Saqqara Before

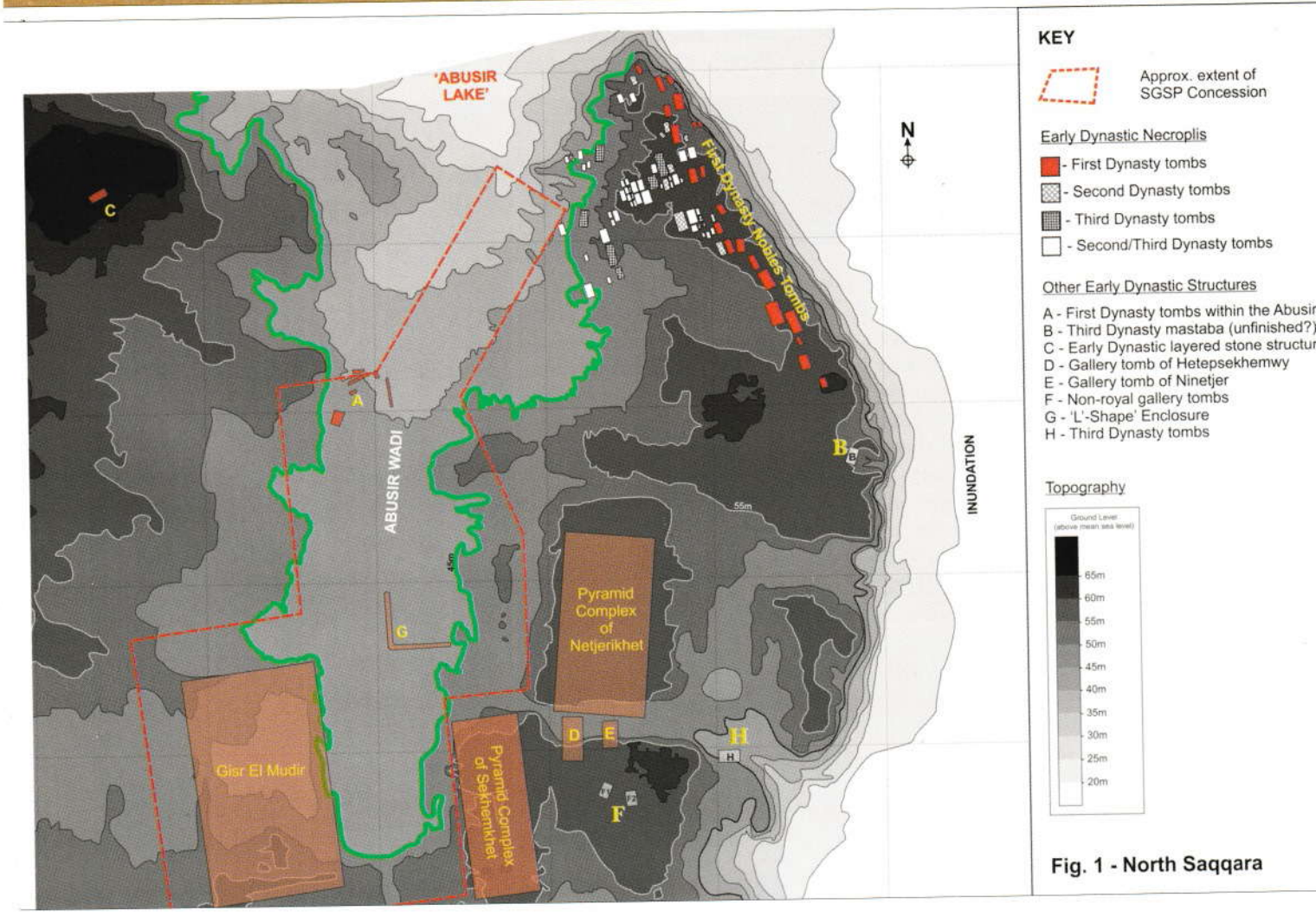
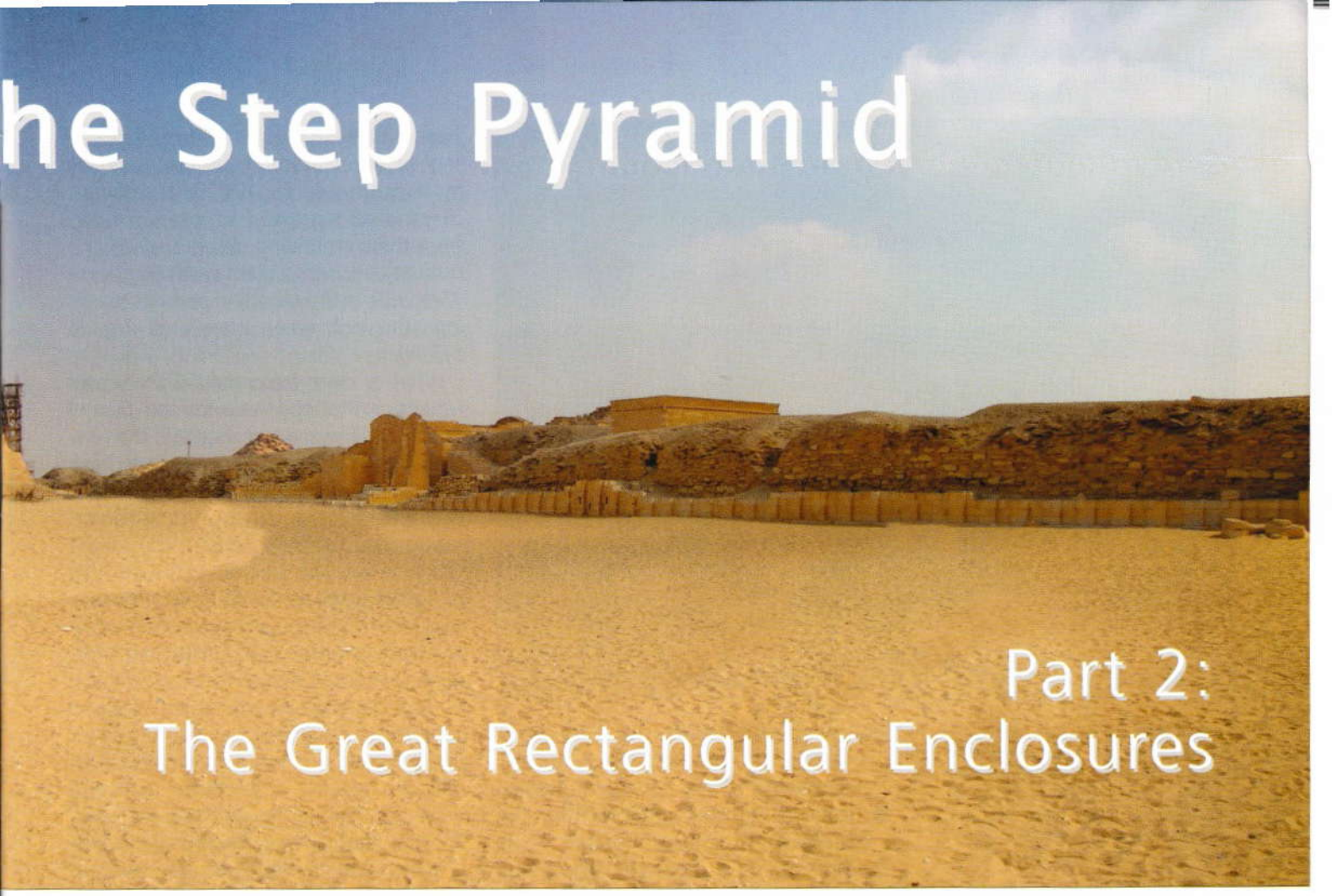


Fig. 1 - North Saqqara

he Step Pyramid



Part 2: The Great Rectangular Enclosures

In the last issue of AE, Colin Reader explained his theory about the significance of the Abusir Wadi. He now directs our attention to another fascinating feature of the Saqqara landscape: the Gisr el-Mudir.

In the first part of this article (see AE105), I described my involvement in Ian Mathieson's Saqqara Geophysics Survey Project and how this inspired me to research the earliest phases of development at Saqqara. The focus of Ian's work for many years had been the Gisr el-Mudir, a huge and seemingly empty enclosure located near to the southern end of the Abusir Wadi *(see Fig, 1, opposite)*. Egyptologists had known about the Gisr for many years and over the decades before the SGSP began to study the monument, limited excavations had been undertaken both along the lines of the buried enclosure walls and within the enclosure itself. From this early work, it had been established that the walls of the Gisr el Mudir, which defined an area twice the size of the Step Pyramid enclosure, were built with limestone masonry and that this vast enclosure appeared to be largely empty. The only recognisable feature within the enclosure was what appeared to be a natural hill, which projected north from the centre of the southern enclosure wall.

Ian and the SGSP team undertook extensive geophysical survey of the Gisr el-Mudir, together with excavations targeted at the key anomalies revealed by the survey work. Early excavations at the southern end of the Gisr revealed that the use of masonry had been limited and that the ancient engineers had taken advantage of a natural ridge of durable limestone which they had enhanced to form the southern 'wall' of the enclosure. They achieved this by excavating a trench to the south of the ridge and placing the irregular blocks of quarried stone on the higher ground above the trench. Large volumes of sand and gravel had then been scraped off the adjacent areas of desert and placed over the roughly placed masonry to enhance the feature even further. The natural hill in the centre of the southern 'wall' was also found to have been enhanced and enlarged by the addition of natural sand and gravel from the floor of the Abusir Wadi. It appears that by enhancing the natural landscape in this way, the ancient builders provided a platform which over-

ABOVE: The Step Pyramid Complex of Djoser at Saqqara.

OPPOSITE: (Fig. 1) A topographical map of North Saqqara showing the Saqqara Geophysical Survey Project concession area *(red dotted line)*, and the Abusir Wadi area *(green outline)*. with the Gisr el-Mudir at its southern end.

ABOVE (Fig. 2)
Members of the SGSP using the promontory in the south of the Gisr el-Mudir as a survey station with clear lines of sight across the Abusir Wadi and the Saqqara necropolis.

BELOW (Fig. 3)
A section through the western wall of the Gisr.
National Museums of Scotland

looked and dominated the area within the walls of the Gisr *(see Fig. 2 above)*.

In the west, SGSP excavations revealed the remains of the inner face of the enclosure wall, which consisted of the lower dozen or so courses of limestone masonry. This masonry, however, was only a façade which was supported from behind by a buttress of limestone rubble. From the geophysics data it was clear that the outer face of the wall had also been built with a rubble buttress supporting an outer masonry façade. Between these buttressed façades, large volumes of sand and gravel had been scraped from the surrounding desert surface and used to construct a giant earthwork, over 15m wide at the base and perhaps reaching 40m high when completed *(Fig. 3, below)*.

What is clear from the SGSP Annual reports is that the walls of the Gisr el Mudir all differ to some extent in the construction methods used. As we have already seen, elements of the southern wall were built by enhancing the natural topography of the southern end of the Abusir Wadi. The western wall was built as a large earthwork with inner and outer masonry façades. The eastern and northern walls however, were built using locally quarried limestone masonry. In the north, the masonry was articulated and carefully coursed. In the east, the work appears to have been done more hastily, with less carefully cut blocks of stone and areas in which no mortar had been used. A geophysics anomaly towards the southern end of the eastern wall was found to be a series of huge, roughly worked monoliths which were interpreted as the remains of a monumental gateway. This interpretation was made on the basis that the location of these monoliths near to

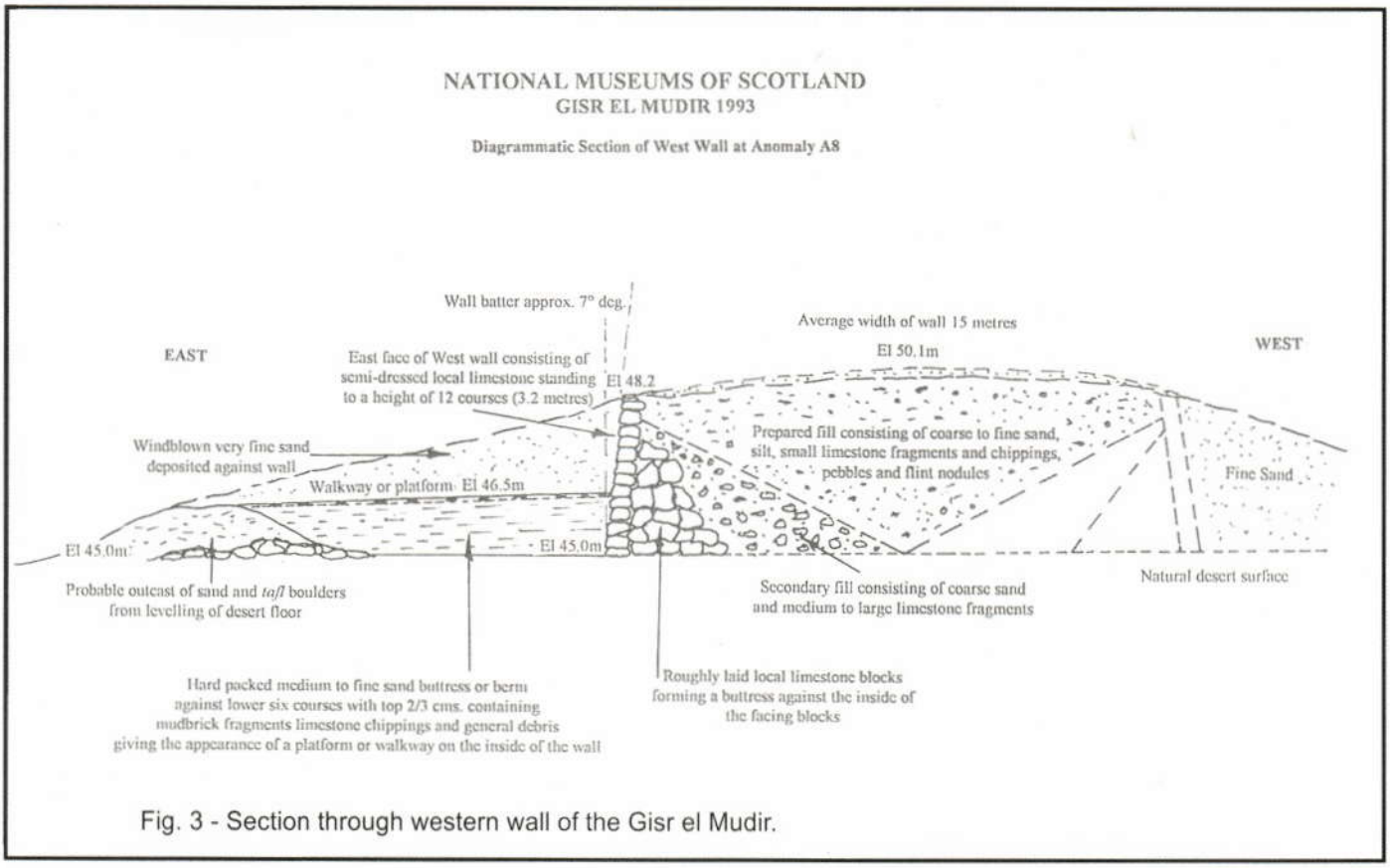


Fig. 3 - Section through western wall of the Gisr el Mudir.

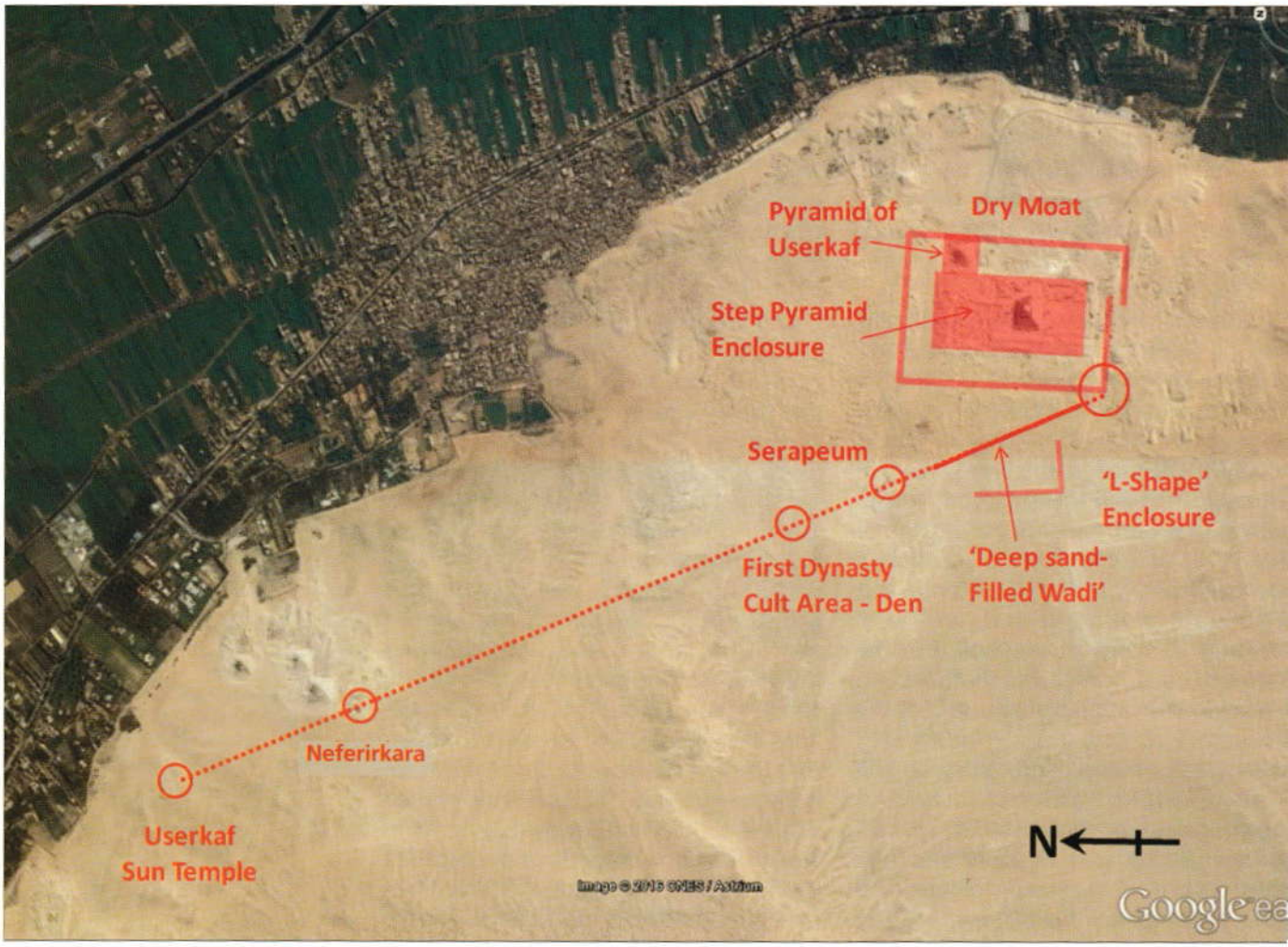
the south east corner of the enclosure, had parallels with the single entrance to Djoser's Step Pyramid enclosure. The SGSP's work confirmed that there are no structures within the Gisr el Mudir. However, the remains of what were likely to have been extensive areas of pavement were identified with both mudbrick paving and limestone slabs having been used by the ancient builders.

It was clear from the relatively primitive way the blocks of stone had been cut and laid that the construction of the Gisr el-Mudir had been undertaken at an early stage in the use of masonry in Egypt; however, the age and purpose of the enclosure remains the subject of much debate. The best evidence for dating the Gisr el-Mudir comes from a number of late Second Dynasty ceramic pots that were found in secure contexts within the surviving elements of the wall. But the use of quite primitive methods to enhance the natural features of the southern 'wall' of the Gisr could be seen as very early indeed and, although the western, northern and eastern walls of the enclosure were built in stone, the lack of carefully squared masonry and features such as the absence of quoining [strengthening] at the corners, suggest this work was particularly early. The range of techniques used to construct the Gisr el-Mudir, has led me to speculate whether the enclosure was a long-term project that developed over a number of subsequent reigns. Given that the most comparable structures, the Early Dynastic mudbrick enclosures at Abydos, appear to have been razed to the ground with each successive reign, there is, however, no obvious precedent for the Gisr having been built as a prolonged construction project in this way.

The Gisr el-Mudir is not the only early 'enclosure' that is present in the Abusir Wadi. Less than 250m to the north east is a feature known as the 'L-Shape' Enclosure, the remains of two walls which, it is generally assumed, represent the south west corner of another enclosure *(Fig. 1, G)*. Prior to the work of the SGSP very little was known about the 'L-Shape' Enclosure, but geophysical survey combined with site inspection established that rather than masonry, the surviving walls were simply accumulations of natural sand and gravel which had been scraped off the surface of the wadi. It is tempting to consider that these linear mounds of natural material, and the similar features along the southern wall of the Gisr el-Mudir, represent a particularly early building technique. However, there is little evidence for this in the context of the 'L-Shape' enclosure and, as the SGSP concluded, these remains may simply represent the early phases of a building project that was never completed. It is also difficult to establish whether all four walls of the 'L-Shape' Enclosure were ever laid out. The relevant SGSP annual reports conclude that walls in the north and east may have been removed during the construction of a series of Fifth Dynasty tombs, but I question this interpretation. The remaining sections of the south and east walls extend towards what the SGSP reports refer to as a "... deep, sand filled wadi, running along the 45m contour line ... ." *(Fig. 5, overleaf)*. Not only do the SGSP reports and accompanying drawings indicate that the walls of the 'L Shape' do not cross this wadi, the available data has led me to the conclusion that this feature may not be a wadi at all. If this feature was a natural water-eroded wadi, it should run downhill rather than along the 45m contour line as described by the SGSP. Furthermore, this 'wadi' feature appears to be too straight and its upper walls too uniform for it to be entirely natural.

As a general rule, I do not look for alignments in ancient Egyptian sites and have been generally sceptical that pharaonic monuments were laid out according to some carefully aligned 'master plan'. In the case of the "deep sand-filled wadi", however, I find it difficult to

BELOW (Fig. 4)
A reminder that Saqqara is a cemetery.



ABOVE (Fig. 5)
An indicative sketch of the apparent alignment of the "deep sand-filled wadi" identified by the SGSP.

avoid such conjecture. For example, there is no general understanding of why the Fifth Dynasty pharaohs chose Abusir as the site for their pyramids. However, as shown on Fig. 5 *(above)*, when the alignment of the "deep sand-filled wadi" is projected to the north, it appears to extend through the pyramids of Abusir and on to the earliest known monument in this area, Userkaf's Sun Temple at Abu Ghurob. When the alignment of the "deep sand-filled wadi" is extended to the south, it appears to meet the south east corner of another little-known great rectangular enclosure, the Dry Moat. We will look at the Dry Moat in more detail shortly, but it may be significant that other than the Step Pyramid enclosure, the only significant feature within the Dry Moat is the pyramid complex of Userkaf. In order to build a pyramid at this location, Userkaf had to compromise by placing the pyramid temple to the south rather that at the traditional position to the east of the pyramid. There has been much speculation as to why this was necessary at a time when there were other sites at Saqqara that were available to Userkaf and would have required no such compromise. Although the tentative alignment associated with the "deep sand-filled wadi" shown on Fig. 5 may provide a link between Userkaf's Pyramid and Sun Temple, unfortunately it gives us no insight as to why these particular sites were chosen. The potential significance of the alignment suggested by the "deep sand-filled wadi" is not limited to the monuments of Userkaf. This alignment also passes through the entrance cutting to the Serapeum, as well as through the First Dynasty Cult Centre of Den that was discussed in the first part of this article *(Fig. 1, A)*. I fully recognise that these features are from all parts of the Pharaonic era (from the First Dynasty reign of Den to the Serapeum, which is thought to have origins in the New Kingdom), but given that there is generally no understanding of how these sites or the location of the Fifth Dynasty necropolis of Abusir was chosen, it seems unlikely that an alignment which intersects so many important features over such an extended distance, can be dismissed as a mere coincidence.

The Dry Moat *(Fig. 6, below)* is a trench some 40m wide and 6m deep and was largely brought to the attention of scholars by the late Professor Nabil Swelim, who located it by using a variety of maps and aerial photographs. The Dry Moat encloses an area similar to that enclosed by the Gisr el-Mudir. However, as we have already seen, in contrast to the empty enclosure of the Gisr, the Dry Moat encloses the Third Dynasty Step Pyramid complex of Djoser and the Fifth Dynasty pyramid complex of Userkaf. As shown on Fig. 5, the southern arms of the Dry Moat do not meet and appear to overlap as if forming an entrance to the vast enclosed space – an entrance that opens towards the Abusir Wadi in the west. My initial interpretation of the Dry Moat was that it served as a quarry during the construction of the Step Pyramid enclosure wall. Ancient quarries in Egypt, however, are seldom as well-defined as the Dry Moat *(Fig. 6)* and are often difficult to locate in the landscape. This and other considerations have led me to reconsider the origins of the Dry Moat. As discussed in the first part of this article, many scholars consider that during the earliest dynasties, Saqqara was approached from the inundation in the east rather from along the Abusir Wadi as I believe. The factors that influenced Djoser's choice of site are not known, but it is important to remember that, when initially conceived, Djoser's tomb was to be a low-lying mastaba rather than a pyramid. At the chosen site, this mastaba tomb would have been largely invisible from the inundation. Given that there were relatively few tombs and temples at Saqqara in the early Third Dynasty, if visibility from the inundation had been an important factor, Djoser could have chosen to build at any number of more prominent sites. So why did Djoser choose to build at this location? Was the site already regarded as sacred in some way? There is abundant evidence (discussed in detail in my forthcoming *JEA* paper) for late-Second and early-Third Dynasty development at the site of the Step Pyramid and it is interesting to speculate whether, like Djoser, the builders of these earlier tombs had been drawn to a sacred area defined by (or in other ways associated with) the Dry Moat. Similarly, it is interesting to speculate whether the location of the Second Dynasty royal tombs of Hetepsekhemwy and Ninetjer *(Fig. 1, D & E)* recognised the presence of the Dry Moat or the area defined within it. At 6m deep, the base of the Dry Moat lies at the same general depth as the Second Dynasty royal

BELOW (Fig. 6)
An exposed section of the Dry Moat between the Step Pyramid enclosure wall and the Unas causeway.

tombs, a depth which, as discussed in the first part of this article, may have been determined by the presence of a particularly durable layer within the bedded limestones at Saqqara that may have presented difficulties during construction. Do these considerations of depth allow us to differentiate between excavations undertaken in the Second Dynasty (when quarrying and construction in stone will have been in their infancy in Egypt) and subsequent excavations in the Third Dynasty? Certainly it is the case that many of the shafts and passages excavated beneath the Step Pyramid and Djoser's Southern Tomb are more technically accomplished, extending to depths in the order of 27m.

I find it intriguing that for a relatively brief period in the Early Dynastic, a number of royal tombs were built in what was an otherwise unremarkable area of Saqqara. Whatever drew Hetepsekhemwy, Ra'neb and, later, Djoser to this location, it was not visibility from the inundation. Does the presence of older structures within the Step Pyramid enclosure and the unique use of a moat to enclose many of these features suggest some form of sacred landscape in this part of the site? If so, had it been the intention of Hetepsekhemwy to mimic the sacred landscape of the traditional royal burial site at Um el-Qa'ab at this new site close to Memphis? My research into the earliest phases of development at Saqqara is still very much a work in progress and is becoming increasingly reliant on obscure publications or third party accounts of excavations that were never fully published. It is inevitable that this future research will also draw on the important work of Ian Mathieson and the Saqqara Geophysical Survey Project as well as that of Nabil Swelim and, although both men are no longer with us, I feel privileged to carry their legacy forward even if only in a small way.

Colin Reader

Colin is a Fellow of the Geological Society of London and Chartered Geologist with more than twenty five years' professional experience in the application of geology, geomorphology and hydrology to construction. A regular contributor to AE Magazine (including articles on the Meidum Pyramid in AE81 and the Geology of Giza in AE74), he is fascinated by the way the ancient Egyptians worked with the landscape and used the stone they quarried to build some of the most wonderful and enduring monuments man has ever conceived. His examination of the famous necropolis of North Saqqara from an engineering geologist's perspective led to some surprising findings detailed in this article and in a paper in the recently published *JEA* (2017).

Further Reading

Reader, C. (2017) "An Early Dynastic Ritual Landscape at North Saqqara: An Inheritance from Abydos?" in *JEA* 103.1. EES.

Mathieson, P. (ed.) (2013) *Seeing Under The Sands of Saqqara: Geophysics in the Service of Egyptian Archaeology*. The Scottish Egyptian Archaeological Trust. [Reviewed in AE83]

Dodson, A (1996) "The Mysterious Second Dynasty" in *KMT* 7:2.

All images (except where specified) provided by the author