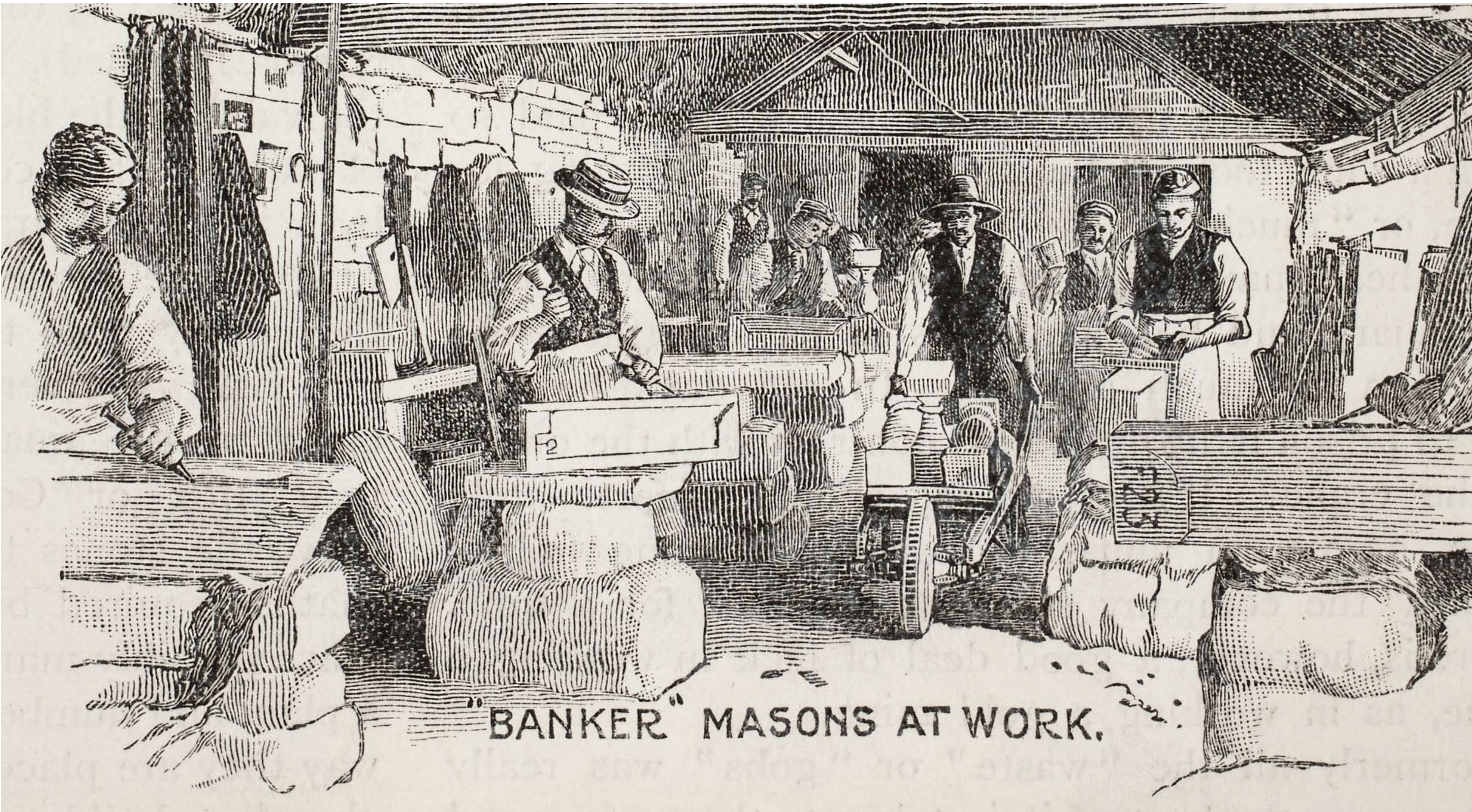
Bibliothèque Ingumbertine, Carpentras, France/ Graudon/ The Bridgeman Art Library

Stonemasons from 'Traite d'Arpentage' Amaud de Villeneuve by Bertrand Boysset (1355-1415).



A T Brooks collection, courtesy of The Building of Bath at Work

Masons Yard Monks Park Corsham circa 1910.



© Bath in Time

Illustration from The Church Monthly Magazine 1902.

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*I could walk into a Mediaeval mason's workshop,
pick up the tools and start work*

Laurence Tindall stonemason

SCULPTORS AND CARVERS

Today, stone mason is a generic term for somebody who works with stone. They may prepare the stone, build with the stone, or carve the stone.

The primary tools and work of the stone mason has not changed much over the years. Stone masons continue to work with dividers, mallet, and chisel. Contemporary masonry practice now includes the use of automated equipment responding directly to computer generated drawings as well as embracing traditional techniques.

Apprentice stone carvers still learn how to carve the traditional patterns which are repeated on classical buildings, such as the acanthus leaf. They also learn to carve lettering which may be used in street names or monuments.

Original pieces, religious statues and gargoyles are designed and made by a stone carver or sculptor. A great deal of the work today is to conserve the historic carvings on our buildings and churches.



Stone masonry students at City of Bath College.



Laurence Tindall and Najit Pitaul work on a statue of King Neptune for the Bermuda Maritime Museum.



Architectural letter cutter Peter McLennan carving a street name.

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Conservation is all about the sensitive management of change

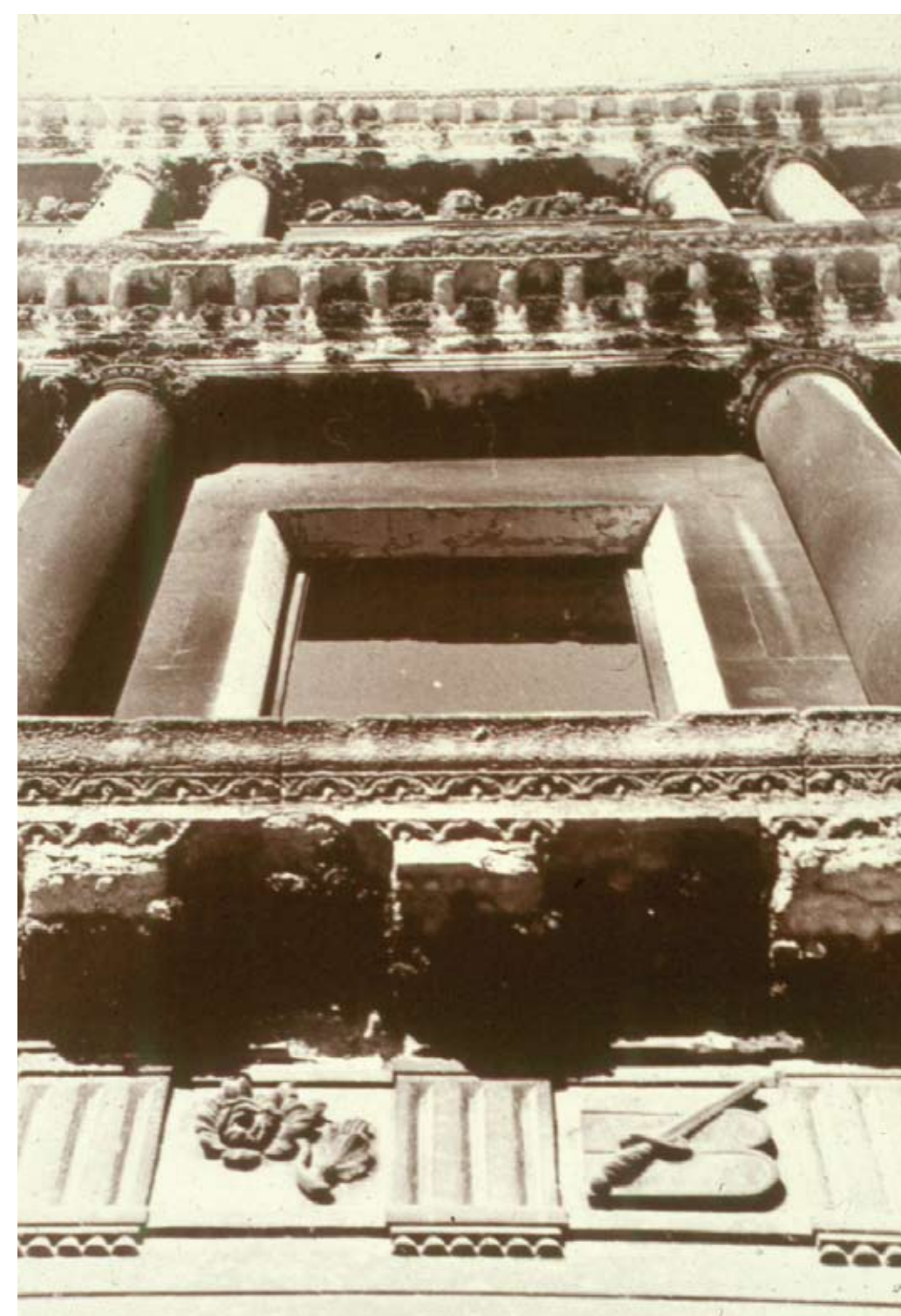
David McLaughlin, conservation architect

CARING FOR BATH STONE

Bath Stone is a natural material. It needs to be able to breathe, to absorb and evaporate moisture.

The decay of the stone is caused by acid rain which contains sulphur dioxide. This reacts with the stone, calcium carbonate, to form calcium sulphate. Calcium sulphate crystals are larger than those of Bath Stone and so rupture the stone. This breakdown is the primary cause of stone decay.

Bath Stone has been a victim of pollution for several hundred years. From coal burning in Georgian Bath to the heavy pollution from traffic today.



Cleaning repair and renewal of Bath Stone in the 1950s and 60s.



Lime-based conservation of Bath Stone in the 1980s and 90s.



BATH STONE NOW

Bath Stone continues to be actively quarried and mined in and near Bath. Contemporary buildings built with Bath stone include Wessex Water's headquarters at Claverton Down and the Thermae Bath Spa.

The entrepreneurs of the past would be delighted to know that the stone continues to be used as a material of worldwide reputation.



Cape Town City Hall South Africa.



Thermae Bath Spa 2006 designed by Nicholas Grimshaw.

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Cleveland Place 2002 (detail) Peter Brown.

The stone is above all what makes Bath unique for me

Peter Brown artist

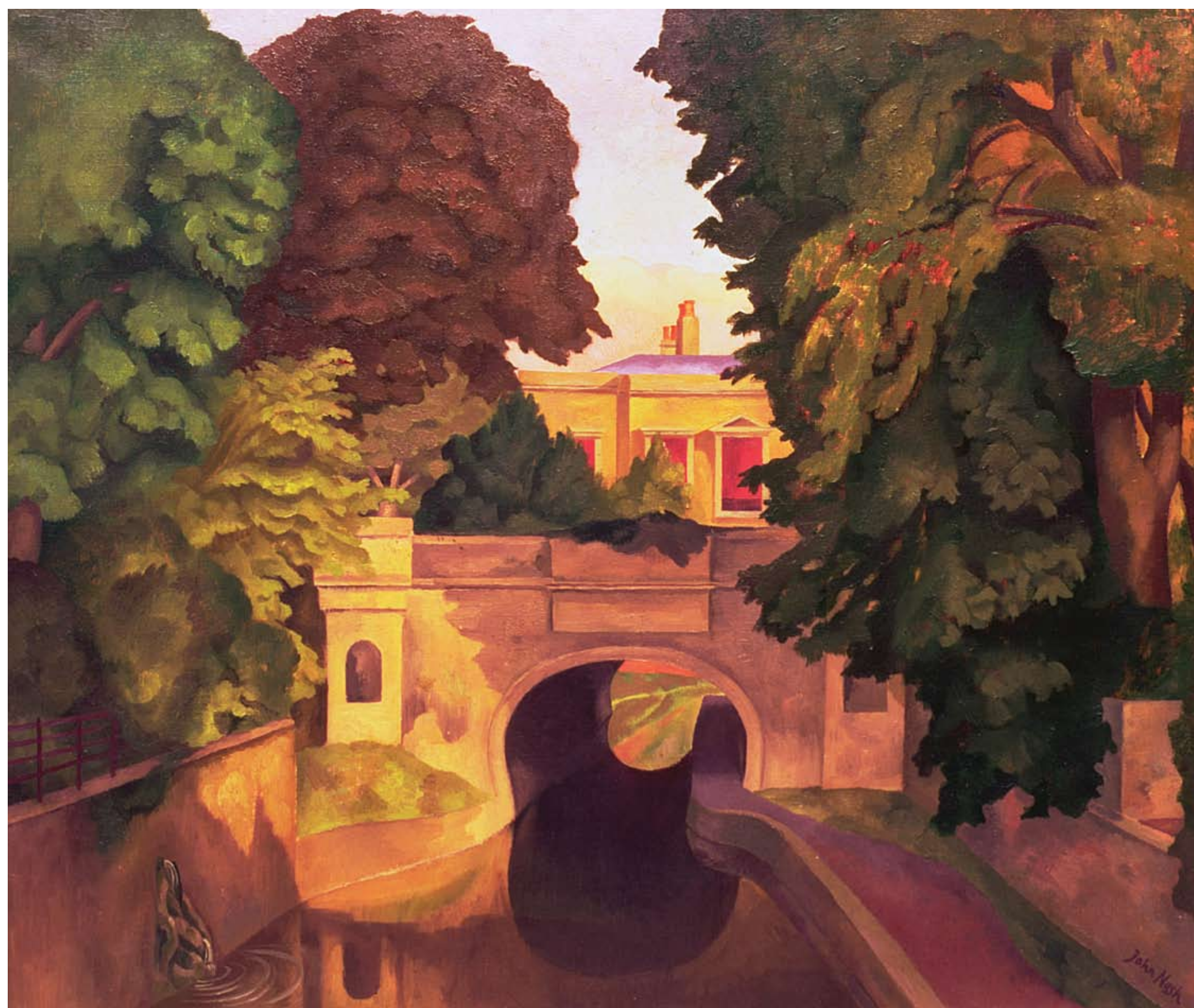
IMAGINING THE CITY

In the eighteenth century Bath was full of artists painting the popular Spa Town and the people who visited. Since then artists such as John Nash and William Turner have worked in the city, and most recently the artist Peter Brown.

The poet and broadcaster John Betjeman made a film about Bath in the 1960s, comparing the Georgian splendour to the architecture of the time, which he didn't much admire. He favoured the late eighteenth century crescents overlooking the city.

Many writers have set their books in Bath, including Jane Austen and Charles Dickens. It is also the perfect location for historical drama on television and film and must be one of the most photographed cities in the world.

The star of the show is Bath Stone, changing according to the light and the season. The Royal Crescent, The Roman Baths, the spire of Bath Abbey against a blue sky, and the gleaming stone as far as eye can see.



Victoria Art Gallery, Bath and North East Somerset Council © The Bridgeman Art Library

The Canal Sydney Gardens Bath (oil on canvas) by John Northcote Nash (1893-1977).



View of the King's Bath by an unknown eighteenth century artist. From a private collection.



© Peter Brown

Gay Street and Circus 1999 (detail) Peter Brown.