stonexus

MAGAZINE

A TRIBUTE TO STONE, STONEWORK & STONE ART

NUMBER XIV

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FRONT COVER:
The Vespasian Gate, *Antalya, Turkey.*
photo: Laszlo Szirtesi.

INSIDE FRONT COVER:
Muž práce *(Stoneworker) by Ladislav Šaloun*
(1908) town of Horice, Czech Republic.
photo: Lysippos, via Wikipedia Commons.

below: Stonework and photos by David F. Wilson.

IN THIS ISSUE:

FEATURES

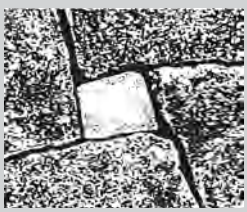
BACK COVER: Outdoor classroom under construction for an elementary school in Donabate. County Dublin, Ireland. Design, stonework (and photo) by Sunny Wieler with the assistance of Tom Pollard. See www.stoneart.ie.

INSIDE BACK COVER: Poster for STONEWORK SYMPOSIUM XIV.

stone (ston) n.
1. a. Concreted earthy or mineral matter; rock.
   b. Such concreted matter of a particular type. Often used in combination.
2. A small piece of rock.
3. Rock or piece of rock shaped or finished for a particular purpose, especially a piece of rock that is used in construction.

nex-us (nek' sas) n., pl. nexi or nex-us-es.
1. A means of connection; a link or tie.
2. A connected series or group.
3. The core or center.

mag-a-zine (mag-úh-zeen), n.
1. A periodical containing a collection of articles, stories, pictures, or other features



Editorial. . .

STONEXUS XIV is (finally) here.

Just before the curtain closes on 2015.

It hasn't been easy to get this issue together—the Stone Foundation's transformation into a 501c3 non-profit corporation combined with the upcoming Symposium have been more than a little distracting.

Nevertheless, it's a good issue, we think, and thanks are due to several Stone Foundation members for its varied content:

—to Sean Adcock for the photos taken on his trip to the southern coast of Turkey which inspired the article about Pamphylia.

—to Bobby Watt for providing information about the huge restoration project he's directing in Ottawa. And to Colleen Wilson, one of the carvers on that project, for her excellent worksite photos.

—to Doug Bell with whom I worked on the very interesting story of the underwater mason who saved Winchester Cathedral.

—and Marc Archambault for sharing the story and photos of the marvelous cabin he and his friends built high in the Blue Ridge Mountains.

—and David F. Wilson for sharing his story, providing photos and patiently answering questions about his creative and finally crafted public art projects.

—thanks too to Sunny Wieler for that dramatic photo of one of his stone projects on the back cover.

Laurie Olin who wrote *From SUZHOU to MALIBU* isn't a Stone Foundation member (yet) but Craig Campbell is—it was he who recommended the article and contacted Laurie for permission to reprint it.

. . . . . .

Non-profit status for the Stone Foundation required a certain degree of separation from the publisher of STONEXUS Magazine and STONEZINE.

Stone Foundation members, however, will continue to receive both publications as membership benefits—and submissions by Stone Foundation members will continue to be the principal source of material for STONEXUS and STONEZINE. Send 'stuff' to tomas@stonexusproductions.com.

One result of the new relationship between the Stone Foundation and the magazine has been diminished income for its editor, me. This means that travel, which has been the source of some of the best material in previous magazines is no longer possible without donations from readers.

Fortunately, due to the association of STONEXUS with Fractured Atlas, a non-profit fiscal sponsor, such donations are tax-deductible. They can be made via the sponsor's website (google: stonexus/fractured atlas). Or with a check made out in any amount to Fractured Atlas (with STONEXUS in the memo line) and sent to 116 Lovato Lane, Santa Fe, NM 87505.

Keep well and keep up the good work,

Tomas

Tomas LIpps, editor, etcetera

left: 'Mug-shots' of the colossal Aztec stone serpent's head in the Museo Nacional de Antropología *in Mexico City. Evidently one side is a work in progress. Interrupted, perhaps, by the Spanish incursion? It is a magnificent example of the stone carving skills of the Aztec artisans.*

photos: T L

THE MUSIC OF THE SPHERES

STONE WALLING . . . the Nature of the Beast

Since humans first began placing one rock upon two others to create a structure they have been at the mercy of the material available to them. Stone by its very nature is irregular, a random substance. The final aesthetic beauty of a stone structure depends on the physical effort, mental acuity, sensibility and skill required to transform a heap of raw material into a formal entity.

Stone—difficult to collect and move about, available only in awkward shapes and sizes, riddled with imperfections, dirty and dusty, requiring discipline and application to assemble—is not the perfect building medium. It isn't difficult to imagine the frustration caused through the ages by stone not being what the stonemason would desire. Dealing with the inherent characteristics of stone is what the waller/mason does; we all prefer good stone to 'bad' stone but must work with whatever we have.

For those who don't work with stone on a daily basis it may be difficult to understand the sheer pleasure of bringing order to a random pile of it—form from chaos.

Stonework is a fundamentally positive creative action: every additional stone set correctly is a source of satisfaction. There is democracy and harmony in articulating the pile of stone at hand—every stone has potential and a place within the whole. What a joy it is when that ugly duckling of a stone is placed and becomes the perfect partner for those around it.

As a stoneworker's skills develop, the accuracy and quality of his or her stonework improves. In Scotland, however, particularly for wallers, this only comes after many long, long hours between the stone pile and the wall, often in terrible working conditions. To stick at it takes character, will, dedication and, perhaps, financial desperation.

Malcolm Gladwell in his book *OUTLIERS* theorizes that it takes 10,000 hours to achieve mastery of a certain discipline. According to Danish physicist Niels Bohr an expert is "a person who has made all the mistakes which can be made, in a narrow field.'

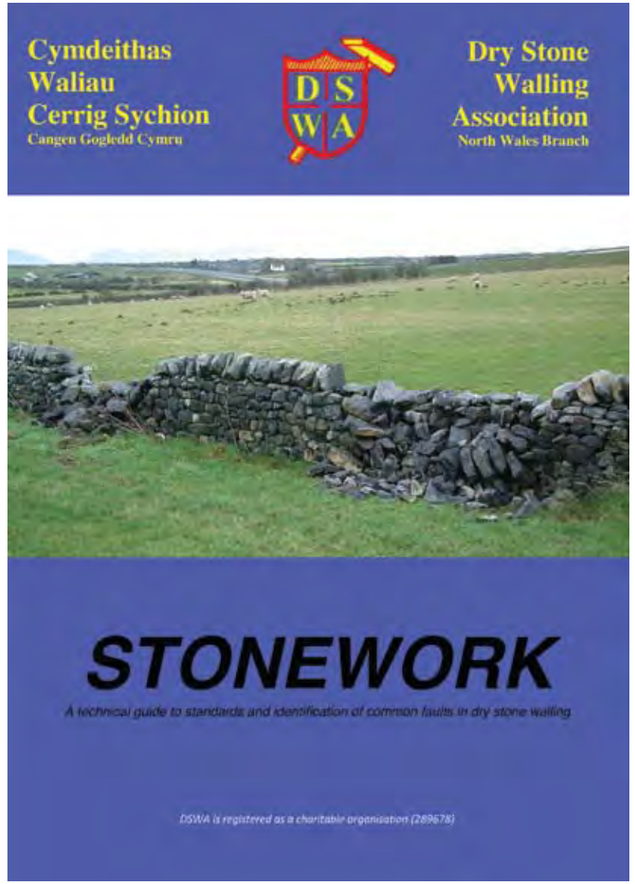
These concepts apply to anyone trying to gain a degree of competency in working with stone—it will take a long time and you will make many mistakes along the way. I make no claims to being either a master, but from personal experience I can vouch for the truth in both these statements.

My work straddles two distinct fields of endeavor—craft and art. Craft tends to celebrate technique within a recognised and traditional set of parameters, whereas contemporary art places more emphasis upon freedom of expression and a deconstruction of perceived traditions

When I naively stumbled into stonework, stone to me was just another medium that I could use as an artist to fulfil my vision, I had neither great knowledge of technique or a historical understanding of the craft. As my skills and experience have increased the craft has become more and more important to me—I want my work to be well constructed with regard to traditional standards.This has affected my approach over the years and what I created in the past I might not create today.

Projects are always approached with artistic intent. I never set out to build 'just' a wall (many could do this as well or better than myself), I always wonder what I can creatively make or do for the project? That is my task as I see it. In any field of endeavour there is a wide spectrum of adherents, from conservative traditionalists atone extreme to out-and-out mavericks on the other. This leads to lively debate, so too with stonework. In the craft-art continuum, my work tends towards the decorative but my aim is always to respect the craft. ■

David F. Wilson



or: How NOT To Build a Dry Stone Wall

reviewed by John Shaw-RImmington

STONEWORK, Sean Adcock's well-written, well-documented booklet, is unofficially referred to in walling circles as the *How NOT to Build a Dry Stone Wall* book because it teaches more by examining faulty dry stone work than by giving the typical textbook diagrams and photos of acceptable work. The book is crammed with many clear, good quality color photos of things to be avoided. The author has gone out of his way to do thorough field research in order to come up with some of the best of the worst examples of stonework ever compiled. (It must be said that he includes photos of good work for comparison.)

These examples are analyzed and their problems pinpointed. Unorthodoxy due to regional differences in style (which may vary dramatically) or unconventional work that exists outside the scope of an overbearing reliance on standardization, or the occasional compromises made (which the waller in question has recognized and cleverly compensated for) is treated objectively and fairly.

Sean also takes into account the various limitations placed upon a waller due to the nature of the material available to him or her, but he still comes up with a litany of things that 'just don't work' in any dry stone wall application.

In his quest to help readers see what can go wrong if they don't avoid certain graphically illustrated problems, Sean tactfully (certainly more tactful than he would be in person) describes a variety of manifestations of questionable workmanship.

A waller who reads this book is likely to improve his or her game, not just from absorbing the in-depth descriptions of how stones are best built into walls—but by resolving not to do work that would be frowned upon for any structural reason (frowned upon by peers or even worse by Sean). Advised of potential errors, wallers will see to it that their walls will never be of such poor quality as to merit display in a book like this and be identified as 'inappropriate,' or 'unacceptable,' or 'ridiculous,' or 'far from ideal'—or worse. ■

This valuable primer is free! It is available in PDF format at http://www.dry-stone.co.uk/Pages/Header.html (click on 'BOOKS' then on the cover shown above).
A supplement to the book is available there as well. It consists of photos of various aspects of sub-standard walling sent to Sean from other wallers.
A print copy can be ordered from the author: Sean Adcock, 2 Bryn Eithin, Waen, Penisarwaun, Caernarfon, Gwynedd, Wales. UK.
Sean requests only £2 for postage and printing costs; I suggest sending him a US or Canadian ten dollar bill and a note of thanks.

PAMPHYLIA

by Tomas Lipps

The Province of Pamphylia

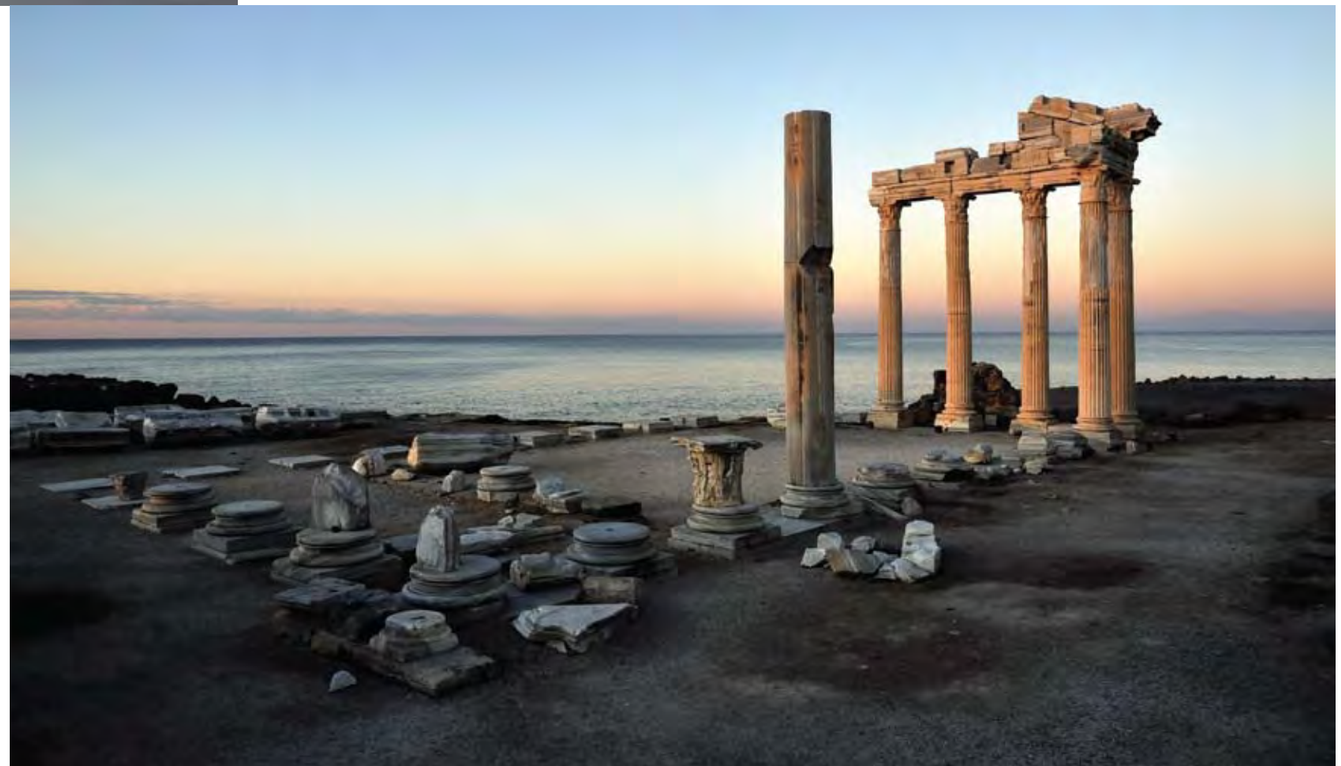
is a swath of terrain arching around the Gulf of Antalya, a fertile indentation in the mountainous southern coastline of Turkey. Bounded on the north by the Taurus Mountains and bracketed on the west and east by rugged foothills, it is 130 kilometers (80 miles) long and roughly 32 kilometers (20 miles) wide.

Pamphylia, Pisidia to the north and Lycia, another province along the coast to the west were, despite distinctions of character in culture and terrain, regarded as a single region, Cilicia (or Kilikia*).

The name Pamphylia is an ancient Greek word for "land of all tribes" and over time its varied inhabitants were the subjects of a succession of powerful cultures, empires and overlords, beginning with the Hittite Empire. Following the Trojan War, Greek colonists settled in the area. It was for a time ruled by the Lydian kings until taken over by the Persian Empire (Cyrus the Great pushing west), the Greeks (Hellenic this time), the Persians again, Macedonians (Alexander the Great pushing east), then more Greeks, succeeded by two more Macedonian dynasties, the Ptolemies and the Seleucids.

Following its annexation by Rome early in the 2nd Century BC and later through the Pax Romana, the region and its constituent *poleis* or city/states—Side and Perga, Antalya, Sillyon and Aspendos—flourished economically and culturally. The most significant archaeological sites extant today, the ones pictured on these pages, are from this period.

Then came the Byzantines, the Arabs, the Crusaders, the Seljuks, the Mongols, the Ottomans and lastly the Turks, the archaeologists and the tourists.



above: The monumental Vespasian Gate, Side (pronounced see-day), Antalya, Turkey, presumably erected during the emperor's reign (69-79 AD). To the left of the gate in the photo is a fountain also dedicated to the emperor. The defensive infill might have helped the arch to survive the earthquakes to which the region is subject.

above right: Map of Asia Minor showing the boundaries of districts in Roman times.

right: The ruins of the Temple of Apollo at Side at dawn, Antalya, Turkey.

**A phonetic footnote: the letter 'C's in Cilicia and Lycia are deceptive, like the 'C' in Celt which is pronounced Kelt. Ancient Hittites, Greeks and Persians pronounced it with a hard 'C' as do contemporary Turks—Kilikya and Likya.*

TERMESSOS was one of very few towns that Alexander the Great was unable (or unwilling to attempt) to conquer. He sought passage through Termessos territory to the Anatolian Plateau in 333 BC but the obstinate highlanders in their eminently defensible 'eagle's nest' (his description) defied him so he chose another route.

The Romans wisely bestowed upon the city the freedom and rights of a Roman ally. Termessos minted its own currency, coins with the profile of Solymeus rather than the Roman Emperor and the legend: AVTONOMWN—autonomous.

Obviously they cherished their status as Roman citizens and adapted Roman modes of living but something of their own character is expressed in the architectural fragments which remain as the only physical clues to it. These suggest an austerity that may have been essential for survival in an unstable region. There is little ornamental carving and what is to be seen is remarkably simple, unlike the lavish treatment on display in the city-states of the foothills, plain and coast.

Termessos might have endured until the present day, but one of a series of earthquakes that shook the region also removed the city's source of water.

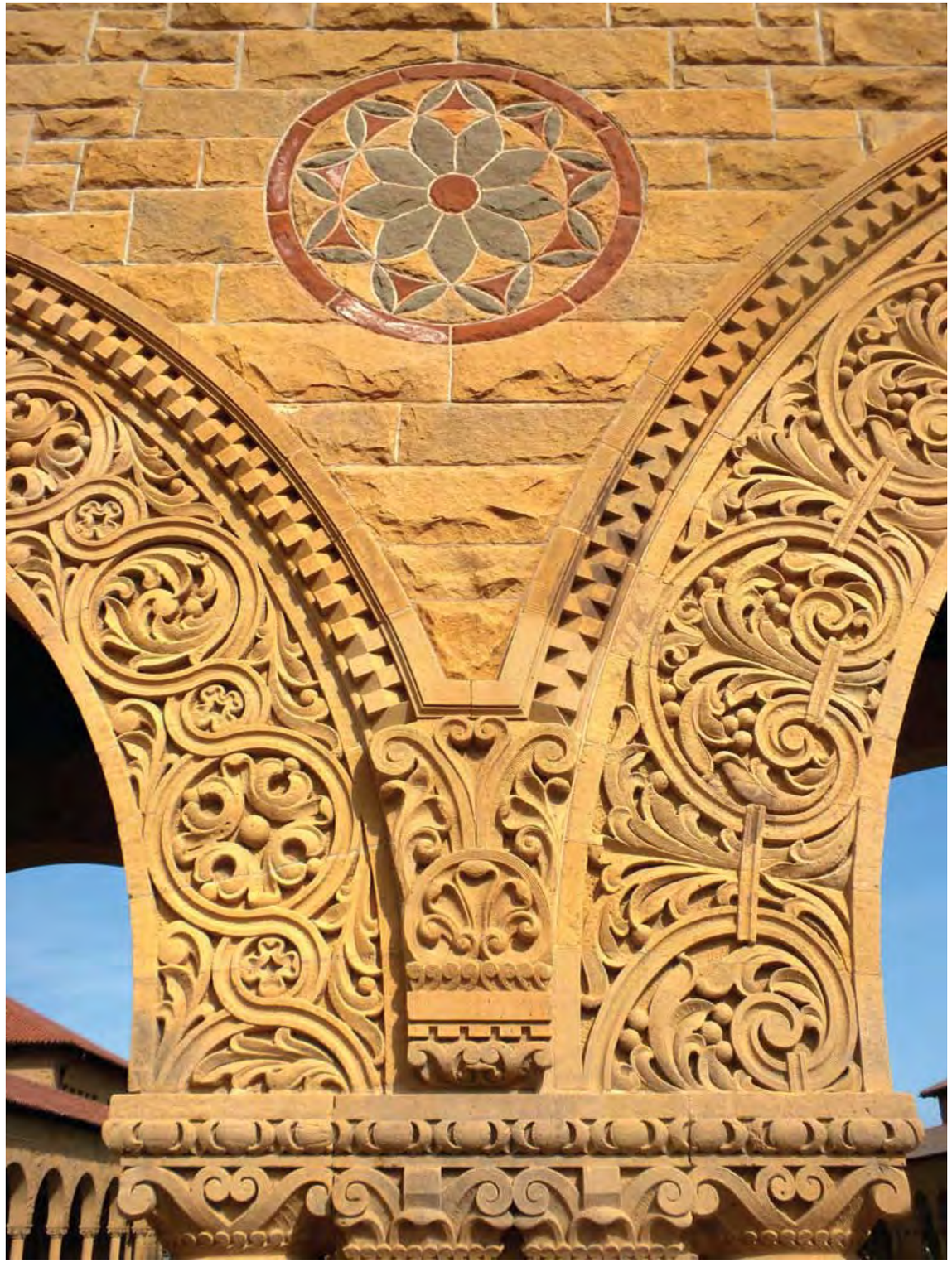
Conjecture has it that the city perished because the aqueduct was demolished (as it indeed was) but one imagines that the resourceful Termessanos, given their demonstrated skills and temperament, would have simply rebuilt it . . .unless the source had been diverted and there was no water for it to convey. Anyway, with no water and its infrastructure in ruin, Termessos was abandoned and, its human 'glue' gone, it surrendered to Time. And Time has rendered it much as we see it today—its disarray undisturbed by archeological excavation and resurrection. Termessos is an elegant corpse.

above: Portal, temple of Artemis.

left: The Greek/Roman theater, detail.

above right: Woven walling, illustrated. The Termassanos were disciplined masons.

bottom right: The ruin of the gymnasium, one of the more complete structures standing at Termessos.



a BIOGRAPHY of STANFORD SANDSTONE

from the GREYSTONE QUARRY to STONE RIVER

by Charles Junkerman

THE AQUA-MASON

WILLIAM WALKER, Stalwart Diver, Underwater Mason & the Saviour of Winchester Cathedral

by Doug E. Bell and Tomas Lipps

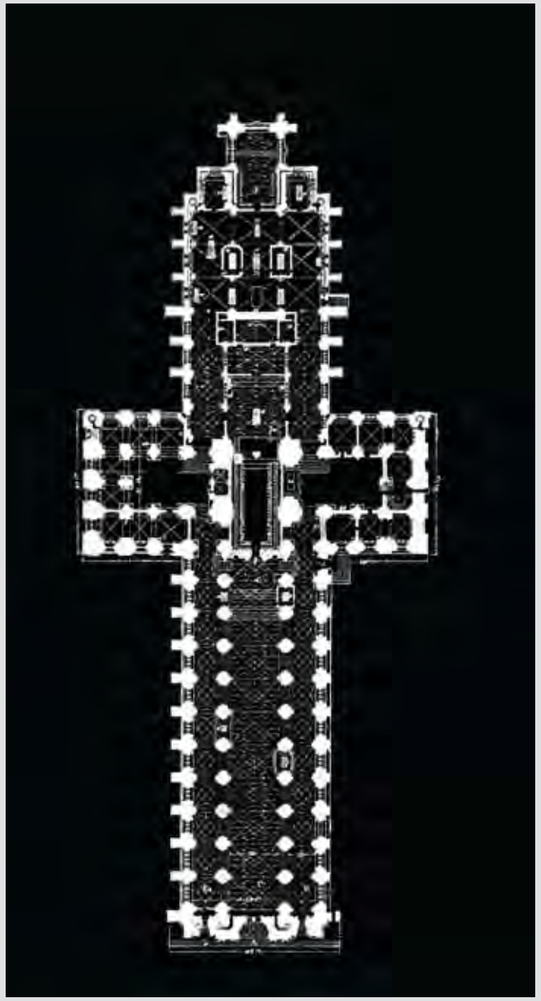
A long time ago, before England was England. . .

One thousand, three hundred and sixty-seven years ago to be precise, in 648 the West Saxons in the kingdom of Wessex undertook to build a church in the town then known as *Wintancaester* near the south-central coast of Britain.

Wintancaester, later Winchester, is located in the valley of the River Itchen.

The Itchen valley has peaty soil and a very high underlying water table.

And therein lies a tale. . . .



The church the Saxons built,

the *Old Minster*, was a fair-sized ecclesiastical structure by the standards of the day, and it served its purpose adequately for more than three centuries. . .until a group of newcomers decided to replace it with a much, much bigger church.

These newcomers were the Normans—Norsemen, who for a hundred years or so had occupied northern France and adapted the French language and French customs. During this time they had been exposed to a somewhat recent trend in religious expressionism—the construction of massive stone and glass churches known as 'cathedrals.' Ostensibly raised in tribute to a heavenly God, these buildings served more realistically as a magnificent reminder to dirt-bound mortals of the elevated station of His middle-management team down here. There was an added element of civic competition, as each building tried to out-soar and out-mass its ecclesiastical rivals in neighboring regions.

In 1066 the Normans crossed the Channel, invaded what was now England, defeated its army and killed its king. Within a half-dozen years they were well established and had begun building stone castles, churches, cathedrals and monasteries in a new style of construction: Norman architecture.

So it came to pass that in 1079, on land adjoining the Saxon Old Minster church, Norman masons under the supervision of a Norman bishop began construction on what we know today as Winchester Cathedral.

The original Norman Romanesque morphed into the trinity of Gothic cathedral architecture—pointed arches, intertwined ribs supporting vaulted indoor ceilings, and exterior flying buttresses. Over time an elegant, solid and truly gigantic building was crafted. When the dust finally settled some three centuries later and the holy house was consecrated, it must be said that the 'soaring' and the 'massive' aspects had been achieved.

Consider, in modern terms, the proportions of what they accomplished: at the highest point, Winchester Cathedral is tall enough to house the Statue of Liberty and impressively longer than a professional soccer pitch—212 feet longer.

As for mass, it is estimated at between 80,000 and 100,000 tons. Three quarries on the Isle of Wight were played out before enough stone had been supplied for this one building. Enormous is one word for Winchester Cathedral's mass but there is another that is appropriate: problematic.

The first recorded instance of a serious problem came in the year 1107, when the cathedral's central crossing tower collapsed. This was blamed by some on the fact that King William II, a man 'addicted to every kind of vice,' was interred beneath it in 1100. A more insightful chronicler of the era, however, William of Malmsbury, ignored such explanations and correctly assigned blame for the tower's collapse on faulty workmanship and unsound foundations.

There is evidence that the Norman masons were aware of the problem of the foundation's subsidence even as it was being built—courses of tapering stones were laid then to bring the masonry back to level.

Symptoms of a larger underlying problem persisted for several centuries, including multiple large cracks opening in the masonry and an occasional random falling stone. But it would take another 800 years for the crisis to reach a true breaking point.

John Hardacre, a contemporary curator of the cathedral, told a BBC documentary crew, *"They cannot but have noticed that the whole building was listing down to the southeast. I suppose it was a case of ignoring it and hoping it would go away."*

Early in the 1900s cracks in the building had widened to the point where animals were literally setting up home inside of them—including but not limited to owls, martens, rats and swarms of bees. Several of the cathedral's 120-foot high walls were bulging out by as much as four feet, and the south transept was tilting at an angle more than half that of Pisa's famous Leaning Tower.

William Furneaux, Dean of Winchester Cathedral from 1903 to 1919, knew the problem could no longer be ignored when he witnessed a five-year-old child at play hiding in one of the building's larger cracks. He decided it was time for some serious work to be done on the cathedral.

"The great builder-bishops who created this cathedral over 1000 years ago, they hadn't the skills or machinery that we take for granted now, but they did have faith," Furneaux told a London newspaper. *"With such faith, they were able to build such a place as this, in defiance almost of the basic laws of physics. . . . Now we have the skills, the machines. Such machines that would have made them marvel. But do we have the faith? And the vision? Or at least the will to save it? I think we do."*

After consulting with the pre-eminent English architectural and engineering firms of the day, good Dean Furneaux reached the unavoidable conclusion that many portions of Winchester Cathedral were on the verge of irreparable collapse. Simply put, his beloved 'Medieval Masterpiece' was in danger of being lost forever. So Furneaux decided to make it his mission to save Winchester Cathedral. Faith, vision and will were all abundantly present but the money to put the skills and machines into action seemed to be in short supply.

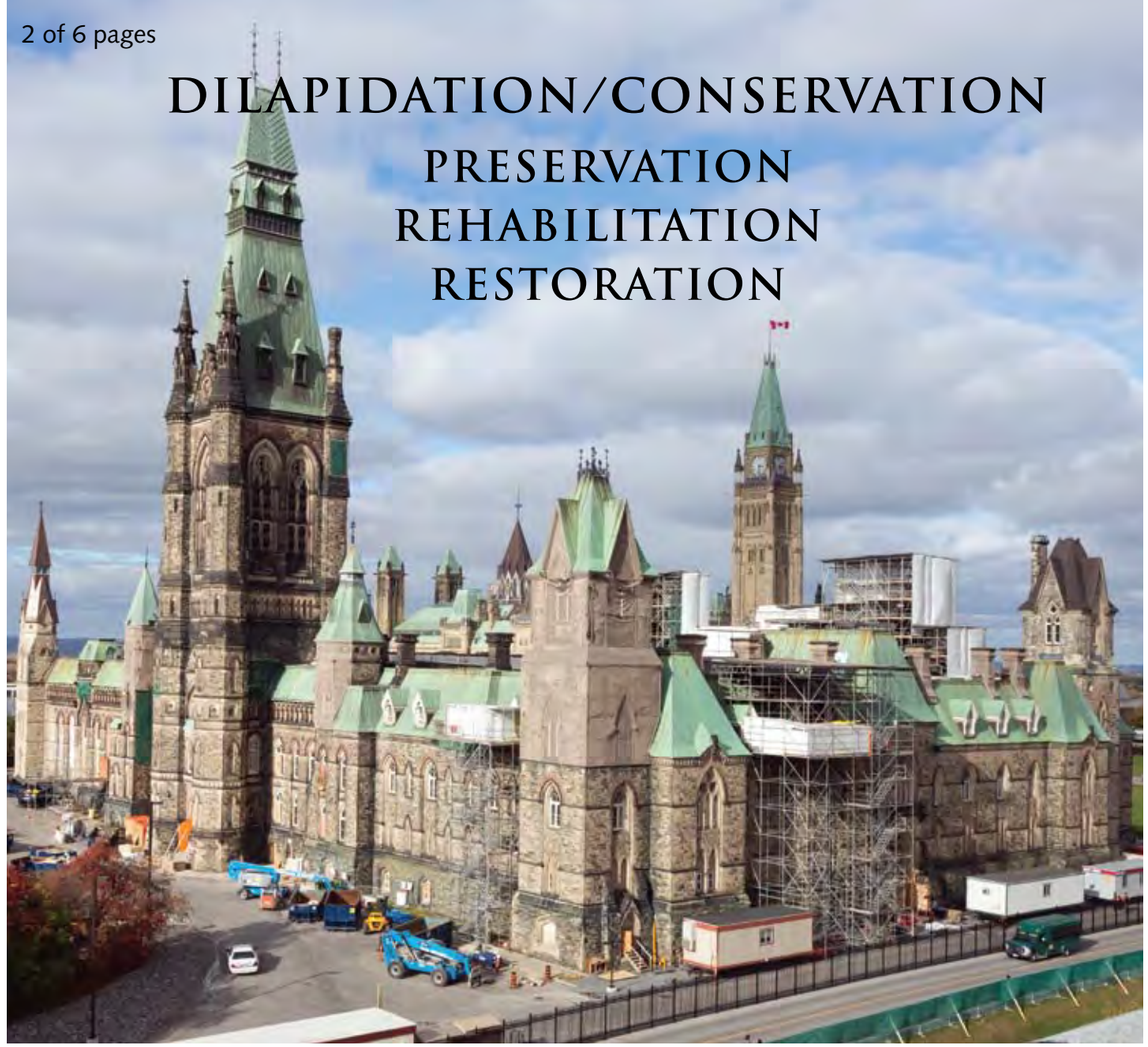
Though the church did not yet have the money to pay for the whole project, he called in an architect, Thomas Jackson, and a civil engineer, Francis Fox, and told them to begin immediately. Work got underway as Furneaux launched an unprecedented nationwide fundraising campaign to pay for the extensive and expensive repairs. First, the building was shored up with temporary scaffold-style bracing of large wooden timbers—earning it the nickname 'the cathedral on crutches.'

Next, resident wildlife was evicted from the larger cracks in the masonry and those cracks bridged with mortared tie-stones. Grout was then pumped into the voids using hi-tech equipment for its time—the Greathead Grouting Machine. Tie-rods were designed, but drilling the holes to receive them was stopped soon after it began when a stone fell from the vault. Presumably it was thought that consolidating the masonry in this way would prevent the walls from collapsing when they were undermined.

And then the digging began. . . .

Dr. John Crook, speaking to a film-school documentary crew in his role as Winchester Cathedral's official archaeologist, describes what happened next: *"The idea was simply to dig trenches in order to achieve the underpinning. . .they go down through the topsoil, they go down through the subsoil and they eventually reach the bottom of the old cathedral foundations, the 13th century footings, and then they can start tunneling underneath the walls themselves. And the walls don't collapse because it's not a very wide gap and the masonry will hold itself up. They carry on going down and they get to peat! And we're now talking about probably four or five metres below the surface on which we're standing here. Then they break through the peat layer. . .and lo and behold the water underneath, within the gravel, comes surging up (due to) artesian pressure and fills up the drift, or trench, very rapidly above their heads."*

DILAPIDATION/CONSERVATION
PRESERVATION
REHABILITATION
RESTORATION



by Tomas Lipps

THE PARTHENON, DRESDEN'S FRAUENKIRCHE, ANGKOR WAT, BOROBODUR —AND PARLIAMENT HILL, OTTAWA—ARE MASSIVE REHABILITATION PROJECTS THAT HAVE INVOLVED MILLIONS OF MAN-HOURS AND THOUSANDS OF TONS OF STONE.

The West Block is one of the three Parliament Hill buildings that are part of a national historic site, along with the East Block and Centre Block. The West Block was designed by Thomas Stent and Augustus Laver in 1859 and was officially opened in 1866. It has an elegant exterior in the Gothic Revival style. Two additions were later constructed, in the same style, in response to continuing demands for additional government office space for a growing democracy. The Mackenzie Wing and Tower were completed in 1878 and the Laurier Tower and Link were completed in 1906.

Major renovations to the interior and exterior of the building were completed in 1965.

In 2002, an extensive $1 billion renovation project began across the parliamentary precinct specifically focusing on masonry restoration, asbestos removal, vehicle screening, parking, electrical and mechanical systems and improved visitors' facilities.

The Library of Parliament and Peace Tower, as well as some exterior areas of masonry on the Centre Block have so far been completed, though focus has shifted to the West Block. The building is in critical need of rehabilitation due to the extent of its deterioration. Its rehabilitation is an important step in the Long Term Vision and Plan (LTVP) for the Parliamentary Precinct and is one of the major projects now being carried out on Parliament Hill.

The rehabilitation of the West Block will provide the required space so that the Centre Block can be emptied and rehabilitated in the coming years. The budget for the entire project is $3,000,000,000.

from: Public Works and Government Services Canada
http://www.tpsgc-pwgsc.gc.ca

ARCHITECTURAL CONSERVATION, TREATMENTS FOR HISTORIC STRUCTURES

As the Architectural Conservation movement evolved throughout Europe and the Americas in the 19th and 20th centuries, two schools of thought coalesced:

PRESERVATION, which *"places a high premium on the retention of all historic fabric through conservation, maintenance and repair."*

REHABILITATION, which *"emphasizes the retention and repair of historic materials, but more latitude is provided for replacement because it is assumed the property is more deteriorated prior to work."*

In other words, Fidelity and Flexibility.

In Canada today the authorized treatments for historic structures are *PRESERVATION*, *REHABILITATION* and *RESTORATION*.

RESTORATION *"focuses on the retention of materials from the most significant time in a property's history, while permitting the removal of materials from other periods."* *

"Do enough, but not too much."

"To the casual observer the purpose and theory behind the restoration of stone buildings must appear to be simple: repair damaged stone where possible, replace where necessary.

Many threads, however, must be brought together before the process can begin. Structural integrity and public safety are paramount. Cost and practicability can dictate procedures. Artistic faithfulness to the existing structure and the original work can conflict with the new technological procedures and possibilities. On the job these sometimes conflicting ideas must be sorted out on a practical level. Often different points of view can be presented by stonemasons and conservators." **

Stonemason Bobby Watt and conservator David Edgar find agreement in the precepts of English author and lecturer John Ashurst (*Practical Building Conservation).* For instance:

"The decision to replace a stone depends on whether it might or might not survive until the next scaffolding program. The estimated life of such stones must depend on the architect and his masons who should use their knowledge (collectively) *to balance their concern for the building with the need to preserve as much of the original fabric as possible."*

Their accord is crucial because Bobby is the president of RJW/Gem-Campbell, the project contractors, as well as the West Block Restoration Project Manager—and David is the firm's Chief Conservator.

But he is not the only conservator involved. The architect has conservators, the general contractor has conservators. Conferences that take place with the architects, engineers, conservators, general contractors, masonry contractors in attendance, while generally harmonious, can become acrimonious—when the budget occupies the agenda, for instance. Evidently not everyone agrees with Bobby's view that cost should not drive best practices—particularly when, he avers, it concerns the well-being of the buildings that house the Canadian Parliament.

Bobby much prefers the Tuesday morning meetings with his crew of stoneworkers, the 'chalk-talks' where they discuss particular problems a stonemason is likely to encounter and how to resolve them, simple truths that make a stonemason's life easier.

And he has a wealth of stories, like the old masons' trick he used to set a 30,000 pound granite sculpture in Madison Square Park in New York City, using blocks of ice to support it, removing the slings and guiding it precisely into place as the ice melted.

Bobby has long envied the cathedral builders of the past for their gifts to the future and welcomes the opportunity to leave one of his own, thanks to this immense project. But more than the personal satisfaction that brings him, he is gratified to be able to provide an opportunity for young men and women to take up the craft.

Over two hundred stonemasons, conservators, restoration masons and mason tenders (including over 60 apprentices, 18 of whom were women) were employed at the busiest time. The West Block has been a training ground for the stone trade; bricklayers have morphed into stonemasons and young apprentices have become journeymen in the last three years.

And a new crop of potential stonemasons may result from this project. There's a sizable group of kids called the 'Wall 7 babies' because they were conceived during the first months of the project, at a time when their fathers, with years of work ahead of them, were involved in that part of the job.

*Secretary of Interior's Standards for the Treatment of Historic Properties. *U.S. National Park Service.*

***From the video* STONEHANDS, Episode VII, The Golden Stain of Time.

The cabin foundation ready for walls; note protruding stones that will key into the walls.

The arch on the cabin face in process.
The wall is two feet thick here.

Rear view showing chimney and the first rafters.
There are three windows one each side with large granite lintels.

The Rumford fireplace.

Half a stone cabin. You can see the batter of the walls in the guides we built. The side walls are battered, three feet at the base, two feet at the top.

Using the gin-pole to set the lintels.