BRILL

JOURNAL OF MATERIAL CULTURES IN THE MUSLIM WORLD 4 (2023) 119–142

Journal of Material Cultures in the Muslim World

brill.com/mcmw

Varia

Discovering Early Islamic Basra: the Origins and Development of Iraq's Southern Metropolis

Andrew Petersen | ORCID: 0000-0003-3457-3846
Dept of Archaeology and History, University of Wales Trinity Saint David, Lampeter, Ceredigion, SA48 7ED, UK
Corresponding author
a.petersen@uwtsd.ac.uk; andrewduncanpetersen@yahoo.co.uk

Alastair Northedge | ORCID: 0000-0001-6549-7335
Université Panthéon-Sorbonne (Paris 1)
Alastair.Northedge@univ-paris1.fr; anorthedge@orange.fr

Frank Stremke
Stremke Archaeology, Middenmang, 20 28755 Bremen, Germany
frank@stremke-archaeology.net

Martin Bates | ORCID: 0000-0003-3457-3846
Dept of Archaeology and History, University of Wales Trinity Saint David, Lampeter, Ceredigion, SA48 7ED, UK
m.bates@uwtsd.ac.uk

Ifan Edwards
CREH, Aberystwyth University
ifan.edwards@gmail.com

Received 1 December 2021 | Accepted 27 February 2023 |
Published online 30 November 2023

Abstract

This article reports on recent fieldwork at the site of the early Islamic city Basra, located fifteen kilometres to the southwest of the modern city. The article sets the site within the geographical and historical context of early Islamic Iraq with particular reference to Kufa and Wāsit. In addition, the article contains a review of previous archaeological research followed by a summary of the results from current fieldwork carried out by the authors. Finally, this text highlights the need for further fieldwork both to answer research questions and protect the valuable heritage of Iraq's first Muslim city.

Keywords

Basra – Islamic Archaeology – Mesopotamia – Iraq – Islamic cities

• • •

> Baṣra, de fait, est le veritable creuset où la culture musulmane a pris sa forme, classiquement durcie, entre le 1er et le 4me siècle de l'hégire
>
> MASSIGNON, 1954: p. 72

• •
•

1 Introduction[1]

The new towns and cities founded by the Arabs during the first centuries of Islam have been the subject of considerable discussion and research in Islamic studies, particularly in architecture, history, and urban planning. The appearance, configuration, and design of the new urban foundations are important because they offer some idea of how the new Islamic civilisation was organised. The extent to which they were a continuation of pre-existing cities or new forms of settlement is of specific interest and helps us to understand how Muslim society differed from earlier civilisations. New Muslim towns were founded throughout the Islamic world from Spain to Pakistan and included settlements which developed into major cities, for example, Cairo and Qayrawan, as well as cities abandoned within a few decades of their construction, namely Madinat al-Zahra in Spain or Anjar in Lebanon. While these cities are of interest and provide important information about the origins of Islam in different regions, the new towns established in Iraq have attracted the most discussion. This is partly because the earliest Islamic cities were those built in Iraq, and they figure so prominently in the legal, literary, and religious texts of the early Islamic period. The influence of new Iraqi towns can also be observed in the creation of those elsewhere, for example, in the early-third/ninth century, refugees established the city of Basra in Morocco, which was directly modelled on the first/seventh-century city in southern Iraq (Yver, 2022; Benco, 2004: p. 3).

The Iraqi cities which may be considered new foundations of the early Islamic period include Basra, Kufa, and Wasit. These cities were referred to collectively as *amsār* based on their origins as Arab military camps established during the initial Muslim conquests. Basra and Kufa were organized within a few years of each other during the 10s/630s, although the precise dates have been a matter of discussion, with each city claiming to be the earliest (Wheatley, 2001: pp. 42, 45). Wāsit was founded in 84–5/703–4 by the Umayyad governor of Iraq, Hajjaj ibn Yusuf, mid-way (*wāsit*) between Basra and Kufa as a means of controlling the two early cities, which had a reputation for rebellious independence (Fig. 1).

Many of the publications discussing new Iraqi towns have been carried out either by architectural historians or historians based on the available evidence in mostly later textual sources. This research is concerned with understanding the principles or rationale underlying the physical layout of cities, such as the location of principal buildings, street patterns, and housing allotments. For example, the Tunisian historian Hichem Djait made a detailed study of Kufa where he argued that it was founded *ex nihilo* on

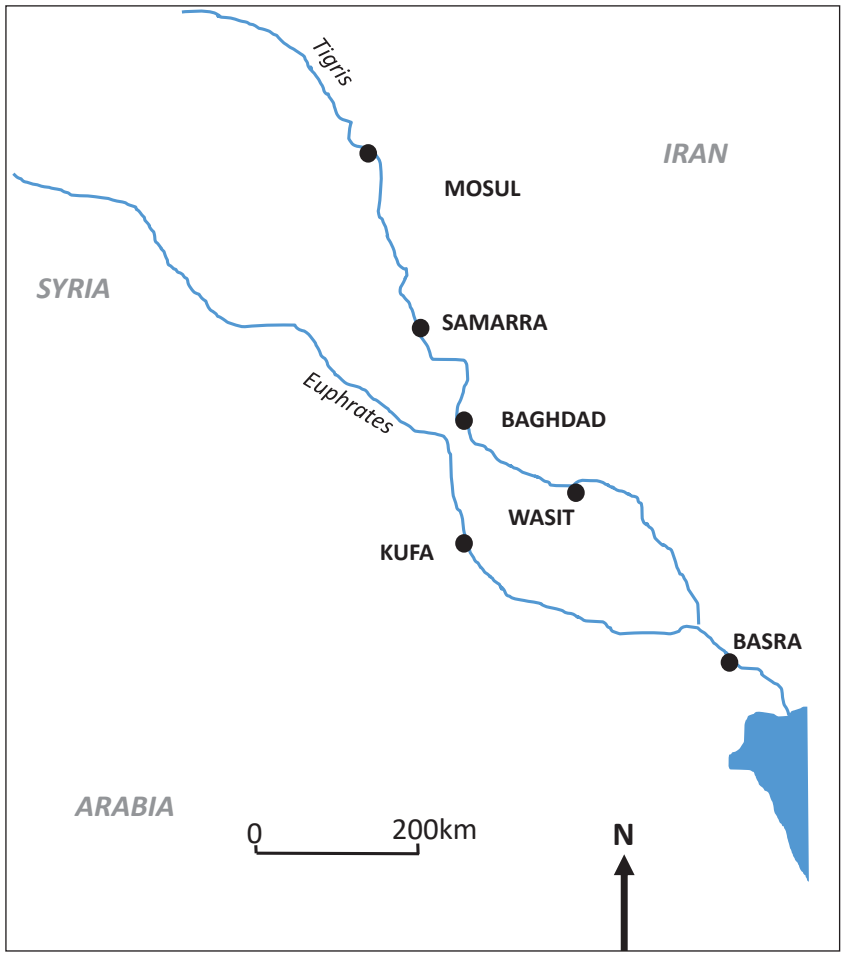

FIGURE 1
A map of Iraq showing early cities
IMAGE COURTESY OF
A. PETERSEN

the right bank of the Euphrates with a centrally determined plan based on the organization of tribes within the Arab Muslim army (1986). Others, including the Saudi architect Jamel Akbar, argued that the plan of Kufa was based on the decisions of the inhabitants, working as part of different tribal groups (1989). Another theoretical approach to understanding the urban form was proposed by Ibrahim Allawi, who identified geometrical and cosmological factors as the main structuring principles for early Islamic cities (1988; Petersen, 2022).

The Early Islamic Basra Project aims to understand the complex topography of this ancient site and the origins and development of the city. The project utilises existing data and new fieldwork to produce an archaeological map of the site, which can be used to understand future archaeological work in the same location.[2] The project comprises three main elements: 1) an aerial photogrammetry based on a UAV (aerial drone) survey; 2) a ground survey including an examination of excavated sites and the collection of ceramics and other surface material; and 3) a geo-archaeological survey involving core samples to determine the depth and nature of stratigraphy on the site. This project can provide primary physical evidence of buildings, features and artefacts, which may help to understand how a particular city functioned. For example, it can provide some idea about the density of settlement, the evolution of housing types from temporary wooden structures to permanent brick buildings, and the relationship between pre-existing structures.

Archaeology can also provide insights into the development of civilian infrastructure, such as the water supply system. For example, there are many historical references

to the shortage of drinking water in Basra (Pellat and Longrigg, 2012: p. 1), and without archaeological research, it is difficult to understand either the nature of this problem or how it was addressed. A similar situation existed in Palestine with the new Umayyad town of Ramla (96/715). According to historical texts, it had a persistent shortage of drinking water. Intensive archaeological work at the site, including the documentation of a ten-kilometre-long aqueduct system and a series of local rain-fed cisterns, has provided a new model for understanding the development and eventual decline of the city (Gorzalczany, 2021).

The site of early Islamic Basra presents an ideal opportunity to investigate an early Islamic city because much has remained undeveloped since it was designated an archaeological site during the 1970s. However, archaeological research at the site has been limited – partly because of conflict and instability over the last three decades and owing to the limited coordination of the results from previous archaeological work. This article aims to provide a starting point for creating a holistic view of the development of the early Islamic city.

2 The Archaeology of Kufa and Wāsit

Before looking in detail at Basra, it is worth briefly reviewing the archaeological evidence for the other two Iraqi *amsār* or garrison cities of Kufa and Wāsit. These cities are both of direct relevance to Basra – Kufa was established at approximately the same time, and Wasit was founded in response to the control of the other two cities. Regarding archaeology, Kufa and Wasit are better known than Basra, partly because they were both investigated during the mid-twentieth century and incorporated into the surveys of early Islamic architecture published by KAC Creswell (1938–40 and 1958). Basra, on the other hand, was only excavated from the late 1970s–80s, and although a short description was included in a revised version of Creswell's *Short Account of Muslim Architecture* (Creswell and Allan, 1989), the results of the excavations have not found their way into the wider literature on Islamic architecture.

2.1 *Kufa*

Until its recent expansion, the modern city of Kufa was a small urban settlement dwarfed by the much larger city of Najaf nine kilometres to the southwest, which meant that much of the early Islamic city was available for excavation. The first modern archaeological study was undertaken by the French orientalist Louis Massignon, who visited the site twice – once in 1904 and again in 1939. Although he did not commence any archaeological excavations, he completed a detailed walking survey of the site, and with the aid of aerial photographs, produced a map of the early city. Although not trained as an archaeologist, Massignon was acutely aware of the pre-Islamic history of the site and especially the proximity of the remains of Hira, the capital of the Lakhimid kingdom, the dense network of ancient canals, and the surviving Sasanian toponyms (1935). Based on his careful reading of the topography and the Arabic sources, Massignon argued that instead of a rigid plan, the layout of the city represented a process of sedentarisation with clusters of tribal settlements within an area defined by the course of the Euphrates and pre-existing canals (Fig. 2).

A 1967 satellite image of the city published by Northedge (2022: p. 212) shows the city's layout before modern development obscured traces of ancient features and alignments. The first archaeological excavations at Kufa occurred between 1938–56 under

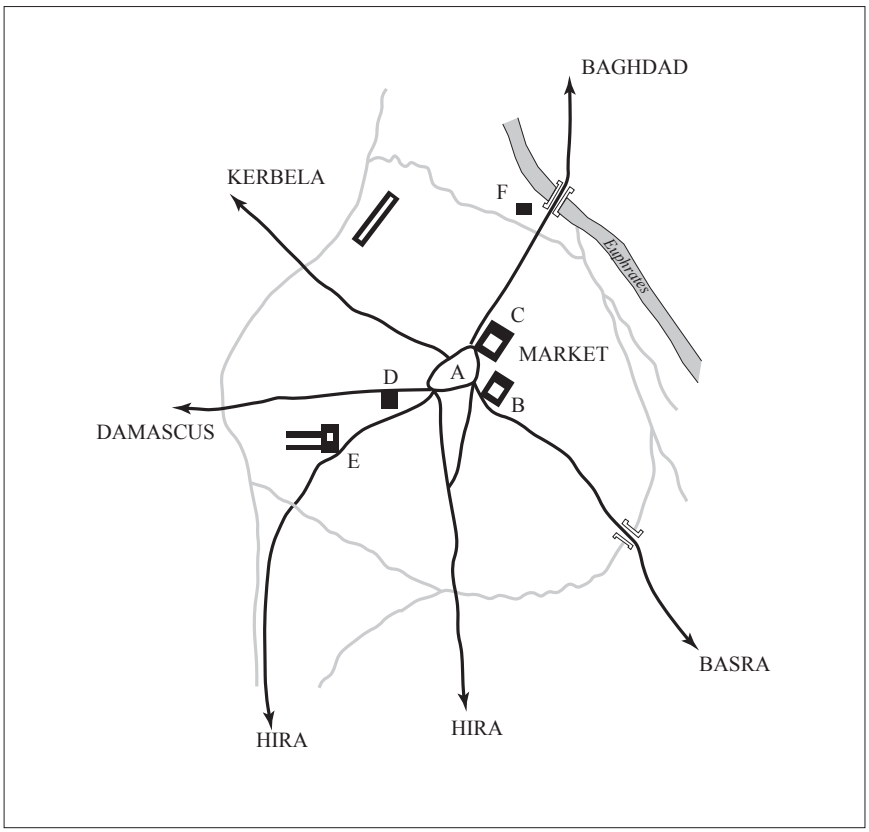

FIGURE 2
A Map of Kufa after Massignon
IMAGE COURTESY OF
A. PETERSEN

the direction of Muhammad Ali Mustafa and targeted the area immediately to the west of the Friday mosque, revealing a large palatial building interpreted as the Dar al-Imara (1954; 1956; 1963; Creswell and Allan 1989: 10–5). Apart from the work on the Dar al-Imara, there have not been any published archaeological excavations on the site, and the recent expansion of the modern city has reduced the area available for any future work.

2.2 *Wāsit*

Although Wāsit was built on the banks of the Tigris, since the ninth/fifteenth century, the river changed its course, resulting in the abandonment and eventual desertification of the site. This meant there was some confusion about the city's location, which was finally resolved by excavations undertaken by Fuad Safar between 1936–42 (Sakly, 2022). The only standing remains are a monumental entrance flanked by two truncated minarets constructed during the seventh/thirteenth century (al-Jannabi, 1975: 82–95). Six seasons of excavations carried out by Iraq's Department of Antiquities revealed a succession of four superimposed congregational mosques and part of the adjacent Dar al-Imara. The earliest level was dated to 83/702 and identified the mosque built by the Umayyad governor al Hajjaj (Safar, 1945). Similarly to Kufa, there have been no excavations beyond the congregational mosque and the Dar al-Imara, so little is known of the wider area of the city. Nevertheless, satellite images indicate that the remains extend onto both sides of the former bed of the Tigris and show the later contraction of the site around the seventh/thirteenth-century ruins. The entire occupied area extended over more than three square kilometres and was bordered to the south by marshes (Fig. 3).

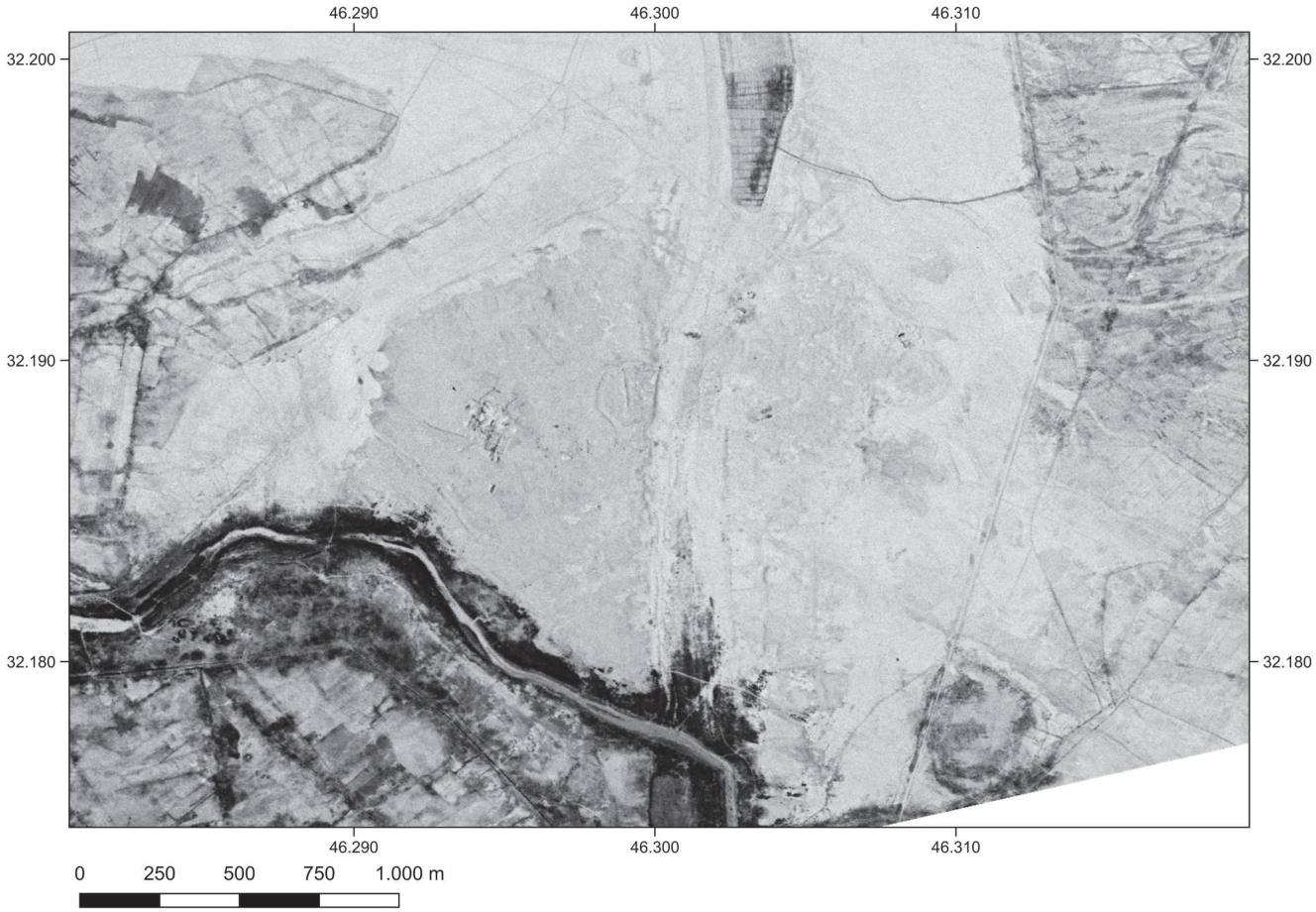

FIGURE 3
A CORONA satellite image showing the site of the early Islamic city of Wasit, 1968
IMAGE COURTESY OF U.S. GEOLOGICAL SURVEY

3 The Site of Old Basra

Even though the significance of Basra to early Islamic civilisation is well known, the physical remains of the site and its location are poorly understood despite extensive historical information and considerable archaeological fieldwork at the site. There are many reasons for this unfortunate situation, including in recent times, conflicts surrounding the Iran-Iraq war, the 1990 Iraq War, and the 2003–11 Iraq War, which all had a significant impact on the city and its immediate environment. Other reasons for the limited understanding of the site entail the relatively small number of standing historical buildings and the complex topography of the site. The few standing monuments result from several factors, namely the relocation of the city during the mediaeval period (see below), the growth and expansion of the city Zubair from the twelfth/eighteenth century, and also targeted destruction as part of ongoing violence (e.g., the Talha ibn Zubair shrine destroyed in June 2007). Both natural processes and human activity have contributed to the complex topography of the site, which poses considerable challenges to understanding the evolution of the urban landscape. Iraq in general and southern Iraq in particular, is a dynamic environment stemming from natural processes and human modification stretching back more than 8,000 years. The primary natural processes modifying the landscape are related to the flow of two major rivers, the Tigris and the Euphrates, which currently merge into a single channel, the Shatt al-'Arab, emptying into the Persian Gulf below Basra. Over the centuries, the course of the rivers has shifted several times, largely due to the accumulation of alluvial silts and changes in

the quantity and velocity of water (Nutzel, 1982a; 1982b). Some effects of these changes include creating marshy areas, new watercourses, or the extension of dry land into the Persian Gulf. Aside from these natural processes, humans have built dams, diverted rivers, created irrigation systems, and excavated canals, creating a dynamic landscape difficult to relate with historical texts. Despite these problems, there is now a considerable amount of data that can provide the basis for understanding the origin and development of this remarkable city.

4 Historical Background

Early Islamic Basra or "Old Basra" is located fifteen kilometres to the southwest of the modern port city of Basra (Fig. 4). Most authors agree that modern Basra overlies an earlier Sasanian port known as ʿUballa (Kramers, 2000). The old port continued in some form after the Arab conquests, assuming the name Basra when the early Islamic city declined. The shift from the early Islamic site to the modern town is unclear, but it probably occurred during the mediaeval period and certainly before the Ottoman conquest in the tenth/sixteenth century (Sayyid Ali Reis, 1917). However, the location of the early Islamic city was never entirely forgotten, and people probably continued to live around the tomb of Zubair bin ʿAlwan, which was renovated and covered with a dome in 979/1571. In the fifteenth/eighteenth century, the area around the tomb formed the nucleus of a new city founded by Sunni refugees fleeing persecution by the Wahhabis in Arabia (al-Qatrani, 2015).

Basra was founded in 17/635 and appears frequently in early Islamic texts, which describe many features of the city as well as the intellectual, political, religious, and

FIGURE 4
Aerial view of Zubair and the site of early Islamic Basra, May 2018
IMAGE COURTESY OF F. STREMKE EARLY ISLAMIC BASRA PROJECT

social life of its inhabitants. Two writers provide information about the foundation of the city – Khaliīfa Ibn Khayyāṭ (d. 240/854) and Ahmad ibn Yaḥya al-Balādhurī (d. 279/892). Ibn Khayyāt is particularly helpful because he was from Basra and had an ancestor who worked in the provincial tax office, and so had access to detailed information about landholdings (Hoyland, 2019). According to both authors, the city was founded by one of the companions of Prophet ʿUtba b. Ghazwān, who was searching for a suitable location to establish a military base for conquests further east into Iran. ʿUtba asked the caliph ʿUmar for permission to establish a camp and was told to choose a place with water and pastureland. When he reached a suitable site, ʿUtba wrote to the caliph and told him that he had found a place with many reeds on the edge of the desert towards cultivated land. The site was on or near an old Sasanian settlement of Vahishtabadh Ardashīr, identified by the Arabs as al-Khurayba (small ruin). One of the important features of the location was its stony soil (referred to in Arabic as *al-baṣra*) rather than the clayey soil, which had proved problematic for the troops at other locations.

The first houses were constructed from reeds and had been temporary, so they were packed away when the camp was deserted during the raiding season. Later, the reed-built structures were strengthened with low walls until a fire swept through the camp and the houses were rebuilt with mud brick and in some cases fired brick. The city was divided into five districts (*khums*) based on tribal groupings Ahl al-ʿAliya, Tamīm, Bakr b. Wāʾil, ʿAbd al-Qays, and Azd (Donner, 1984). The composition of the groups and their location within the city were reconstructed by Massignon who placed the Ahl al-ʿAliya in the vicinity of the mosque, the Tamīm in the southeast, the Bakr b. Wāʾil close to the centre in the northeast, the ʿAbd al-Qays at the edge of the city in the northeast, and the Azd in the northwest of the city (1954). The mosque was located in the city centre together with the governor's house, the latter incorporating a prison and a chancellery. Much like the urban houses, the mosque and other central buildings were originally reed construction and subsequently rebuilt with more durable materials (Hoyland, 2019). The city's population increased rapidly, and by the second/eighth century, it may have been more than 250,000 (Kennedy, 2011). In addition to members of Arab tribes, the city's inhabitants comprised several different groups, including Africans, Christians, Indians, Jews, and Malays.

The city was connected to the Shatt al-ʿArab (Dijla al-Awra) by two canals, the Nahr al-Maʾqil (excavated 46–52/666–72) and Nahr al-ʿUballa (excavated 17–29/638–50), respectively, used by ships entering the city as well as for irrigation. However, the water was brackish because the Shatt al-ʿArab is actually a tidal estuary. As a result, the inhabitants of the growing city desperately needed fresh drinking water, and to solve this problem in 126/744, the governor of Basra, Ibn ʿUmar, commissioned a new canal transporting drinking water directly from the marshes to the north (Verkinderen, 2015: p. 86). The location of the early Islamic city was never entirely forgotten, and several travellers and visitors recorded their impressions. One of the earliest was the Moroccan traveller Ibn Battuta, who visited in 726/1326, stating, "as we approached the city[,] I had remarked at a distance of some two miles from it a lofty building resembling a fortress. I asked about it and was told that it was the Mosque of ʿAli. Basra was in former times a city so vast that this mosque stood in the centre of town, whereas it is now two miles outside it" (Gibb, 1929: p. 86).

In 1013/1604, the Portuguese traveller Pedro Teixeira visited the site of the early Islamic city, and he described the following "of this some remains may yet be seen, as the walls of a great mosque, fragments of the rampart, and part of its ditch. To all appearance[s,] it was a great city. There are some wells of good water, and these lands are cultivated, yielding wheat, barley[,] and vegetables" (1902: p. 35). In the fifteenth/eighteenth

century, Carsten Niebhur came to Basra and visited the ancient site, where he observed the city ruins and speculated on the reasons for its decline (1780: pp. 297–300). While the historical information is rich and detailed, its reliability remains unclear for the city's early years, particularly as the initial sources date from the third/ninth century, two hundred years after the foundation. Also, some scholars have questioned the progression in building materials from reed to mud brick to fired brick, suggesting this is a *topos* to convey the idea of progression from "the pure simplicity of the Prophetic Age [to] the corrupt materialism of the Marwanid period" (Antun, 2016: p. 3). Questions can be answered through excavations, notably drainage, material culture, the nature and form of public buildings – including religious structures, the size and form of early houses, the sequence of occupation and final abandonment of the site, street patterns, and water supply.

5 Previous Archaeological Research

The real scientific investigation of the site commenced during the twentieth century with Ernst Herzfeld's investigations of the mosque and Louis Massignon's work on the topography of the early Islamic remains. Herzfeld, who visited between 1907–8 took photographs, including the now-destroyed Tomb of Talha, and made detailed and measured drawings of the mosque's corner tower. He also commented on the surface ceramics – generally unglazed single sherds – which he noted were less numerous than those in Samarra or the sites of the Shat al-Nil (Sarre and Herzfeld, 1911: vol. 1, pp. 249–52). Massignon made two visits to the site in 1907 and 1945, forming the basis for a detailed discussion of the city (1954). After acquainting himself with the topography, Massignon used aerial photographs and existing maps to produce two schematic plans; one showing the site of "Old Basra" and its relationship to the modern city, and the other a reconstruction of the early Islamic city based on surviving features and historical information. This plan has formed the basis for subsequent reconstructions of the early city.[3]

The first archaeological excavations in "Old Basra" were carried out by Khalid al-A'dami from the Department of History, Basra University, between December 1972 to April 1973 and were focused on the Great Mosque (Postgate, 1973). Further excavations took place in 1978 under Khadhim al-Janabi for the State Board of Antiquities and Heritage "aimed at revealing as much as possible of the early city and to protect it from modern housing development" (Postgate and Watson, 1979). The excavations revealed the remains of several large houses, each with a prayer room containing a mihrab. Some rooms were covered by domes and decorated with stucco panels (Figs. 5–7). In addition to the palatial house, a large industrial building identified as an oil press was uncovered. Both the houses and the oil press were dated to the early Abbasid period, specifically the second–third/eighth–ninth centuries. More than 120 trial trenches were completed in 1979 along the eastern limits of the site at the intersection of the Basra-Nasariyya and the Basra-Safwan highways. The excavations yielded small domestic and industrial buildings paved with fired brick containing glazed pottery and glasswork dating from the second–seventh/eighth–thirteenth centuries (Fig. 8). The houses in this area were smaller than those northwest of the site and built closer together. During the 1980s, excavations and conservation were carried out on numerous buildings, including a large compound enclosed within a wall supported by semi-circular buttresses (see Al-'Azawi n.d.). Since 2003, many emergency excavations have been carried out within the area of "Old Basra," especially a series of kilns and a water-powered industrial installation. Unfortunately, the records of these excavations are mostly unpublished and

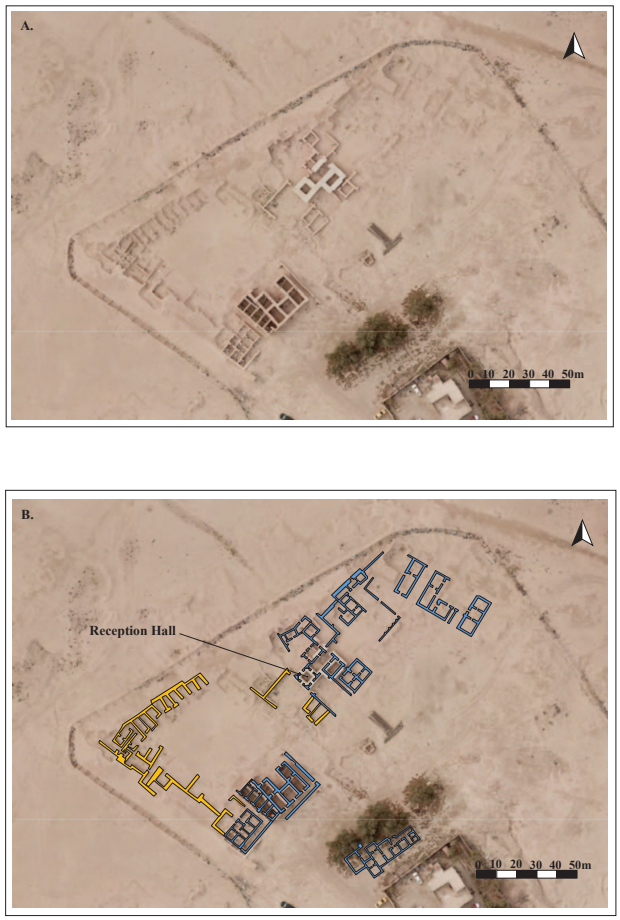

FIGURE 5
A. An ortho-photo of a large domestic structure, May 2018. **B.** An ortho-photo overlaid with the 1975 excavation plan from SBAH archives. The reception room contains the stucco plaques depicted in Figs. 6–7.
IMAGE COURTESY OF F. STREMKE EARLY ISLAMIC BASRA PROJECT

FIGURE 6
Conserved stucco excavated in 1975, April 2017
IMAGE COURTESY OF A. PETERSEN

FIGURE 7
Conserved stucco excavated in 1975, April 2017
IMAGE COURTESY OF A. PETERSEN

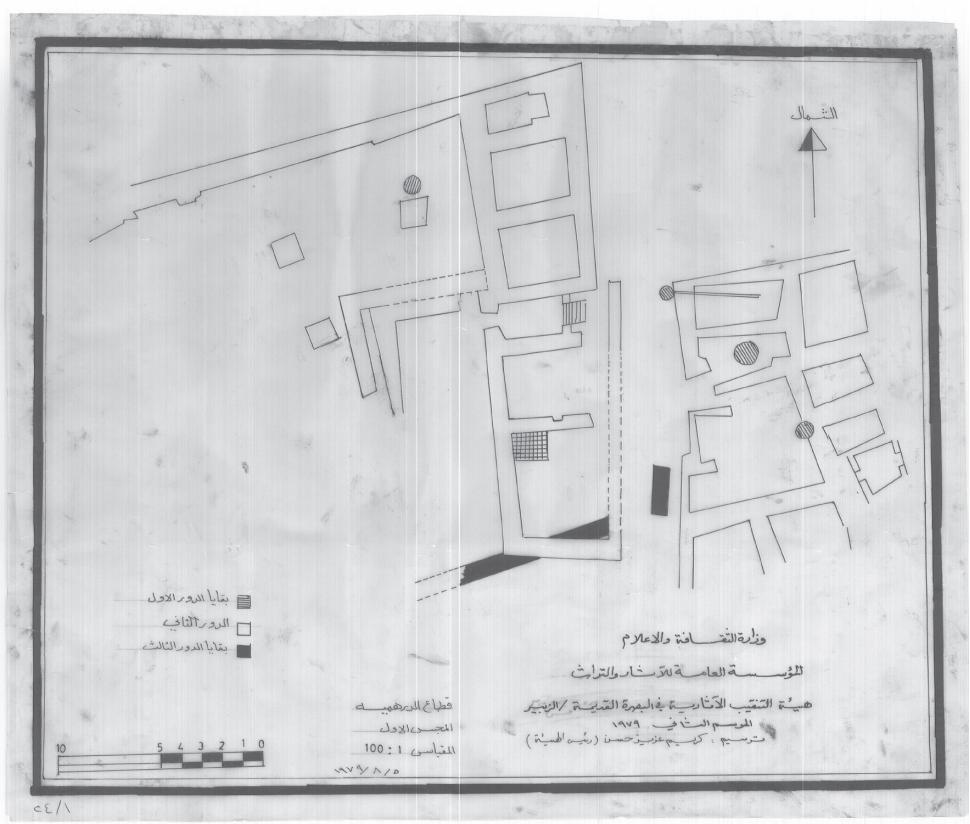

FIGURE 8
A plan of housing excavated during the 1979 season in "Old Basra/Zubair" by Kareem Aziz Hasan
IMAGE COURTESY OF SBAH, BAGHDAD

usually only in summary form. While some plans and drawings of buildings survive in the archives of the State Board of Antiquities and Heritage, their location within the site is often unclear from the labels, and the drawings themselves are often schematic with very little detail (see Fig 8).

Aside from systematic excavations carried out by the State Board of Antiquities and Heritage and other official organisations, there have also been chance finds. For example, immediately after the First World War, a limestone statue originally produced in the eastern Mediterranean was found in the vicinity of Zubair and presented to the British Museum in 1919. The statue depicting a shepherd carrying a lamb indicates a Christian origin and may relate to one of these communities known to have been present in the city (Simpson, 2019). Less spectacular but possibly more significant finds were the kiln furniture and a series of bowl and cup fragments datable to the third–fourth/ninth–tenth centuries. These were uncovered in 1952 and presented to the Metropolitan Museum of Art in New York. Petrographic studies carried out in 1990 indicate that similar ceramics from a large number of sites throughout the Gulf and Indian Ocean regions were also probably made in Basra (Mason and Keall, 1991; see also Priestman, 2011).

There have been a number of remote archaeological studies using satellite imagery (mostly CORONA images) combined with historical texts to gain an understanding of the ancient city. One of the most detailed studies is an analysis of the canal and irrigation system by Peter Vekinderen. Evidence from the CORONA images demonstrates that the site of "Old Basra" is bounded to the north, east, and south by lower ground liable to inundation and has evidence of agricultural use. The significance of this study was that the area northeast of the city has a complex network of irrigation channels suggesting intensive agricultural production. However, in the southeast, the ground surface is marked by a series of long ridges (on average one kilometre long) set at intervals of 50–200 metres (Verkinderen, 2015: pp. 74–5). The ridges were previously recorded by Howard Nelson who stated that on average they were fifteen metres wide and up to five metres high. Nelson calculated that the area covered by the ridges comprised 45 million tonnes of soil, which is equivalent to the top 0.13m of soil removed from the surface and piled up to create the ridges (1962). Analysis of the ridges indicated that they had salinity twice as high as the surrounding soil. Verkinderen has followed Nelson by suggesting that these were the areas where the Zanj (usually considered to be from East Africa) had been employed to clear the salt flats, allowing them to be suitable for agriculture.

6 Early Islamic Basra Project

The Early Islamic Basra Project aims to collate existing archaeological data on the city from previous excavations and surveys and supplement this information with new data from non-invasive fieldwork. These results can provide insights into the development and ultimate abandonment of this major urban site. The fieldwork comprised three main activities: 1) an aerial survey; 2) a ground survey; and 3) geo-archaeology.

1. The UAV (Unmanned Aerial Vehicle also known as a Drone) survey was completed with a DJI Phantom Quadrocopter at a height of 150 metres and photographed the two main unoccupied areas of the site. The resulting set of overlapping images were then linked to fixed points on the ground, which were located using a Differential GPS Total Station. The accuracy of the terrain modelling was then checked using a mobile antenna. The resultant photomosaic has been used to create a 3D relief map of the surveyed areas with an accuracy of two centimetres.

2. The surface survey focused on parts of the site where archaeological features were visible, e.g., the remains of structures previously excavated or areas undisturbed by modern activity. Local sensitivities and security issues meant it was impossible to systematically visit all parts of the site. However, to ascertain any differentiation in occupation over the site, it was divided into three zones (A–C) separated by the three major roads, leading east to west (Fig. 9). There is a possibility for adding further zones as well as subdividing each zone into smaller areas. During this first phase of fieldwork, the collection of ceramics was limited to areas around known excavation sites, allowing for an approximate dating and understanding of the character in these areas. All diagnostic sherds were photographed and drawn. Preliminary results indicate ceramics from the seventh/thirteenth century (e.g., Iranian stone-paste) to the second/eighth century (whiteware) and earlier (Figs. 10–2). Given that all the ceramics collected were surface finds, they can only be accepted as indicative rather than definitive evidence of occupation in particular areas of the site.
3. The geophysical survey of the site was carried out by Martin Bates and Erin Kavanagh from the University of Wales and Nawrast al-Ayobi from the University of Basrah. The survey was undertaken with a hand-powered sand auger to obtain sample cores from beneath the current ground surface. To understand the underlying geology of the area, the team examined a large depression at the northwest corner of the site, recently used for the extraction of sand and other materials. The sides of the depression revealed deeply stratified deposits (approximate depth of twenty metres) mostly derived from fluvial action. A total of ten layers of Quaternary deposits were identified, which can be divided into two main groups; an upper clayey cohesive layer and a series of lower layers composed of cohesionless sediments based on sand from the Dibdibba formation. The upper layer, varying between one and two metres, comprised a series of clay layers of fluvial and deltaic sediments. Episodes of flash floods as well as

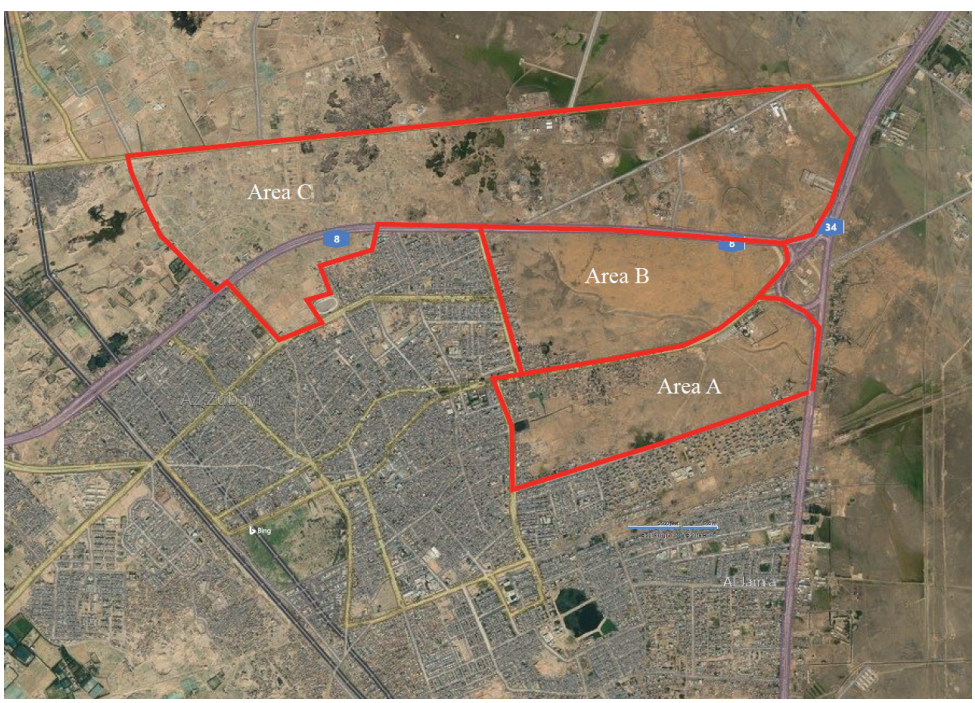

FIGURE 9
Aerial survey areas for the Early Islamic Basra Project
IMAGE COURTESY OF F. STREMKE EARLY ISLAMIC BASRA PROJECT

ultra-arid periods with Aeolian deposits, were identified. Two main areas of the site were selected for sampling, Area A to the south of the Khatwa ʿAli Mosque and Area C on the northwest edge of the site in the area of the sand quarry with the remains of the city wall. The rationale was to have core samples both from the middle of the site and the presumed edge of occupation. One of the problems encountered in Area A was the large quantity of fired brick debris below the ground surface, preventing most boreholes from reaching below a metre. In Area B, a similar problem was encountered with large quantities of pale brown and silty brown sand and occasional quartz pebbles, which were very difficult to penetrate with the sand auger and appeared homogenous to a depth of five metres.

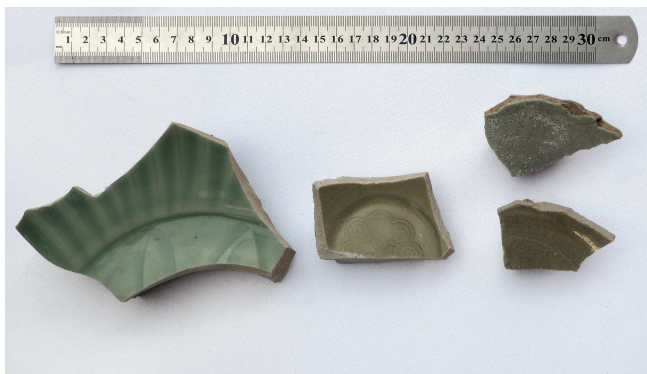

FIGURE 10
Base fragments of four Chinese celadon bowls datable to the fourth–seventh/tenth–thirteenth centuries
IMAGE COURTESY OF A. PETERSEN

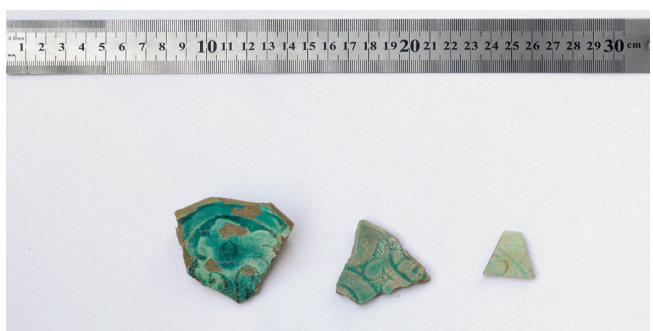

FIGURE 11
Fragments of Iranian blue glazed stonepaste bowls
IMAGE COURTESY OF A. PETERSEN

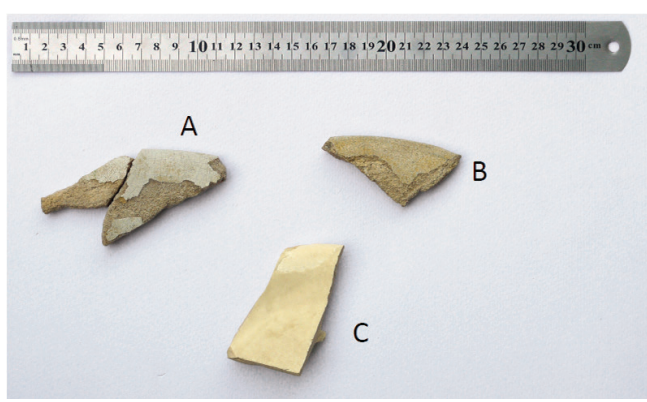

FIGURE 12
Rim fragments of locally produced white ware bowls ("a" and "b") and Chinese white porcelain ("c")
IMAGE COURTESY OF A. PETERSEN

7 Survey Results

The results of the survey work are still in process (in particular, identifying features with previously excavated areas), but a few preliminary results are available. These relate to 1) the Congregational Mosque of Imam ʿAli; 2) the linear ditch adjacent to the mosque; 3) the city wall; and 4) traces of domestic occupation in Area A. The survey results provide the basis for some observations on the development of the city, the potential for further investigation, and the priorities for conservation work.

7.1 *Mosque of Imam ʿAli* (Jami Khatwa ʿAli جامع خطوة الإمام علي)

For many centuries, the congregational mosque now known as the Jami Khatwa ʿAli has been the only monument consistently identified as part of the early Islamic city. Today, the site contains a small modern mosque and shrine as well as the remains of the early mosque set within a modern enclosure. The only standing remains at the site are an engaged corner tower, often misinterpreted as a minaret, which was recorded in the early twentieth century before its restoration during the 1980s (Sarre and Herzfeld, 1911: vol. 1 pp. 249–52, figs. 131–2) (Fig. 13). Based on the decorative brickwork, Herzfeld dated the structure to the same period as the Mustansariyya Madrassa in Baghdad built in 624/1227. Aside from the tower, a series of composite sandstone columns within the modern enclosure probably derived from the early mosque. Each column section (approx. 0.75-metre diameter × 0.40-metre thickness) consists of a thick round disc with a central hole, presumably for central reinforcing rods to tie the columns together (Fig. 14).

FIGURE 13
A corner tower of congregational mosque, April 2017
IMAGE COURTESY OF A. PETERSEN

FIGURE 14
A Sandstone column segments inside the compound of the congregational mosque, April 2017
IMAGE COURTESY OF A. PETERSEN

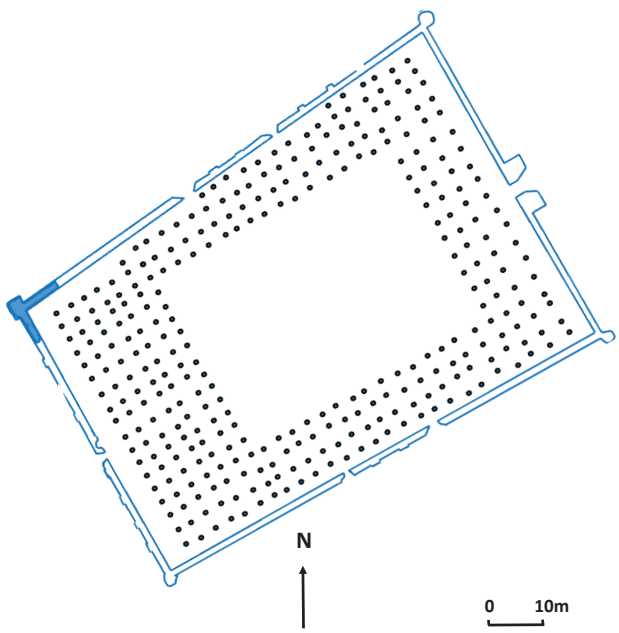

FIGURE 15
An outline plan of the excavated seventh/thirteenth-century phase of the mosque based on a drawing by Abd al-Sattar al-ʿAzawi
IMAGE COURTESY OF A. PETERSEN

The first archaeological excavations at the site began in December 1972, revealing an outline with the latest phase of the mosque. Unfortunately, there is no detailed publication of the excavations, and the site was subsequently remodelled. However, a summary published in *Iraq* provides the basic details (Postgate, 1983: pp. 191–2). The mosque formed a parallelogram with a maximum length of 185 metres and a width of 140 metres. According to the only published plan of the structure, the mosque had five entrances, a monumental gateway in the northern wall and two doorways each on the eastern and western sides, respectively. In addition, a small doorway is depicted next to the *mihrab* in the centre of the southern wall (Al-ʿAzawi n.d.) (Fig. 15). The upper part of the outer face of the enclosure walls were adorned with blind niches and pointed arches separated by

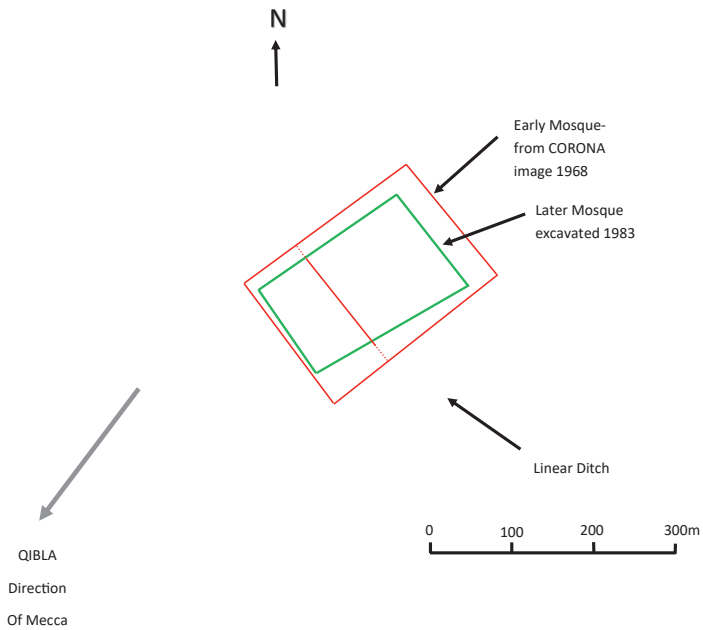

FIGURE 16
An outline plan of an excavated seventh/thirteenth-century mosque overlaid on an earlier mosque outline visible in the CORONA images
IMAGE COURTESY OF A. PETERSEN

engaged semi-columns. Other decorations consisted of interlace designs cut into the brick and a monumental Kufic inscription. Although the excavators did not assign a date to this phase of the structure, the use of cut brick decoration and its similarity to the standing corner tower suggests a date from the sixth–seventh/twelfth–thirteenth centuries. The excavators were aware that this was only the latest phase of the building and earlier phases existed, but no details were given. A comparison between the CORONA satellite images of the mosque before restoration and the drone images produced by our survey confirms the existence of an earlier building, which was both larger and on a slightly different alignment (Fig. 16).

7.2 *Linear Ditch Adjacent to Mosque of Imam ʿAli*

One of the principal visible features at the archaeological site of "Old Basra" is a ditch running from northwest to southeast, skirting the perimeter wall of the Mosque of ʿAli (locally known as Khatwa ʿAli Mosque) (Fig. 17). An analysis of the topographical data from the aerial survey indicates a height difference from the west to the east end of the ditch, (the change was twelve metres above mean sea level to less than three metres above mean sea level), within a horizontal distance of 500 metres. This represents a drop of nine metres in the bed of the channel from northwest to southeast, supporting the idea of a water channel. Examining the channel sides revealed large quantities of fired brick and ceramics in the area immediately adjacent to the mosque, with diminishing quantities to the southeast. This echoes the results of the boreholes (see below), indicating massive structures built of fired brick near the mosque with declining quantities to the south. The massive concentration of fired bricks appears to represent a later construction phase, probably post-dating the third–fourth/ninth–tenth centuries. After examining the sides of the channel, the evidence indicates that it cuts through structures built of fired brick with successive layers of occupation. Therefore, the channel post-dates the mosque and probably most of the fired brick structures in the vicinity, supporting a later mediaeval or further date for its excavation. Also visible within the banks of the water channel and in most of the boreholes are gravel deposits indicative of flash floods, which occurred during the occupation of the city.

The entire length of the linear ditch running along the southern and western sides of the mosque enclosure is clearly visible in the 1960s CORONA images of the site (Fig. 23).

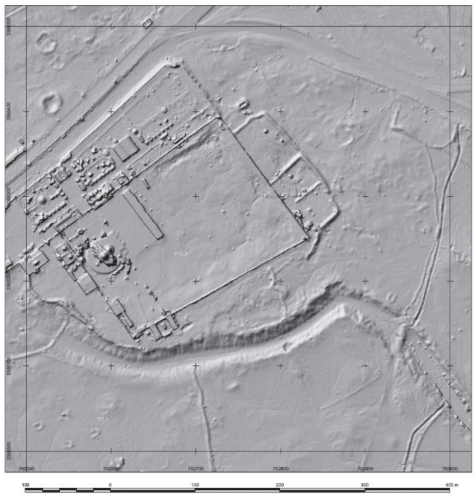

FIGURE 17
A DTM image of the Congregational Mosque with a ditch or water channel to the south, May 2018
IMAGE COURTESY OF F. STREMKE EARLY ISLAMIC BASRA PROJECT

The ditch forms an irregular arc from a point three kilometres north of the mosque to a point half a kilometre to the south, terminating at the edge of the area of inundation. At one point, approximately 500 metres west of the mosque, there is a kink in the line of the ditch – perhaps the remains of a bridge or gateway. The purpose of the ditch is unclear, but absent of any other function, it would have provided some form of protection for the mosque on the landward western side. Even though the dates of the ditch and associated wall are unknown – both clearly post-date the mosque and provide some form of protection – they are likely datable to the sixth/twelfth century or later (i.e., the date when the outer wall was abandoned).

7.3 *City Wall*

It is assumed that the Mosque of ʿAli stands at or near the centre of the early Islamic site but the outer boundaries are not well known. Aerial photographs from the UAV survey included a linear feature running north–south at the western edge of the site five kilometres west of the mosque (Fig. 18). This is clearly an early feature as some of the remains excavated during the 1970s were built to respect its line. An examination of this feature on the ground revealed it to be a defensive wall at least four metres high and approximately two metres wide. The wall appears to have been built predominantly of pisé, although both mud and fired brick were present (Fig. 19) The wall is also visible on Corona satellite images from the 1960s and maps produced in the 1930s show that its walls stretch for approximately eight kilometres (five miles). Apparently, there was a wide ditch or foss on the western side of the wall, but today, it is no longer visible. The wall only appears on the western and southern sides of the site (marked in red on Fig. 23) and seems to pass through the town of Zubair. The entire length of the city wall was examined in detail for evidence of construction. Important findings include that the wall was probably over four metres high (maximum current height is 3.45 metres) and had been built in horizontal bands of pisé or rammed earth gradually diminishing in height as it rises (e.g., heights of 0.86, 0.54, and 0.45). It also appears that the wall was built in three layers: an inner layer (0.70m thick), a core layer (0.80m thick), and an outer layer (up to 1.10m thick) (Fig. 20). Probably, the most interesting observation are the remains of at least two semi-circular buttresses on the outside of the wall, which may have formed part of a continuous corrugated walled outer surface (Fig. 21). Unfortunately, in most places, the area outside of the wall has been disturbed by recent construction and other activities so that it was not possible to investigate the line of the outer ditch. There is a secondary wall running perpendicular west-east from the city wall. It appears to represent some internal division or perhaps a contraction of the original area of the city. The secondary wall is visible

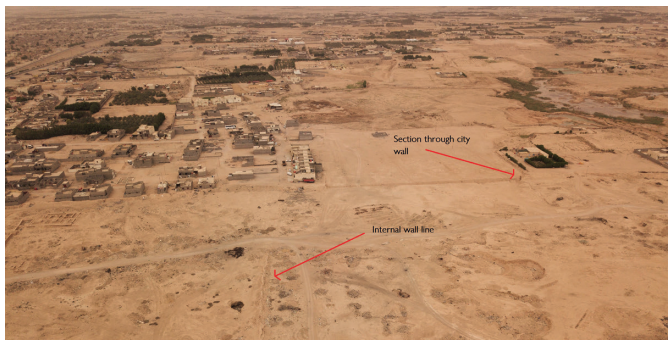

FIGURE 18
An oblique view of the city wall, May 2018
IMAGE COURTESY OF F. STREMKE EARLY ISLAMIC BASRA PROJECT

FIGURE 19
The city wall ground view, May 2018
IMAGE COURTESY OF A. PETERSEN

FIGURE 20
A section through the city wall, May 2018
IMAGE COURTESY OF A. PETERSEN

on both the satellite images and the UAV photo mosaic and seems to include many of the structures excavated by the State Board for Antiquities and Heritage during the 1970s.

According to early Islamic sources, the city wall, bordered by a ditch, was first built in 155/771–2 during the reign of the ʿAbbasid caliph al-Mansur (Pellat and Longrigg, 2012). Prior to the second/eighth century, the western limits of the city were marked by the *mirbad* (kneeling place for camels) market where camels coming from Arabia were loaded and unloaded. The walls formed a large semi-circle with a single gate, Bab al-Badiyah located near the Suq Mirbad. From historical descriptions, it seems likely that the city wall only encompassed the western side because the city boundary on the other sides (north, west, and south) was formed by a low-lying area subject to flooding. By the fifth/eleventh century, the town had declined considerably both as a result of the Zanj rebellion in the third/ninth century and the attacks of the Carmathians in the fourth/tenth century. According to the Persian traveller Nasir-i Khusrau, although the

FIGURE 21
A semi-circular buttress in the city wall, February 2019
IMAGE COURTESY A. PETERSEN

city wall was in good repair, many parts of the city were still ruinous. In 517/1123, the city wall was rebuilt by the Qadi ʿAbd al-Salam on a new line several kilometres within the line of the second/eighth-century wall (Pellat and Longrigg, 2012). When Ibn Battuta visited the city in 726/1326, he stated that the old city wall was two miles from the congregational mosque beyond the city walls during his visit (Gibb, 1929: p. 86). It is unclear whether the city wall, rebuilt during the sixth/twelfth century, enclosed the congregational mosque, and therefore, was different from the city walls in Ibn Battuta's time or if it was the same. If the latter, this suggests the city wall may have only enclosed a small area, possibly the area which became known as the town of Zubair. The contraction of the city leaving the congregational mosque outside the city walls is not unparalleled, and a similar situation existed in Ramla, Palestine, during the seventh/thirteenth century (Petersen, 2001). The city wall identified in the UAV survey and satellite images is almost certainly the one built in 155/772; consequently, the secondary wall was likely built later. This indicates that the excavated structures found within the area of the secondary wall are probably datable after the main wall during the third/ninth century or later.

7.4 *Occupation Area to the South of Mosque of ʿAli* (*Area A*)

Due to the large quantities of fired brick present beneath the surface immediately adjacent to the mosque, the main line of boreholes were laid out on a line 300 metres south of the Khatwa ʿAli Mosque (Fig. 22). The boreholes reached a maximum depth of 5.8 metres and gave a detailed view of the stratigraphy in this currently unoccupied area. The surface elevation of the boreholes varied between five and seven metres above sea level based on GPS survey and EGM2018 corrections. The main findings comprise a series of human-made deposits alternating with periods of abandonment to a depth of 5.6 metres. Cultural deposits included layers of fired brick, unfired mud brick, and layers of plaster. The water table was reached in five of the boreholes. In Borehole no. A4 cultural deposits, such as ceramics, were found below the level of the water table, possibly indicating a buried water channel later filled with debris. Borehole no. 3 at a depth of four metres, had the most promising set of occupation layers, containing both ceramics and organic material. Three organic samples (animal bone) from borehole nos. 3 and 4 (S6, S7, and S9) were sent to Beta Analytic in Miami for AMS C14 dating. The results of the analysis are shown in Table 1.

FIGURE 22
Borehole locations, February 2019
IMAGE COURTESY OF
A. PETERSEN

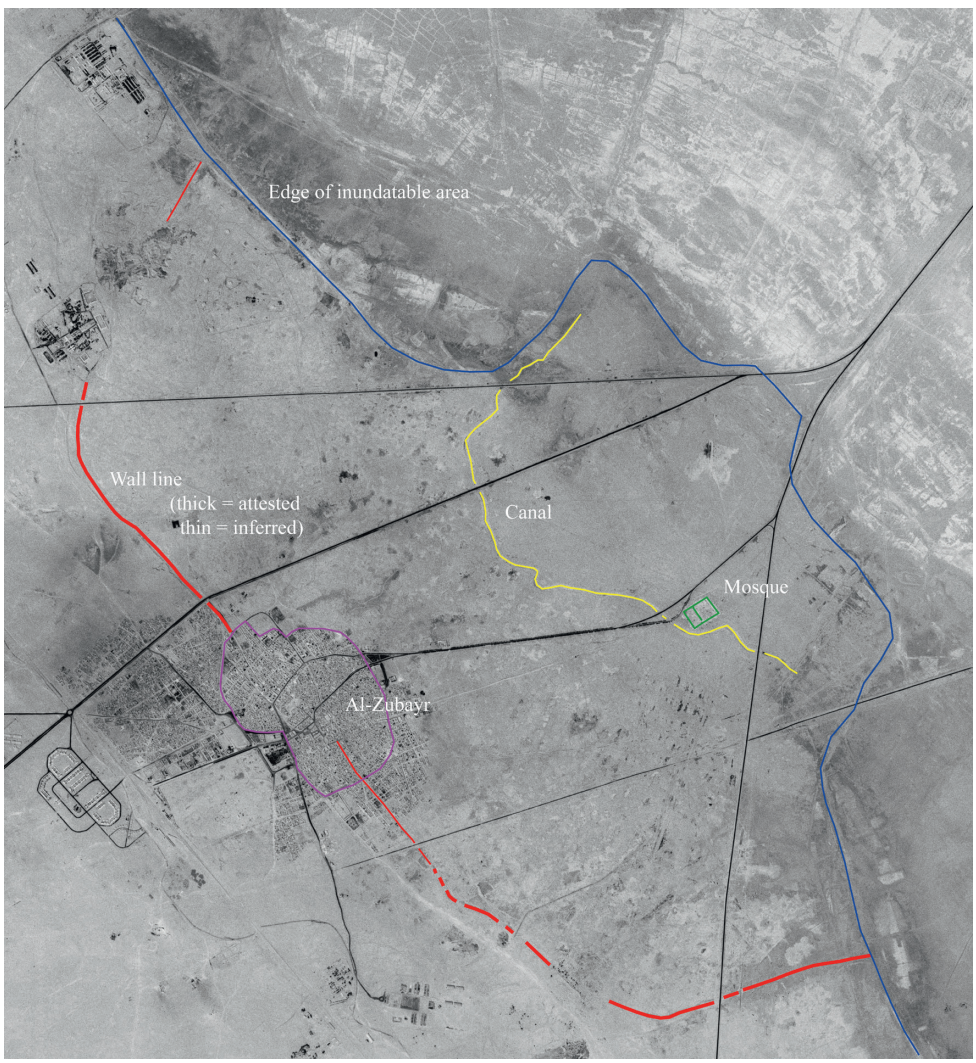

FIGURE 23
The location of the city wall and other features, CORONA image 1968
IMAGE COURTESY OF
A. PETERSEN

Sample	Borehole	Date BP	Calibrated AD	Calibrated BP	Depth
S6	BH3	1230 +/– 30 BP	(62.8%) 760–882 cal AD	(1190–1068 cal BP)	2.65m
			(32.6%) 668–751 cal AD	(1262–1199 cal BP)	
S7	BH3	1290 +/–30 BP	(95.4%) 664–770 cal AD	(1286–1180 cal BP)	3.02m
S9	BH4	1400 +/–30 BP	(95.4%) 598 cal AD	(1352–1281 cal BP)	1.65m

TABLE 1

According to historical sources, the area near the mosque was occupied by the Ahl al-ʿAliya, a tribal group from the Hijaz, although the precise location of the different tribal divisions in relation to the present topography is unknown. Nevertheless, the core samples taken from the area are consistent with domestic occupation levels, namely animal bone and teeth, ceramics, wood, and other organic materials. The range of dates for the samples reveals the earliest occupation of the site to be during the late-sixth to early-first/seventh centuries and that deposits of the early ʿAbbasid period are located at depths of 1.5–3.00 metres below the current ground surface.

8 Conclusion

The historical accounts and the archaeological data indicate that early Islamic Basra is an immensely rich and complex area of research. Certainly, in terms of size, approximately 4,000 hectares, the city was very large, and depending on the size of the population, it was relatively spacious, although probably in some areas densely populated. Preliminary examination of the aerial photographs, together with the results of Iraqi excavations during the 1980s, indicates that the southeastern part of the city was more densely populated with smaller houses, while the western and northern sections of the site appear to have had larger housing and palatial complexes. It is unclear whether this pattern persisted through time or simply represents the final phases of occupation. This is due to the lack of published information on the nature of the archaeological deposits and the stratigraphy to understand the dating or character of occupation in particular areas. Similarly, there are fewer than expected ceramic sherds on the surface as a whole. In most cases, pottery is only evident in places where the ground has been disturbed through archaeological excavations or modern construction work. However, data from the boreholes and the C14 dating indicate that the site was intensively occupied from the late-sixth to late-second/eighth centuries. Since ceramics are present and organic material is preserved to a depth of more than four metres, further controlled excavations will likely yield considerable information about the origins of the city and the lifestyle of its inhabitants.

While the site's potential is immense, there are also considerable threats to the archaeology of "Old Basra." The primary threat is the expansion of modern Zubair, which has been encroaching on the protected area of the historical site since the 1970s. A comparison of the CORONA images, Google Earth images, and our UAV survey shows that the expansion of Zubair has destroyed more than 50% of the designated archaeological site. There are signs that the pace of development is intensifying. Indeed, during the short duration of our work, new houses were built against the remains of the city wall. Priorities for the future include excavating securely dated contexts to construct a model of the site stratigraphy. This will not only help in understanding the city's development but should contribute to more knowledge on the development of ceramics for which the city is famous. More importantly, the results of excavations can be used both

to inform on-site conservation and through education, increase awareness of the city's heritage both locally and internationally.

Bibliography

Akbar, J. (1989). Khaṭṭa and the Territorial Structure of Early Muslim Towns. *Muqarnas* 6, pp. 22–32.

Al-Janabi, T. J. (1975). Studies in Medieval Iraqi Architecture. 2 Vols. Ph.D. Thesis, Edinburgh University.

Al-Sayyad, N. (1996). The Study of Islamic Urbanism: An Historiographic Essay. *Built Environment* 22(2), pp. 91–7.

Al-ʿAzawi, A. S. (1985). بصرة خلال التنقيب ولصيانة لسنة ١٩٨٠–د٠ن القاهرة ١٩٨٥ [Basra About excavations and restorations during the years 1980–5, Cairo D.N. Publications].

Antun, T. (2016). *The Architectural Form of the Mosque in the Central Arab Lands, from the Hijra to the End of the Umayyad Period, 1/622–133/750*. Oxford: Archaeopress.

Benco, N. L. (2004). Anatomy of a Medieval Islamic Town, al-Basra. Morocco, Oxford: BAR International Series 1234.

Creswell, K. A. C. (1932–40). *Early Muslim Architecture*. 2 Vols. Oxford: Oxford University Press.

Creswell, K. A. C. (1958). *A Short Account of Early Muslim Architecture*. Harmondsworth: Penguin.

Creswell, K. A. C., and Allan, J. W. (1989). *A Short Account of Early Muslim Architecture*. Aldershot: Scolar Press.

Djait, H. (1986). *Al-Kufa, Naissance de la ville islamique*. Paris: Maisonneuve et Larouse.

Donner, F. (1984). Tribal Settlement in Basra in the First Century AH. In: T. Khalidi, ed., *Land Tenure and Social Transformation in the Middle East*, Beirut: American University in Beirut, pp. 97–120.

Gibb, H. A. R. (1929). *Ibn Battuta Travels in Asia and Africa 1325–54*. London: Routledge and Kegan Paul.

Gorzalczany, A. (2021). The Gezer Aqueduct to Umayyad Ramla. In: A. Petersen and D. Pringle, eds., *Ramla City of Muslim Palestine: 715–1917*, Oxford: Archaeopress, pp. 64–73.

Hoyland, R. (2019). The Founding of Basra and its Early Development. In: P. Collins, ed., *Basra its History, Culture and Heritage Proceedings of the Conference Celebrating the Opening of the Basrah Museum September 28–9, 2016*, London: British Institute for the Study of Iraq, pp. 49–52.

Kennedy, H. (2011). Feeding of the 500,000 Cities and Countryside in Early Islamic Mesopotamia. *Iraq* 73, pp. 177–199.

Kramers, J. H. (2000). al-Uballa pp. 765–6 in *Encyclopaedia of Islam New Edition* Vol. 10.

Mason, R., and Keall, E. J. (1991). The ʿAbbāsid Glazed Wares of Sīrāf and the Baṣra Connection: Petrographic Analysis. *Iran* 29, pp. 51–66.

Massignon, L. (1954). Explication du Plan de Basra (Irak). In: Y. Moubarac, ed., *Louis Massignon Opera Minora* Tome II Dar al-Maaref Lebanon pp. 61–87.

Mustafa, M. A. (1954). Excavations at Kufa. *Sumer* 10(1), pp. 73–85.

Mustafa, M. A. (1954). Excavations at Kufa. *Sumer* 12(3), pp. 3–32.

Naji, A. J., and Ali, Y. N. (1981). The Suqs of Basrah: Commercial Organization and Activity in a Medieval Islamic City. *Journal of the Economic and Social History of the Orient* 24(3), pp. 298–309.

Nelson, H. (1962). An Abandoned Irrigation System in Southern Iraq. *Sumer* 18, pp. 67–72.

Niebhur, C. (1780). *Voyage en Arabie et en autre Pays circonvoisins* Vol. 2b Utrecht, Barthelemy Wild.

Northedge, A. (2022). Calculating the Population of Samarra. In: M. Berkel and L. Osti, eds., *The Historian of Islam at Work: Essays in Honour of Hugh Kennedy*, Leiden: Brill, pp. 210–233.

Nutzel, W. (1982a). The End of the South Mesopotamian Civilization Caused by the Bursting of the Dykes of the Euphrates and Tigris in 629 AD. *Sumer* 37(1.2), pp. 144–8.

Nutzel W. (1982b). The Cultivated Land of the Shatt al-Arab as described by Ibn Serapion in 900. *Sumer* 37(1.2), pp. 149–51.

Pellat, Ch and Longrigg, S. (2012). al-Basra. In P. Bearman, Th. Bianquis, C. E. Bosworth, E. van Donzel, and W. P. Heinrichs, eds., *Encyclopaedia of Islam, Second Edition*. Consulted online 28 January 2021.

Petersen, A. D. (2001). Ramla in the Mamluk Period. In: U. Vermeulen and J. Steenberg, eds., *The History of Egypt and Syria in the Fatimid, Ayyubid and Mamluk Eras III*, Leuven: Peeters, pp. 345–60.

Petersen, A. D. (2019). The Archaeology of Early Islamic Basra: Challenges and Potential. In: P. Collins, ed., *Basra its History, Culture and Heritage Proceedings of the Conference Celebrating the Opening of the Basrah Museum September 28–9, 2016*, London: British Institute for the Study of Iraq, pp. 53–8.

Postgate, J. N. (1972). Excavations in Iraq 1971–2. *Iraq* 34, pp. 139–50.

Postgate, J. N. (1973). Excavations in Iraq 1972–3. *Iraq* 35, pp. 188–209.

Postgate, J. N., and Watson, P. J. (1979). Excavations in Iraq. *Iraq* 41, pp. 141–81.

Priestman, S. M. (2011). Opaque Glazed Wares: the Definition, Dating, and Distribution of a Key Ceramic Export in the Abbasid Period. *Iran* 49, pp. 89–113.

al-Qatarani, F. S. A. (2015). The Old City of Al-Zubair: the Emergence and Physical Reality (1571–1882 Iraq). *Bulletin of Geography* 27, pp. 17–32.

Sakly, M. Wasit al-Baṣra, In: P. Bearman, Th. Bianquis, C. E. Bosworth, E. van Donzel, and W. P. Heinrichs, eds., *Encyclopaedia of Islam, Second Edition*. Consulted online on 10 July 2022 <http://dx.doi.org.ezproxy.uwtsd.ac.uk/10.1163/1573-3912_islam_SIM_1269>.

Safar, F. (1945). *Wasit: the Sixth Seasons's Excavations*. Cairo: L'Institut français d'archéologie orientale.

Sayyid Ali Reis (1917). The 'Mirror of Countries' (A.D. 1556) in: C. Horne, ed., *The Sacred Books and Early Literature of the East*, vol. VI, New York: Parke, Austin, and Lipscomb, pp. 329–95.

Simpson, S. (2019). Ard Maysan and the Land behind Basra in Late Antiquity. In: P. Collins, ed., *Basra its History, Culture and Heritage Proceedings of the Conference Celebrating the Opening of the Basrah Museum September 28–9, 2016*, London: British Institute for the Study of Iraq, pp. 35–48.

Sinclair, W. F. (1902). *The Travels of Pedro Teixeira*. London: Hakluyt Society.

Verkinderen, P. (2015). *Waterways of Iraq and Iran in the Early Islamic Period: Changing Rivers and Landscapes of the Mesopotamian Plain*. London and New York: I. B. Tauris.

Wheatley, P. (2001). *Places Where Men Pray Together: Cities in the Islamic Lands, Seventh through the Tenth Centuries*. Chicago: University of Chicago Press.

Yver, G. al-Baṣra. In: P. Bearman, Th. Bianquis, C. E. Bosworth, E. van Donzel, and W. P. Heinrichs, eds., *Encyclopaedia of Islam, Second Edition*. Consulted online on 10 July 2022 http://dx.doi.org.ezproxy.uwtsd.ac.uk/10.1163/1573-3912_islam_SIM_1269.

Notes

1 This research would not have been possible without the enthusiastic support and encouragement of Qahtan al-Abeed and the State Board for Heritage and Antiquities in Iraq. The authors thank the British Institute for the Study of Iraq for logistical help and financial support to initiate the Early Islamic Basra Project. The Max van Berchem Foundation has provided invaluable funding to support further fieldwork. We also had considerable help from Juliette Desplat at the National Archives, who helped us access aerial photographs, maps, and reports on "Old Basra." We are grateful to the two anonymous reviewers who gave valuable advice on the presentation of the article and the historical context.

2 Further information on the project can be found in Petersen (2019).

3 For example, see Wheatley (2001: 245, fig. 17).